5640 Stanley Avenue

Traffic Impact Study

9431870 Canada Corp

17 July 2023

The Power of Commitment

Executive Summary

GHD Limited is pleased to provide the following Traffic Impact Study for a proposed mixed-use development located at 5640 Stanley Avenue in the City of Niagara Falls.

This report determines the site related traffic and subsequent traffic related impacts on the adjacent road network and site driveways during the weekday a.m. and p.m. peak hours. These impacts are based on the projected future background traffic and road network conditions derived for a 2025, 2030, and 2035 future planning horizon year.

Based on the approved Terms of Reference for the study, the following intersections were included in the study area:

- Highway 420/Falls Avenue and Stanley Avenue
- Stanley Avenue and North Street
- North Street and Buchanan Avenue
- North Street and the site access
- Stanley Avenue and the site access

The proposed site plan was prepared by ACK Architects Studio Inc. and consists of a 14-storey building with 162 dwelling units and 2,042 ft^2 of ground floor commercial area.

Access to the subject site is proposed via two full-moves accesses: an access along North Street and an access along North Street.

Based on ITE Trip Generation rates, the subject site is expected to generate a total of 64 two-way vehicle trips during the a.m. peak hour consisting of 19 inbound and 45 outbound trips. During the p.m. peak hour, it is expected to generate 90 new two-way vehicle trips consisting of 53 and 37 outbound trips.

Under existing traffic conditions, all intersections are operating at acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours.

Under the 2025, 2030 and 2035 future background traffic conditions, all intersections are reported to continue to operate with acceptable v/c ratios, delays and queuing.

Under the 2025, 2030 and 2035 future total traffic conditions, all intersections are reported to continue to operate with acceptable v/c ratios, delays and queuing with the exception of the 2035 horizon year.

With the addition of site generated traffic under the 2035 future total condition, the following intersection movements are reported as critical, however, all remain below the theoretical capacity of each movement with v/c ratios less than 1.0:

Highway 420/Falls Avenue and Stanley Avenue

- The overall intersection with a v/c ratio of 0.89 LOS D during the p.m. peak hour
- The eastbound left-turn with a v/c ratio of 0.88 LOS E during the p.m. peak hour
- The westbound through with a v/c ratio of 0.90 LOS E during the p.m. peak hour
- The southbound left-turn with a v/c ratio of 0.92 LOS E during the p.m. peak hour

Application of the City of Niagara Falls By-Law 79-200 parking rates to the subject site results in a requirement of a minimum of 232 vehicular parking spaces. Application of the City's By-law 2019-44 rates to the subject site results in a requirement of 7 barrier free spaces

The subject site provides a total of 213 vehicular parking spaces, including 7 barrier free spaces, and one loading space. The 213 vehicle parking spaces represents a shortfall of 19 spaces from the By-law requirement.

The proposed parking supply is in line with the 2016 Transportation Tomorrow Survey data for auto ownership specific to apartment units within the area surrounding the subject site. Additionally, TDM measures are proposed for the subject site to encourage residents to explore various modes of transportation in order to reduce their dependency on single occupancy vehicle trips. These measures include a reduction in the parking supply, pedestrian connections to the municipal rights-of-way and transit information packages.

The traffic study confirms that the proposed mixed-use development can be accommodated on the existing/planned road network.

We trust that this satisfies your requirements, but do not hesitate to contact the undersigned if you have any questions.

Sincerely,

GHD

Rafael Andrenacci, B.Eng

Transportation Planner

William Maria, P. Eng.

Transportation Planning Lead

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1. Introduction

1.1 Retainer and Objective

GHD Limited was retained to prepare a Traffic Impact Study for a proposed mixed use development located at 5640 Stanley Avenue in the City of Niagara Falls.

The site location is illustrated in **Figure 1**.

The purpose of this study is to:

- Establish baseline traffic conditions for the study area in 2023 and determine future background operating conditions for a future planning horizon in 2025, 2030, and 2035.
- Estimate the site trips generated by the proposed development and distribute the traffic to the adjacent road network.
- Determine future operating traffic conditions during the weekday peek periods through intersection capacity analysis.
- Recommend TDM measures to reduce single occupancy vehicle trips to the site.

1.2 Study Team

The GHD team involved in the preparation of the study are:

- William Maria, P. Eng., Transportation Planning Lead
- Rafael Andrenacci, B.Eng., Transportation Planner

Figure 1 Site Location

2. Site Characteristics

2.1 Study Area

As per the agreed Terms of Reference for the study attached in **Appendix A**, the following intersections were included in the study area:

- Falls Avenue/Highway 420 and Stanley Avenue
- Stanley Avenue and North Street

- North Street and Buchanan Avenue
- Stanley Avenue and the site access
- North Street and the site access

2.2 Proposed Development Content

A site plan prepared by ACK Architects Studio Inc. is shown in **Figure 2** and provided in **Appendix B**. It consists of a 14-storey building with 162 dwelling units and 2,042 ft^2 of commercial GFA.

Access to the subject site is proposed via a full-moves driveway on Stanley Avenue and a full-moves driveway on North Street.

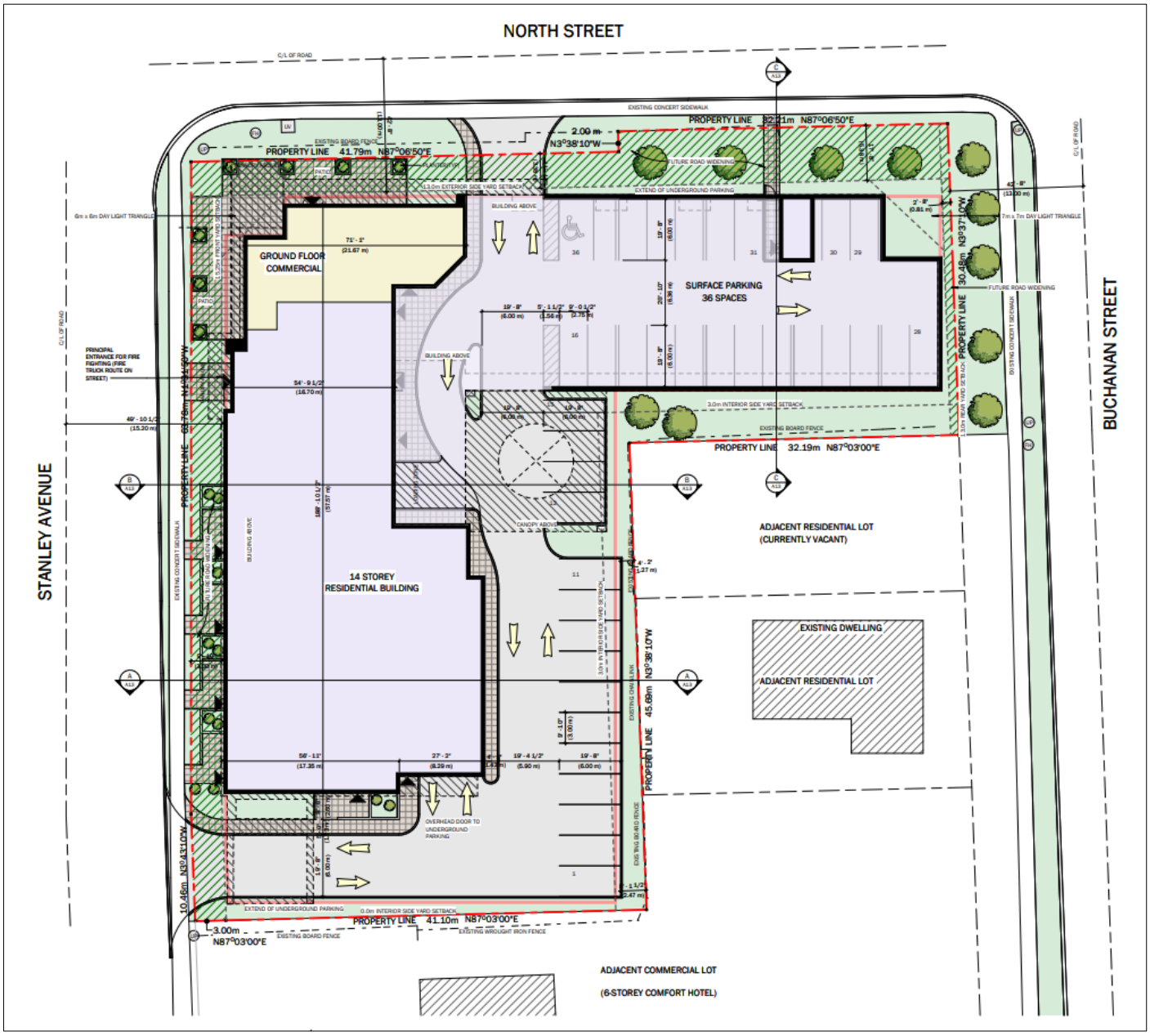

Figure 2 Proposed Site Plan

3. Existing Conditions

3.1 Existing Road Network

Highway 420/Falls Avenue is an east/west Class 1A - Freeway under the jurisdiction of the Ministry of Transportation (MTO) west of Stanley Avenue and an arterial road under the jurisdiction of Niagara Region east of Stanley Avenue. At its signalized intersection with Stanley Avenue, the eastbound approach consists of two auxiliary left-turn lanes, three through lanes and one auxiliary right-turn lane. Its westbound approach consists of one auxiliary left-turn lane, two through lanes and one auxiliary right-turn lane. The posted speed limit along Highway 420/Falls Avenue is 60 km/h within the study area.

Stanley Avenue is a north/south arterial road under the jurisdiction of Niagara Region. Within the study area it has a five-lane cross-section with a two-way left-turn lane in the centre median. Its intersection with Highway 420/Falls Avenue is signalized with auxiliary left-turn and right-turn lanes in both the northbound and southbound directions. Additionally, one of the northbound through lanes operates as a shared through/right movement. Its intersection with North Street is unsignalized with the stop-control provided along the minor approach of North Street only. The posted speed limit along Stanley Avenue is 50 km/h.

North Street is an east/west collector road under the jurisdiction of the City of Niagara Falls. Within the study area it has a two-lane cross-section. Its intersections with Stanley Avenue and Buchanan Avenue are both unsignalized with the stop-control only provided along the minor approach. The assumed posted speed limit along North Street is 50 km/h.

Buchanan Avenue is a north/south collector road under the jurisdiction of the City of Niagara Falls. Within the study area it has a two-lane cross-section. Its intersection with North Street is unsignalized with the stop-control only provided along the minor approach on Buchanan Avenue. The assumed posted speed limit along Buchanan Avenue is 50 km/h.

The existing lane configurations and intersection control are illustrated in the following figure.

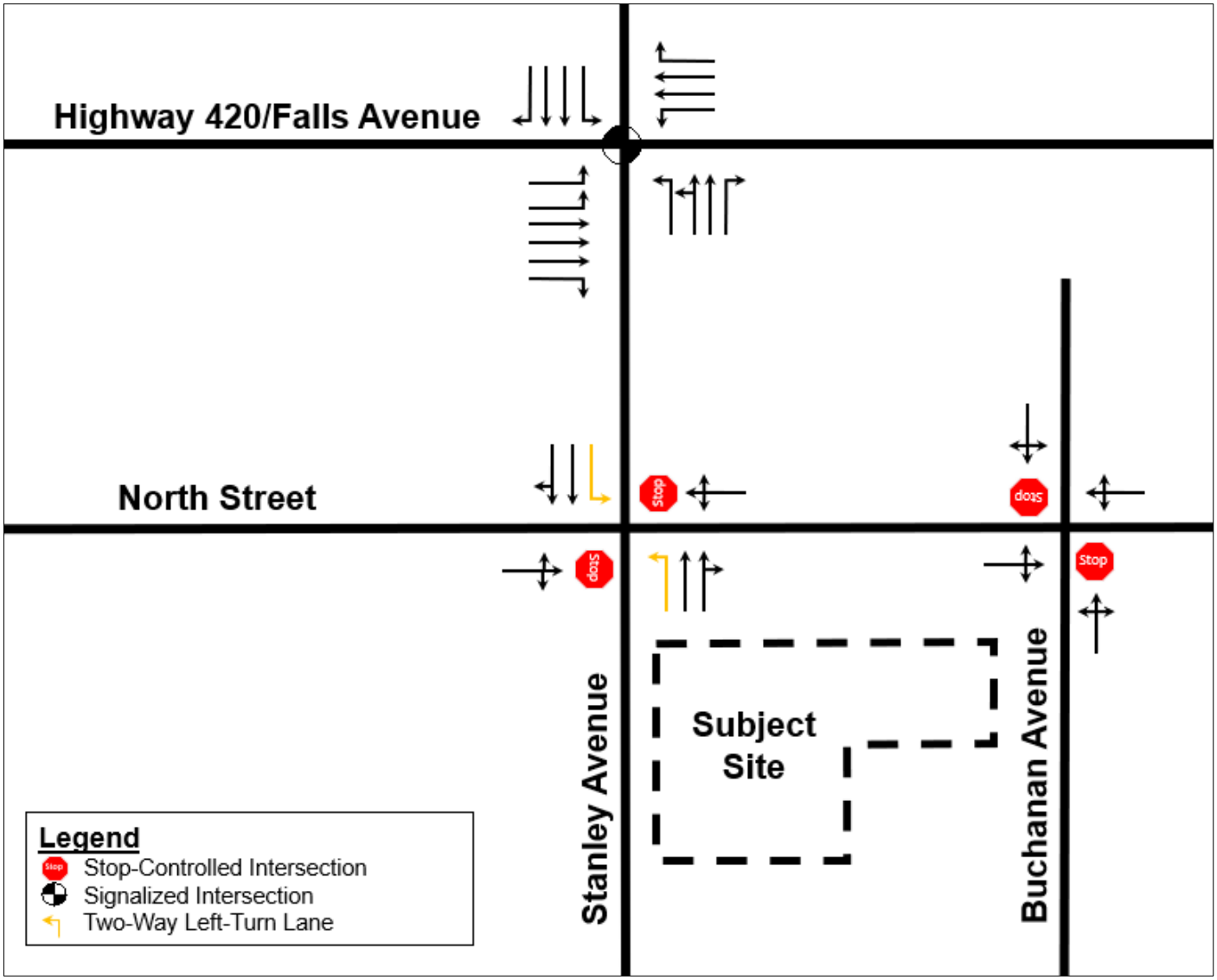

Figure 3 Existing Lane Configuration and Traffic Controls

3.2 Pedestrian and Bicycle Facilities

Within the study area, sidewalks are provided on both sides of all study area roads with the exception of Highway 420/Falls Avenue and the north side of North Street west of Stanley Avenue.

The pedestrian sidewalks are illustrated in the figure below.

Figure 4 Existing Active Transportation Facilities

3.3 Transit Services

Niagara Region Transit currently does not provide any transit service within the study area. The nearest transit stop is located approximately 450 metres south of the subject site and services bus routes 104, Blue, Red, and Red Express.

GO Transit operates Route 12 within the study which operates between the Niagara Falls Bus Terminal and the Park and Ride lot at Dundas Street and Highway 407 with a stop at the Burlington GO Station. The nearest transit stop is located north of the site at Stanley Avenue and Highway 420/Falls Avenue. The route operates with a headway of approximately one hour throughout the day.

3.4 Existing Traffic Data

GHD contracted Spectrum Traffic Inc. to conduct updated turning movement counts at all the study intersections in May 2023. The baseline 2023 traffic volumes for the a.m. and p.m. peak hours are summarized in **Figure 5** below with the full turning movement counts provided in **Appendix C.**

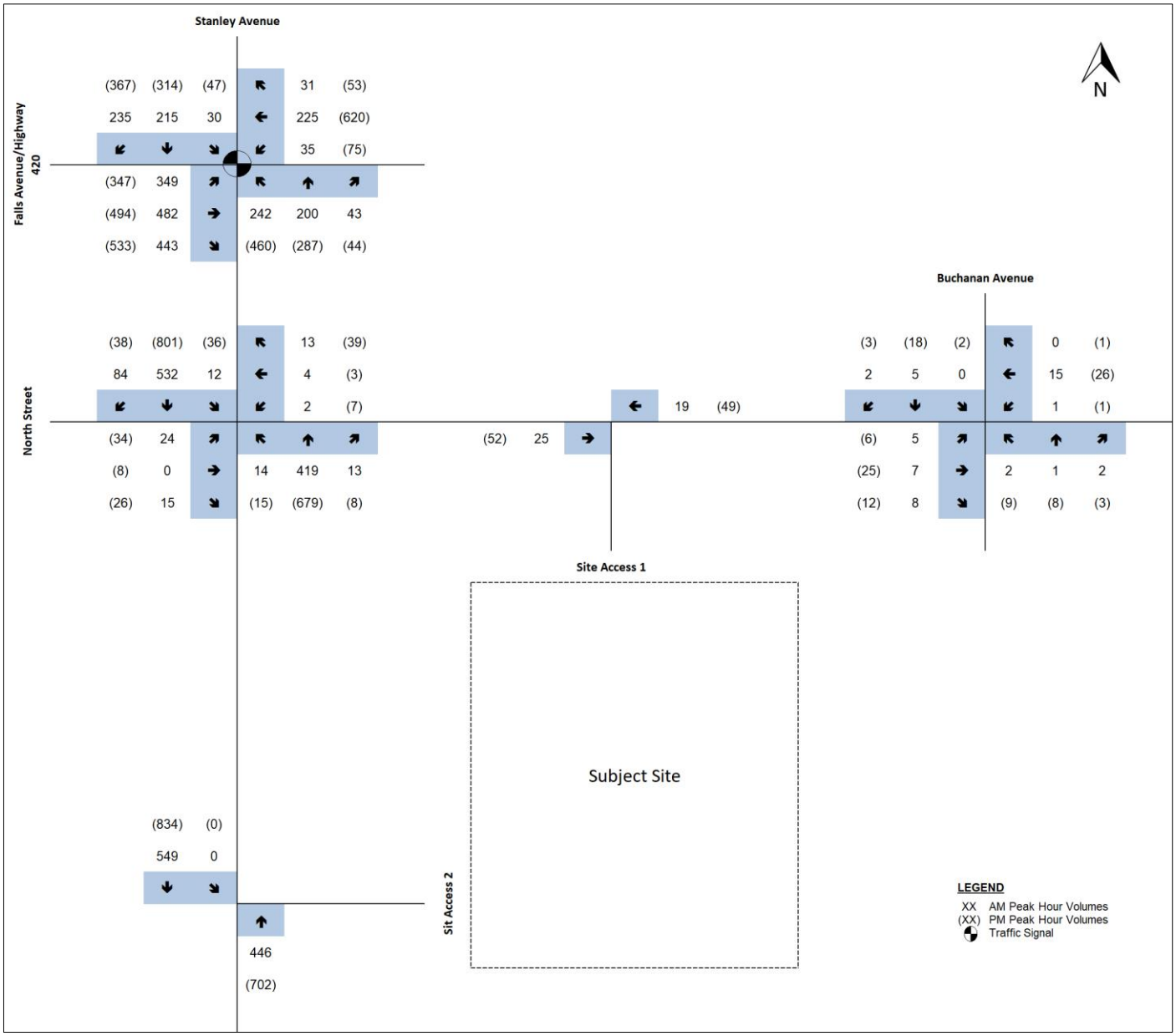

Figure 5 Baseline 2023 Traffic Volumes

4. Future Conditions

4.1 Study Horizon Year

Future horizon years of 2025, 2030, and 2035 representing build-out, five years post build-out, and ten years post build-out were selected for the analysis of future traffic conditions, generally consistent with the MTO's guidelines and was agreed to in the Terms of Reference for this project.

4.2 Corridor Growth

A 2% growth rate was applied to all movements along each road within the study area to estimate corridor growth up to the future horizon years as agreed to in the Terms of Reference with City and Region Staff.

4.3 Background Development Traffic

City of Niagara staff have indicated that there are no background developments located near the subject site that would contribute traffic volumes at the study intersections.

4.4 Future Background Traffic Volumes

The background traffic volumes for the 2025, 2030, and 2035 horizon year were derived by applying the respective growth rates to the study area roads. The resulting 2025, 2030, and 2035 future background traffic volumes are summarized in **Figure 6, Figure 7,** and **Figure 8**.

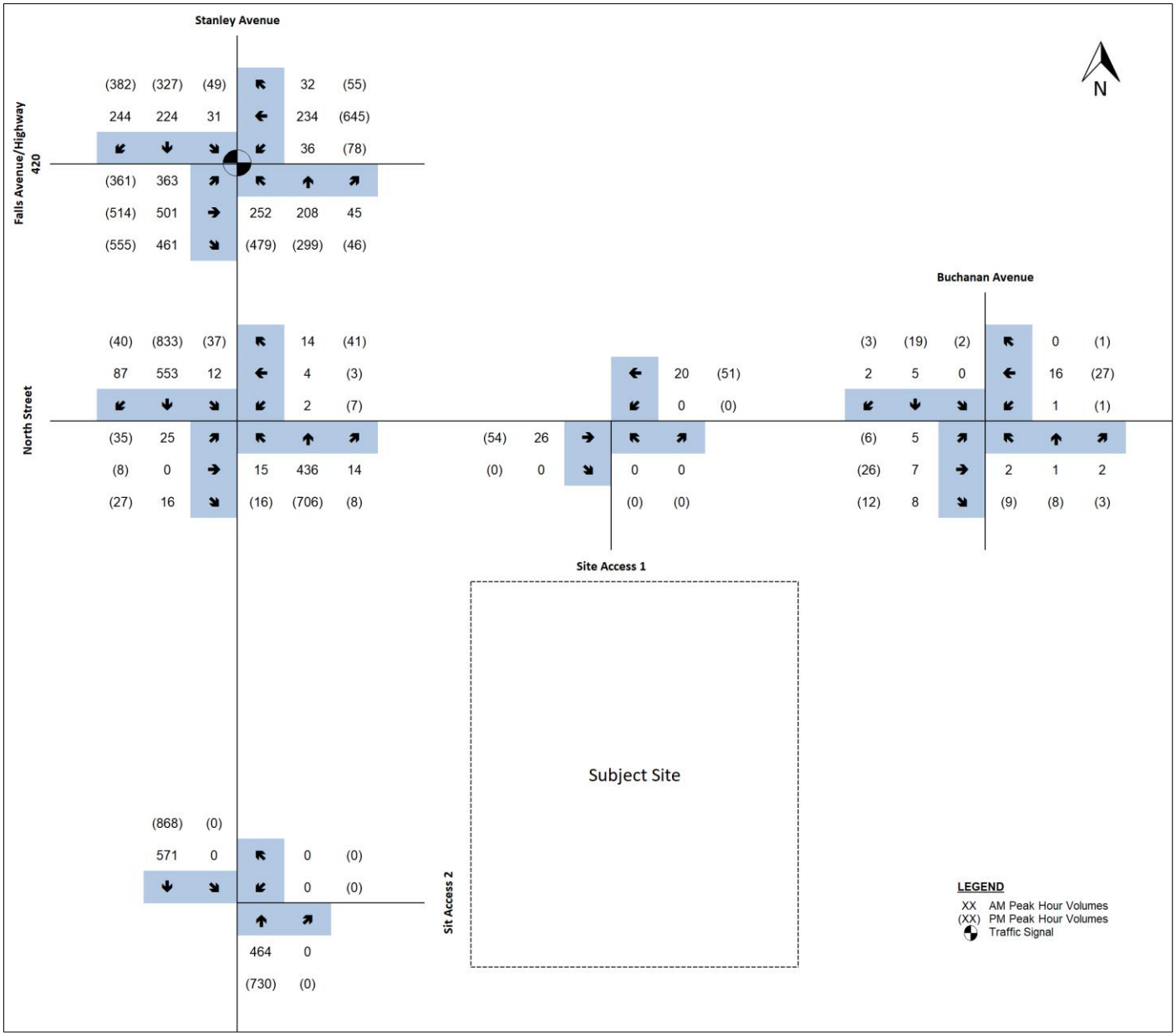

Figure 6 2025 Future Background Traffic Volumes

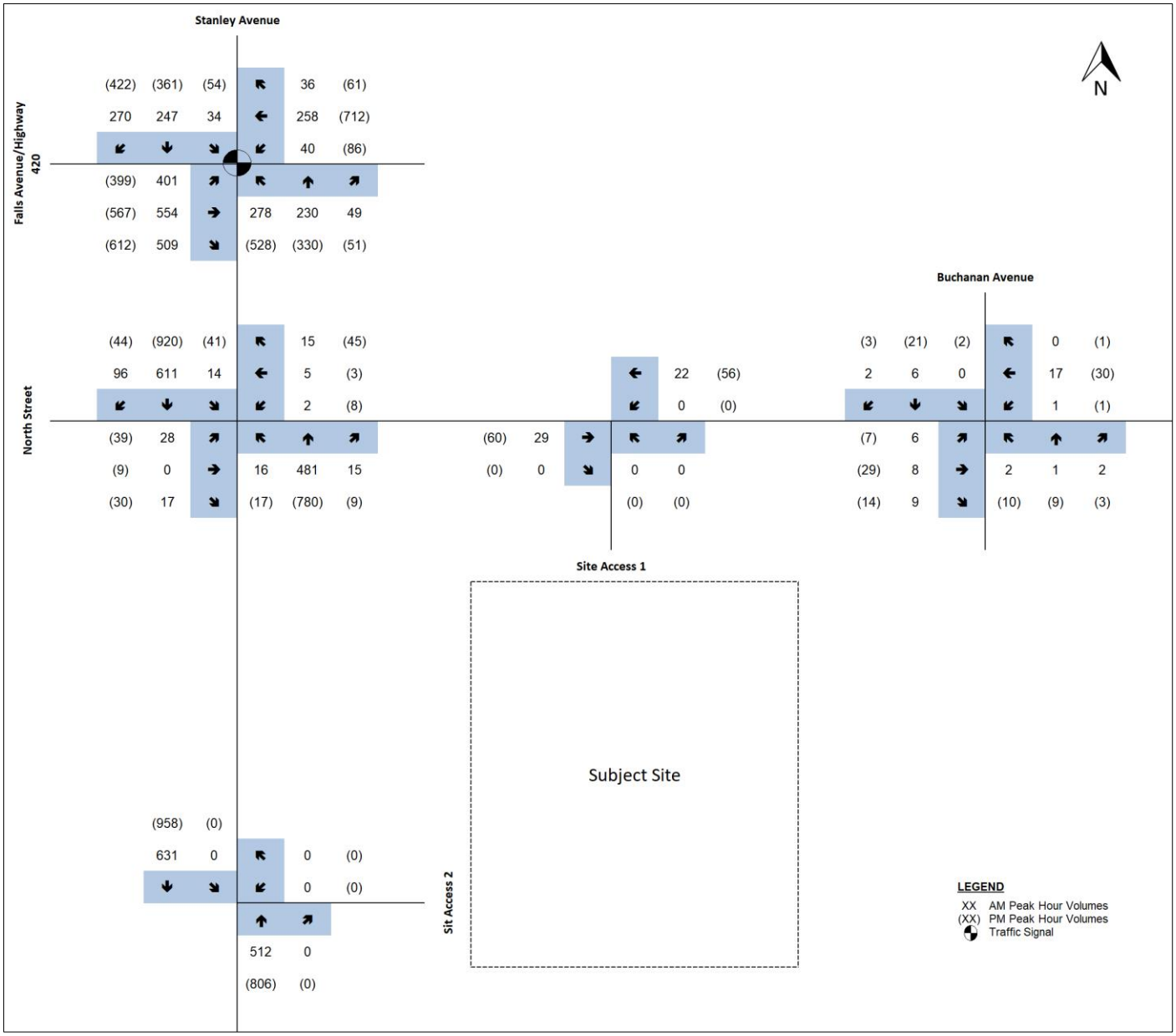

Figure 7 2030 Future Background Traffic Volumes

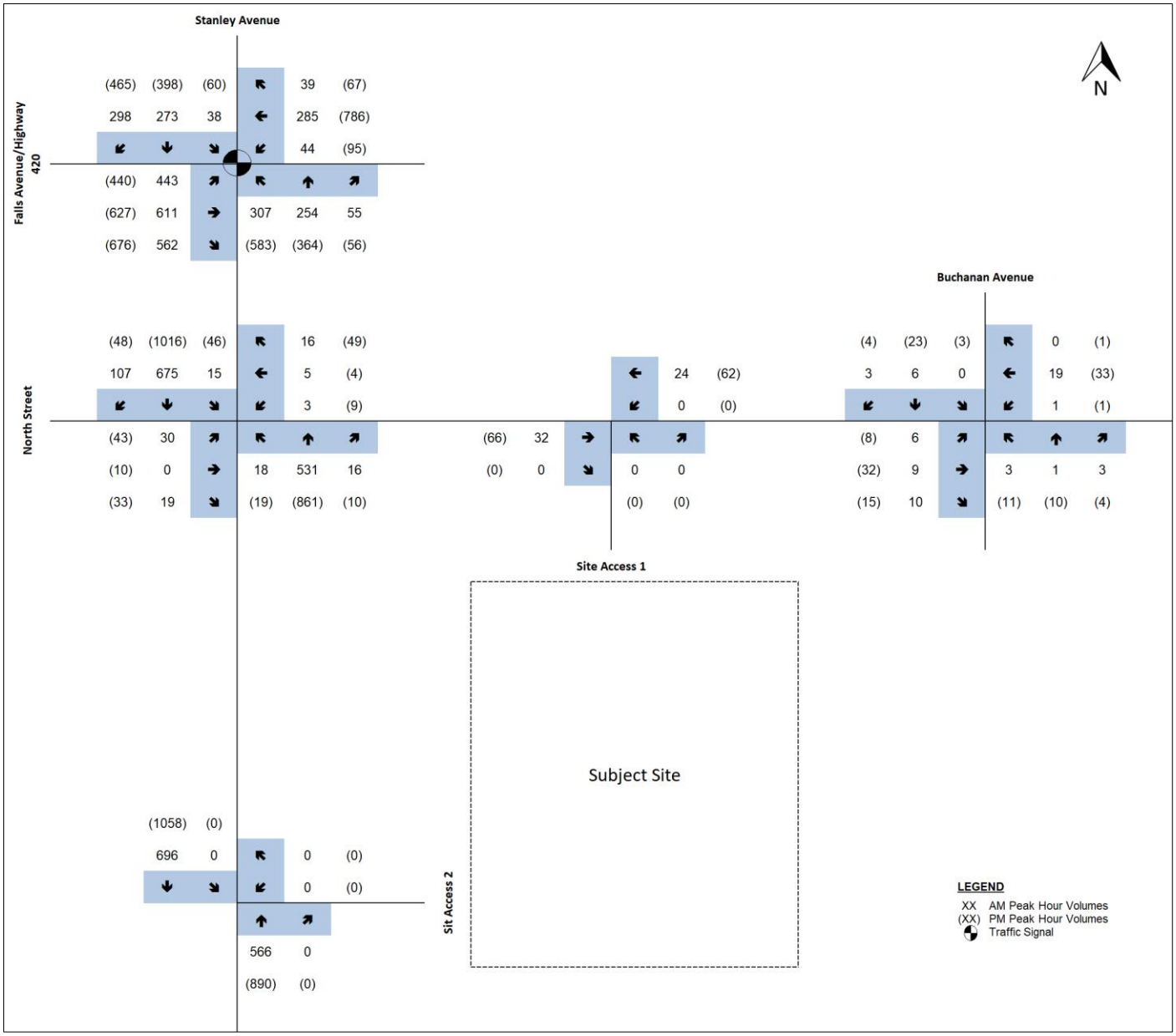

Figure 8 2035 Future Background Traffic Volumes

5. Site Generated Traffic

5.1 Modal Split

Based on the availability of transit near the subject site and to provide a conservative analysis of future traffic conditions, no transit modal split reduction was applied to the estimated site generated trips.

5.2 Site Trip Generation

The proposed development consists of a high-rise building with 162 dwelling units and 2,042 ft^2 of commercial space.

Site traffic generated by the proposed development for the weekday a.m. and p.m. peak hours was estimated by applying the trip rates for Land Use Code 222 Multifamily Housing (High-Rise) for the residential dwelling units and 822 Strip Retail Plaza (<40K) for the commercial space in the 11th Edition of the Trip Generation Manual published by the Institute of Transportation Engineers (ITE).

Table 1 summarizes the estimated trip generation for the subject site. A comparison of the fitted curve equations and average rates for each individual Land Use Code was completed, whichever calculation resulted in a greater trip generation was used as a conservative measure. Also, as a conservative measure, a reduction in site traffic to account for pass-by traffic has not been considered. It is expected however, that most traffic generated by the ground floor commercial will be local walk-in traffic.

Table 1 Total Site Trip Generation

Land Use Code	Dwelling Units/GFA	Parameters	Peak Hour Trip Generation					
			Weekday AM			Weekday PM		
			In	Out	Total	In	Out	Total
Multifamily Housing (High-Rise) LUC 222	162 dwelling units	Trip Rate	0.086	0.247	0.333	0.247	0.154	0.401
		Trip Ratio	26%	74%	100%	62%	38%	100%
		New Trips	14	40	54	40	25	65
Strip Retail Plaza (LUC 822)	2,042 ft^2 GFA	Trip Rate	2.449	2.449	4.897	6.366	5.877	12.243
		Trip Ratio	60%	40%	100%	50%	50%	100%
		New Trips	5	5	10	13	12	25
Total Trips			**19**	**45**	**64**	**53**	**37**	**90**

The proposed development is expected to generate a total of 64 two-way vehicle trips during the a.m. peak hour consisting of 19 inbound and 45 outbound trips. During the p.m. peak hour, it is expected to generate 90 new two-way vehicle trips consisting of 53 and 37 outbound trips.

5.3 Site Traffic Distribution and Assignment

The site generated traffic for the subject site was distributed based on the existing travel patterns and a review of the 2016 Transportation Tomorrow Survey (TTS) data. The trip assignment for the residential component assigned trips

along either Falls Avenue/Highway 420 and Stanley Avenue based on a review of the 2016 TTS and existing travel patterns. The trip assignment for the retail component primarily assumed a more local distribution and assigned trips in the north and south directions based on the existing north/south split.

The directional distribution was completed for passenger vehicles for the residential and retail trips separately and is provided in **Table 2** and **Table 3** respectively with the site generated traffic assignment to the study area road network for the weekday a.m. and p.m. peak hours provided in **Figure 9** for the residential site trips, **Figure 10** for the retail trips, and the site's total site trips in **Figure 11**.

Table 2 Site Traffic Distribution - Residential

Peak Period	Direction	North (Stanley Avenue)	South (Stanley Avenue)	East (Falls Avenue)	West (Highway 420)
AM	Inbound	20%	20%	10%	50%
	Outbound	20%	20%	15%	45%
PM	Inbound	20%	10%	10%	60%
	Outbound	20%	25%	15%	40%

Table 3 Site Traffic Distribution - Retail

Peak Period	Direction	North (Stanley Avenue)	South (Stanley Avenue)
AM	Inbound	55%	45%
	Outbound	45%	55%
PM	Inbound	54%	46%
	Outbound	46%	54%

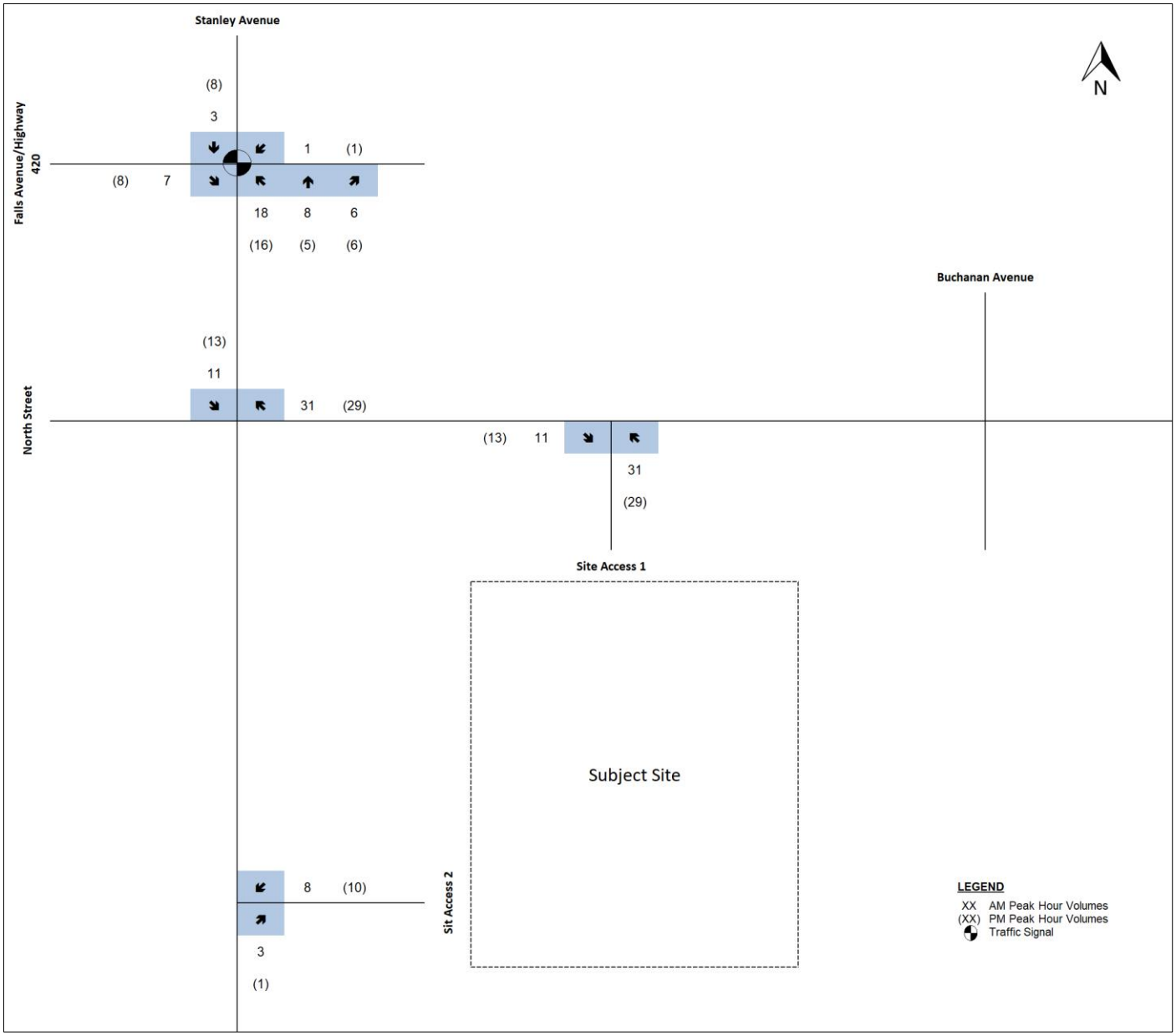

Figure 9 Site Trips – Residential

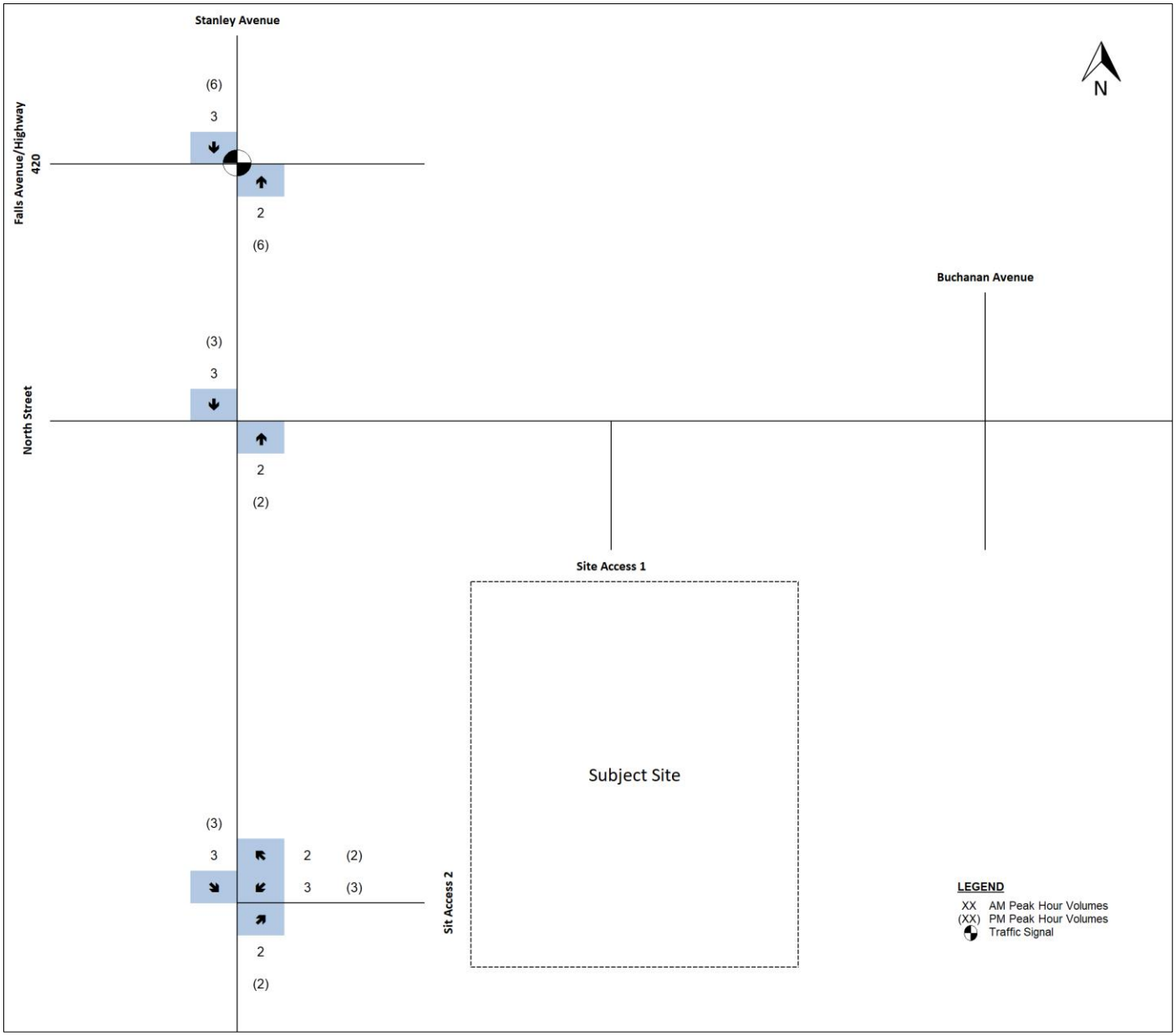

Figure 10 Site Trips – Retail

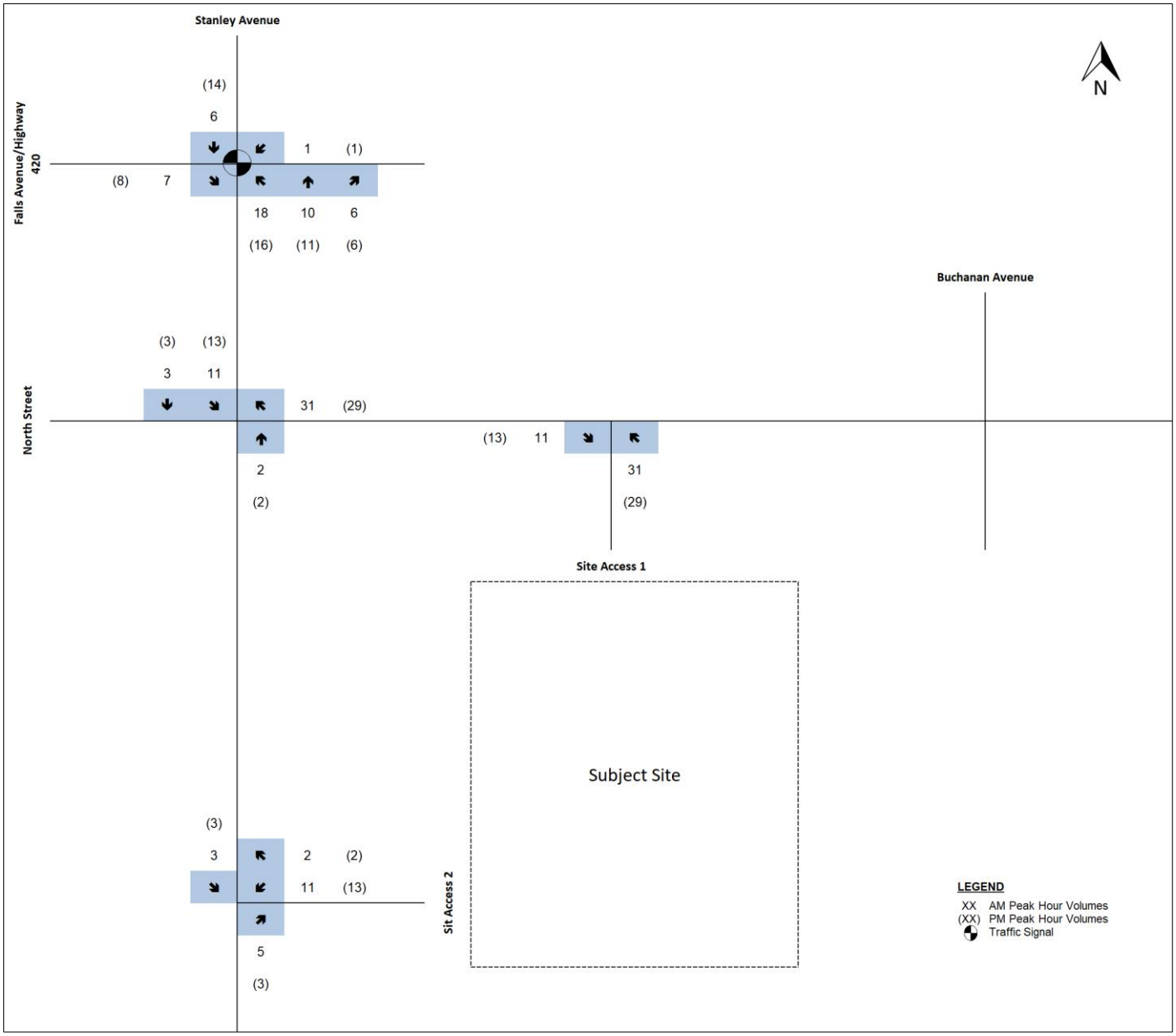

Figure 11 Total Site Trips (Residential and Retail)

6. Future Total Traffic

The future total traffic conditions in the weekday a.m. and p.m. peak hours for the 2025, 2030, and 2035 planning horizon was derived by combining the projected future background traffic with the corresponding estimated site generated traffic. The resulting traffic volumes are presented in **Figure 12** and **Figure 13**, and **Figure 14.**

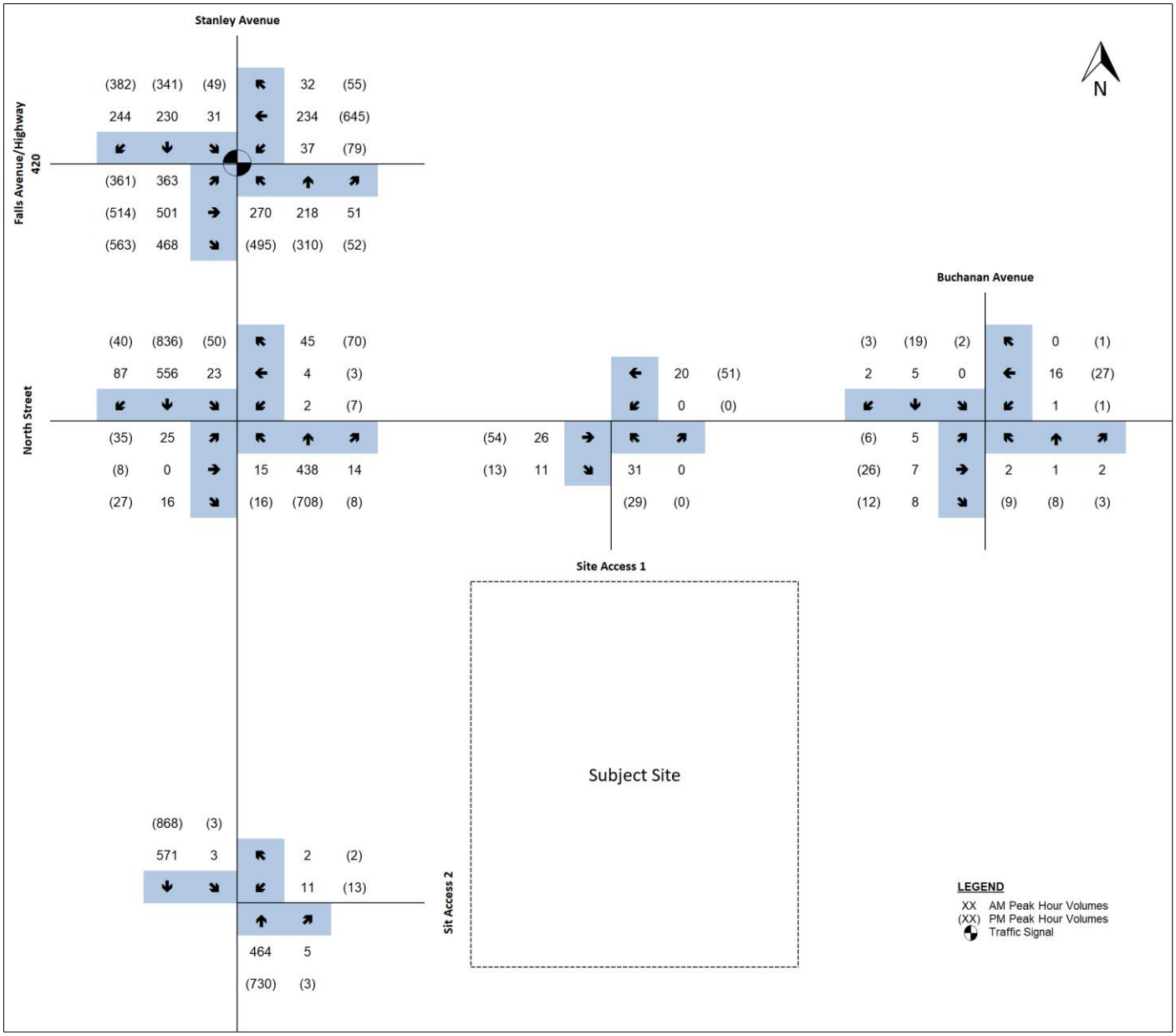

Figure 12 2025 Future Total Traffic Volumes

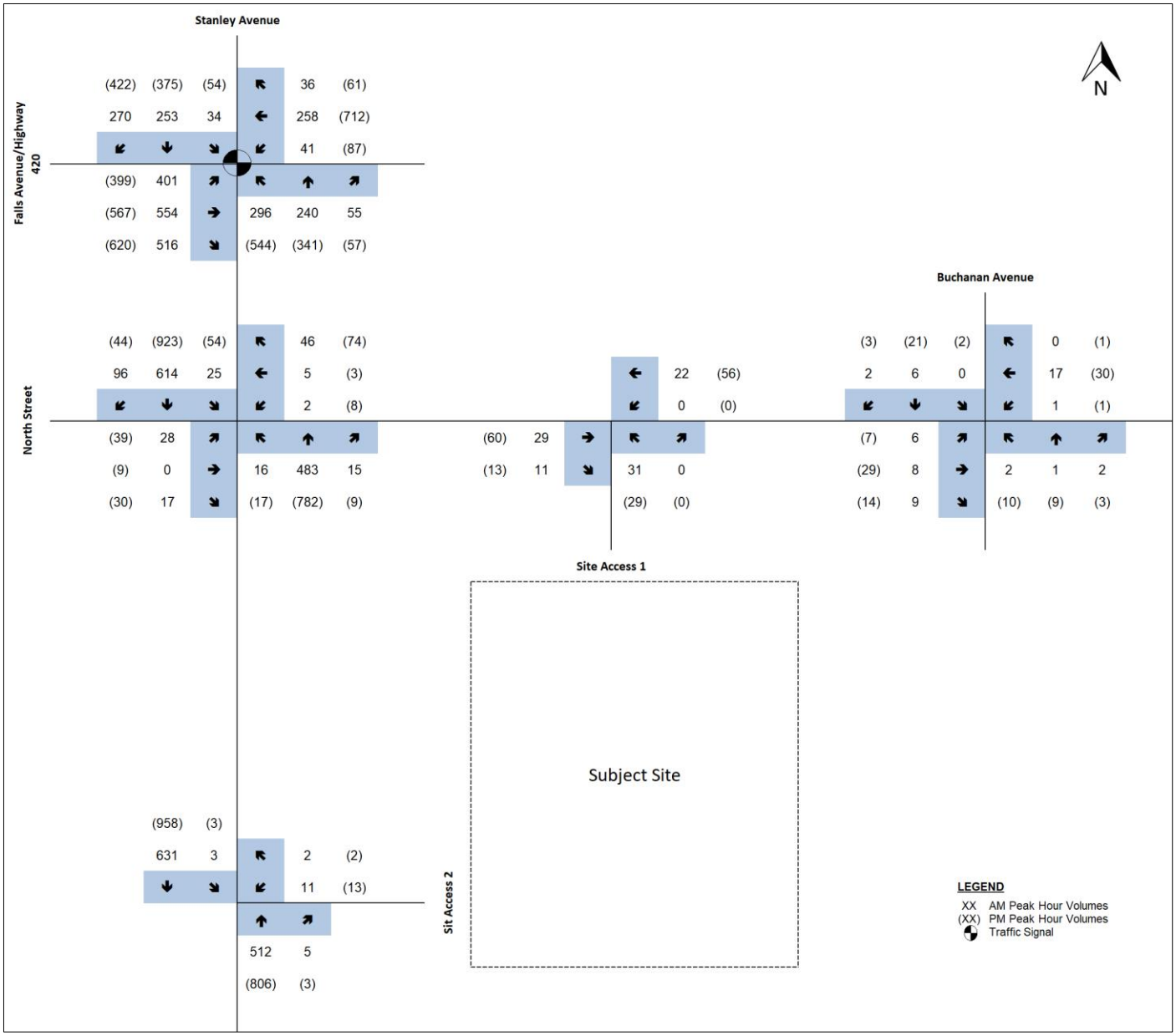

Figure 13 2030 Future Total Traffic Volumes

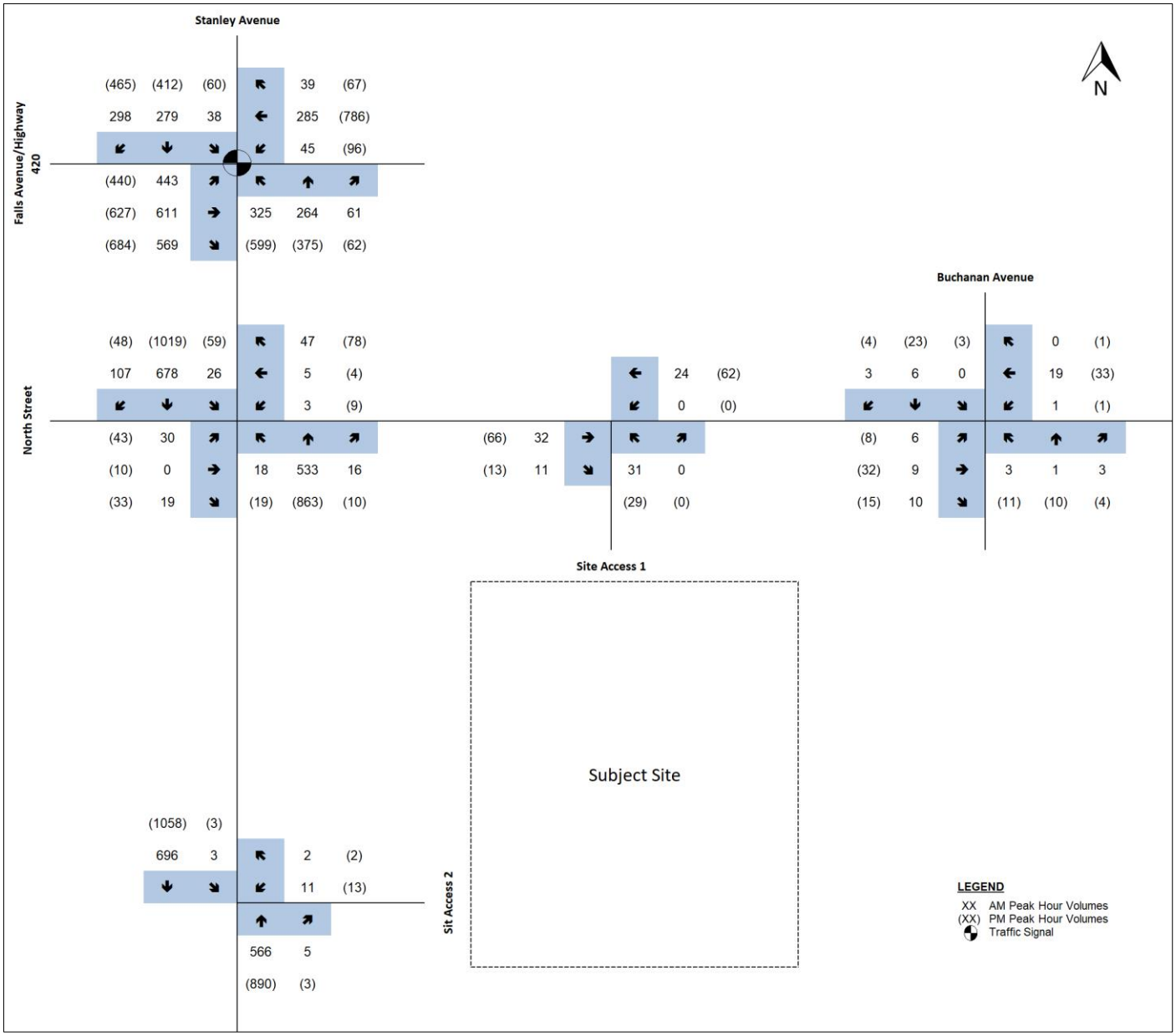

Figure 14 2035 Future Total Traffic Volumes

7. Capacity Analysis

The capacity analysis identifies how well the intersections and driveways are operating. The analysis contained within this report utilized the Highway Capacity Manual (HCM) 2000 procedure within the Synchro Version 11 Software package. The reported intersection volume-to-capacity ratios (v/c) are a measure of the saturation volume for each turning movement, while the levels-of-service (LOS) are a measure of the average delay for each turning movement. Queuing characteristics are reported as the predicted 95th percentile queue for each turning movement. Both pedestrian crossing volumes and heavy vehicle proportions are included in the analyses. The peak hour factors from the counts were used to analyze existing traffic conditions. Existing peak hour factors were also used for future traffic conditions.

The analysis includes identification and required modifications and improvements (if any) at intersections where the addition of background growth or background growth plus site-generated traffic volumes causes the following:

'Critical' intersections and movements for a signalized intersection include:

- V/C ratios for overall intersections operations, through movements, or shared through/turning movements increase to 0.85 or above;
- V/C ratios for exclusive movements increase to 0.95 or above; or
- 95th percentile queue length for individual movements that are projected to, or exceed, the storage length.

'Critical' intersections and movements for an unsignalized intersection include:

- Level of Services (LOS), based on average delay per vehicle, on individual movements exceeds LOS "E"; or
- Queue length for individual movements that exceeds the available queue storage.

For signalized intersections under the jurisdiction of the MTO, movements with v/c ratios greater than 0.85 are deemed to be "critical".

The following tables summarize the HCM capacity results for the study intersections during the weekday a.m. and p.m. peak hours under existing (2023), future background (2025, 2030, and 2035) and future total (2025, 2030, and 2035) traffic conditions. The detailed calculation sheets are provided in **Appendix D**.

7.1 Highway 420/Falls Avenue and Stanley Avenue

Capacity analysis at this intersection during the weekday a.m. and p.m. peak hours for the existing, future background, and future total traffic conditions are summarized in the following table.

Table 4 Capacity analysis of Highway 420/Falls Avenue and Stanley Avenue

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Existing 2023	Overall: 0.49 (C) 28 EBL = 0.7 (D) 40 EBT = 0.25 (B) 17 EBR = 0.32 (B) 19 WBL = 0.41 (D) 44 WBT = 0.23 (C) 24 WBR = 0.02 (C) 22 NBL = 0.55 (D) 35 NBTL = 0.54 (C) 34 NBR = 0.03 (C) 30 SBL = 0.13 (C) 35 SBT = 0.5 (D) 37 SBR = 0.17 (C) 35	 EBL = 55 m EBT = 40 m EBR = 25 m WBL = 20 m WBT = 35 m WBR = 0 m NBL = 55 m NBTL = 45 m NBR = 0 m SBL = 15 m SBT = 35 m SBR = 20 m	Overall: 0.66 (D) 39 EBL = 0.7 (D) 50 EBT = 0.25 (C) 23 EBR = 0.35 (C) 25 WBL = 0.56 (D) 54 WBT = 0.55 (C) 33 WBR = 0.03 (C) 26 NBL = 0.71 (D) 47 NBTL = 0.71 (D) 44 NBR = 0.03 (C) 34 SBL = 0.18 (D) 42 SBT = 0.59 (D) 46 SBR = 0.78 (E) 61	 EBL = 60 m EBT = 45 m EBR = 25 m WBL = 35 m WBT = 90 m WBR = 5 m NBL = 90 m NBTL = 80 m NBR = 5 m SBL = 25 m SBT = 55 m SBR = 90 m
Future Background 2025	Overall: 0.51 (C) 29 EBL = 0.73 (D) 41 EBT = 0.26 (B) 18 EBR = 0.33 (B) 19 WBL = 0.42 (D) 45 WBT = 0.24 (C) 24 WBR = 0.02 (C) 22 NBL = 0.57 (D) 36 NBTL = 0.56 (C) 35 NBR = 0.03 (C) 30 SBL = 0.13 (C) 35 SBT = 0.51 (D) 37	EBL = 55 m EBT = 40 m EBR = 25 m WBL = 20 m WBT = 35 m WBR = 0 m NBL = 55 m NBTL = 50 m NBR = 0 m SBL = 15 m SBT = 35 m SBR = 25 m	Overall: 0.69 (D) 38 EBL = 0.75 (D) 50 EBT = 0.28 (C) 25 EBR = 0.37 (C) 27 WBL = 0.69 (E) 65 WBT = 0.64 (D) 37 WBR = 0.04 (C) 28 NBL = 0.71 (D) 44 NBTL = 0.7 (D) 41 NBR = 0.03 (C) 32 SBL = 0.15 (D) 38 SBT = 0.53 (D) 41	EBL = 60 m EBT = 50 m EBR = 30 m WBL = 40 m WBT = 100 m WBR = 0 m NBL = 95 m NBTL = 85 m NBR = 0 m SBL = 20 m SBT = 50 m SBR = 75 m

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
	SBR = 0.2 (D) 35		SBR = 0.72 (D) 51	
Future Total 2025	Overall: 0.52 (C) 29 EBL = 0.73 (D) 41 EBT = 0.26 (B) 18 EBR = 0.34 (B) 20 WBL = 0.43 (D) 45 WBT = 0.24 (C) 24 WBR = 0.02 (C) 22 NBL = 0.59 (D) 37 NBTL = 0.59 (D) 35 NBR = 0.04 (C) 30 SBL = 0.13 (C) 35 SBT = 0.52 (D) 38 SBR = 0.23 (D) 36	 EBL = 55 m EBT = 40 m EBR = 25 m WBL = 20 m WBT = 35 m WBR = 0 m NBL = 60 m NBTL = 50 m NBR = 5 m SBL = 15 m SBT = 35 m SBR = 25 m	Overall: 0.7 (D) 39 EBL = 0.75 (D) 51 EBT = 0.28 (C) 25 EBR = 0.37 (C) 28 WBL = 0.7 (E) 68 WBT = 0.65 (D) 38 WBR = 0.04 (C) 28 NBL = 0.72 (D) 45 NBTL = 0.72 (D) 42 NBR = 0.04 (C) 32 SBL = 0.15 (D) 38 SBT = 0.54 (D) 42 SBR = 0.72 (D) 51	 EBL = 60 m EBT = 50 m EBR = 30 m WBL = 40 m WBT = 100 m WBR = 0 m NBL = 95 m NBTL = 85 m NBR = 0 m SBL = 20 m SBT = 55 m SBR = 75 m
Future Background 2030	Overall: 0.55 (C) 30 EBL = 0.77 (D) 44 EBT = 0.29 (B) 18 EBR = 0.37 (C) 20 WBL = 0.46 (D) 46 WBT = 0.27 (C) 25 WBR = 0.03 (C) 23 NBL = 0.62 (D) 39 NBTL = 0.61 (D) 36 NBR = 0.04 (C) 31 SBL = 0.14 (D) 35 SBT = 0.54 (D) 38 SBR = 0.33 (D) 37	 EBL = 60 m EBT = 45 m EBR = 25 m WBL = 20 m WBT = 35 m WBR = 0 m NBL = 60 m NBTL = 55 m NBR = 5 m SBL = 15 m SBT = 40 m SBR = 30 m	Overall: 0.78 (D) 44 EBL = 0.81 (E) 57 EBT = 0.33 (C) 29 EBR = 0.48 (C) 33 WBL = 0.64 (E) 61 WBT = 0.76 (D) 44 WBR = 0.04 (C) 31 NBL = 0.78 (D) 51 NBTL = 0.77 (D) 46 NBR = 0.04 (C) 34 SBL = 0.15 (D) 38 SBT = 0.51 (D) 41 SBR = 0.81 (E) 59	 EBL = 75 m EBT = 50 m EBR = 55 m WBL = 45 m WBT = 120 m WBR = 0 m NBL = 105 m NBTL = 95 m NBR = 0 m SBL = 25 m SBT = 55 m SBR = 105 m
Future Total 2030	Overall: 0.56 (C) 31 EBL = 0.77 (D) 44 EBT = 0.29 (B) 19 EBR = 0.37 (C) 21 WBL = 0.47 (D) 47 WBT = 0.27 (C) 26 WBR = 0.03 (C) 23 NBL = 0.64 (D) 39 NBTL = 0.64 (D) 37 NBR = 0.04 (C) 31 SBL = 0.14 (D) 35 SBT = 0.55 (D) 39 SBR = 0.34 (D) 37	 EBL = 60 m EBT = 45 m EBR = 25 m WBL = 20 m WBT = 35 m WBR = 0 m NBL = 65 m NBTL = 55 m NBR = 5 m SBL = 15 m SBT = 40 m SBR = 35 m	Overall: 0.79 (D) 44 EBL = 0.81 (E) 57 EBT = 0.33 (C) 29 EBR = 0.51 (C) 34 WBL = 0.65 (E) 62 WBT = 0.77 (D) 45 WBR = 0.04 (C) 31 NBL = 0.79 (D) 52 NBTL = 0.79 (D) 46 NBR = 0.04 (C) 34 SBL = 0.15 (D) 38 SBT = 0.53 (D) 42 SBR = 0.81 (E) 59	 EBL = 75 m EBT = 50 m EBR = 60 m WBL = 45 m WBT = 120 m WBR = 0 m NBL = 115 m NBTL = 100 m NBR = 0 m SBL = 25 m SBT = 60 m SBR = 105 m
Future Background 2035	Overall: 0.6 (C) 32 EBL = 0.84 (D) 48 EBT = 0.32 (B) 20 EBR = 0.41 (C) 22 WBL = 0.49 (D) 48 WBT = 0.31 (C) 27 WBR = 0.03 (C) 24 NBL = 0.67 (D) 42 NBTL = 0.66 (D) 38 NBR = 0.04 (C) 31	 EBL = 75 m EBT = 50 m EBR = 30 m WBL = 20 m WBT = 40 m WBR = 0 m NBL = 70 m NBTL = 60 m NBR = 5 m	Overall: 0.78 (D) 44 EBL = 0.8 (E) 56 EBT = 0.31 (C) 27 EBR = 0.47 (C) 31 WBL = 0.77 (E) 80 WBT = 0.74 (D) 43 WBR = 0.04 (C) 31 NBL = 0.78 (D) 52 NBTL = 0.77 (D) 46 NBR = 0.04 (C) 34	 EBL = 70 m EBT = 50 m EBR = 50 m WBL = 45 m WBT = 115 m WBR = 0 m NBL = 105 m NBTL = 95 m NBR = 0 m

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
	SBL = 0.15 (D) 36 SBT = 0.57 (D) 39 SBR = 0.45 (D) 39	SBL = 20 m SBT = 45 m SBR = 40 m	SBL = 0.15 (D) 39 SBT = 0.53 (D) 42 SBR = 0.82 (E) 60	SBL = 25 m SBT = 55 m SBR = 105 m
Future Total 2035	Overall: 0.61 (C) 33 EBL = 0.84 (D) 49 EBT = 0.32 (B) 20 EBR = 0.41 (C) 22 WBL = 0.51 (D) 48 WBT = 0.31 (C) 28 WBR = 0.03 (C) 25 NBL = 0.69 (D) 43 NBTL = 0.69 (D) 39 NBR = 0.05 (C) 32 SBL = 0.15 (D) 36 SBT = 0.58 (D) 40 SBR = 0.48 (D) 39	 EBL = 75 m EBT = 50 m EBR = 30 m WBL = 20 m WBT = 40 m WBR = 0 m NBL = 70 m NBTL = 60 m NBR = 5 m SBL = 20 m SBT = 45 m SBR = 45 m	Overall: **0.89** (D) 52 EBL = **0.88** (E) 65 EBT = 0.38 (C) 32 EBR = 0.65 (D) 41 WBL = 0.71 (E) 69 WBT = **0.9** (E) 57 WBR = 0.04 (C) 34 NBL = 0.84 (E) 59 NBTL = 0.84 (D) 51 NBR = 0.04 (C) 35 SBL = 0.16 (D) 38 SBT = 0.55 (D) 43 SBR = **0.92** (E) 77	 EBL = 85 m EBT = 55 m EBR = 90 m WBL = 50 m WBT = 140 m WBR = 0 m NBL = 135 m NBTL = 110 m NBR = 0 m SBL = 25 m SBT = 65 m SBR = 130 m

Under existing traffic conditions, the intersection is operating with an overall v/c ratio of 0.49 LOS C during the a.m. peak hour and 0.66 LOS D during the p.m. peak hour and with no critical movements.

With the addition of corridor growth for the 2025 future background traffic scenario, the overall reported v/c of the intersection is expected to increase to 0.51 LOS C during the a.m. peak hour and 0.69 LOS D during the p.m. peak hour. Signal timings were optimized during the p.m. peak hour to improve capacity and reduce delays where possible.

Under the 2025 future total traffic scenario, with the addition of site generated traffic, the intersection continues to operate at a satisfactory level with the overall v/c ratio of the intersection during the a.m. peak hour increasing to 0.52 LOS C during the a.m. peak hour and 0.70 LOS D during the p.m. peak hour.

With continued corridor growth under the 2030 future background horizon period, the overall reported v/c of the intersection is reported at 0.55 LOS C during the a.m. peak hour and 0.78 LOS D during the p.m. peak hour.

With the addition of site generated traffic, the 2030 future total traffic condition continue to report intersection operations at a satisfactory level with the overall v/c ratio increasing from 0.55 to 0.56 LOS C during the a.m. peak hour and from 0.78 to 0.79 LOS D during the p.m. peak hour. The overall intersection continues to operate without any critical movements.

With continued corridor growth during the 2035 future background horizon period, the overall reported v/c of the intersection is reported at 0.60 LOS C during the a.m. peak hour and 0.78 LOS D during the p.m. peak hour.

With the addition of site generated traffic, the intersection continues to operate at a satisfactory level with the overall v/c ratio increasing to 0.61 LOS C during the a.m. peak hour and 0.89 LOS D during the p.m. peak hour. The overall intersection is reported at a critical level during the p.m. peak hour along with the eastbound left-turn, westbound through, and southbound right-turn movements, however they all remain below the theoretical capacity of 1.00.

No improvements have been recommended to accommodate the subject site.

7.2 Stanley Avenue and North Street

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the existing, future background, and future total traffic conditions are summarized in the following table.

Table 5 Capacity analysis of Stanley Avenue and North Street

Scenario	Am Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Existing 2023	EBTLR = 0.11 (B) 15 WBTLR = 0.04 (B) 12 NBL = 0.02 (A) 9 NBT = 0.18 (A) 0 NBTR = 0.1 (A) 0 SBL = 0.01 (A) 9 SBT = 0.23 (A) 0 SBTR = 0.17 (A) 0	EBTLR = 5 m WBTLR = 5 m NBL = 5 m NBT = 0 m NBTR = 0 m SBL = 5 m SBT = 0 m SBTR = 0 m	EBTLR = 0.23 (C) 19 WBTLR = 0.11 (B) 14 NBL = 0.02 (A) 10 NBT = 0.28 (A) 0 NBTR = 0.15 (A) 0 SBL = 0.05 (A) 10 SBT = 0.33 (A) 0 SBTR = 0.19 (A) 0	EBTLR = 10 m WBTLR = 5 m NBL = 5 m NBT = 0 m NBTR = 0 m SBL = 5 m SBT = 0 m SBTR = 0 m
Future Background 2025	EBTLR = 0.11 (C) 15 WBTLR = 0.04 (B) 12 NBL = 0.02 (A) 9 NBT = 0.19 (A) 0 NBTR = 0.1 (A) 0 SBL = 0.01 (A) 9 SBT = 0.24 (A) 0 SBTR = 0.18 (A) 0	EBTLR = 5 m WBTLR = 5 m NBL = 5 m NBT = 0 m NBTR = 0 m SBL = 5 m SBT = 0 m SBTR = 0 m	EBTLR = 0.24 (C) 20 WBTLR = 0.11 (B) 14 NBL = 0.02 (A) 10 NBT = 0.29 (A) 0 NBTR = 0.15 (A) 0 SBL = 0.05 (A) 10 SBT = 0.35 (A) 0 SBTR = 0.2 (A) 0	EBTLR = 10 m WBTLR = 5 m NBL = 5 m NBT = 0 m NBTR = 0 m SBL = 5 m SBT = 0 m SBTR = 0 m
Future Total 2025	EBTLR = 0.12 (C) 16 WBTLR = 0.09 (B) 11 NBL = 0.02 (A) 9 NBT = 0.19 (A) 0 NBTR = 0.11 (A) 0 SBL = 0.03 (A) 9 SBT = 0.25 (A) 0 SBTR = 0.18 (A) 0	EBTLR = 5 m WBTLR = 5 m NBL = 5 m NBT = 0 m NBTR = 0 m SBL = 5 m SBT = 0 m SBTR = 0 m	EBTLR = 0.26 (C) 22 WBTLR = 0.17 (B) 14 NBL = 0.02 (A) 10 NBT = 0.3 (A) 0 NBTR = 0.15 (A) 0 SBL = 0.07 (A) 10 SBT = 0.35 (A) 0 SBTR = 0.2 (A) 0	EBTLR = 10 m WBTLR = 5 m NBL = 5 m NBT = 0 m NBTR = 0 m SBL = 5 m SBT = 0 m SBTR = 0 m
Future Background 2030	EBTLR = 0.13 (C) 16 WBTLR = 0.04 (B) 12 NBL = 0.02 (A) 10 NBT = 0.21 (A) 0 NBTR = 0.12 (A) 0 SBL = 0.02 (A) 9 SBT = 0.27 (A) 0 SBTR = 0.2 (A) 0	EBTLR = 5 m WBTLR = 5 m NBL = 5 m NBT = 0 m NBTR = 0 m SBL = 5 m SBT = 0 m SBTR = 0 m	EBTLR = 0.3 (C) 24 WBTLR = 0.14 (C) 15 NBL = 0.03 (A) 10 NBT = 0.33 (A) 0 NBTR = 0.17 (A) 0 SBL = 0.06 (A) 10 SBT = 0.38 (A) 0 SBTR = 0.22 (A) 0	EBTLR = 10 m WBTLR = 5 m NBL = 5 m NBT = 0 m NBTR = 0 m SBL = 5 m SBT = 0 m SBTR = 0 m
Future Total 2030	EBTLR = 0.14 (C) 17 WBTLR = 0.09 (B) 12 NBL = 0.02 (A) 10 NBT = 0.21 (A) 0 NBTR = 0.12 (A) 0 SBL = 0.03 (A) 9 SBT = 0.27 (A) 0 SBTR = 0.2 (A) 0	EBTLR = 5 m WBTLR = 5 m NBL = 5 m NBT = 0 m NBTR = 0 m SBL = 5 m SBT = 0 m SBTR = 0 m	EBTLR = 0.32 (D) 26 WBTLR = 0.2 (B) 15 NBL = 0.03 (A) 10 NBT = 0.33 (A) 0 NBTR = 0.17 (A) 0 SBL = 0.08 (A) 10 SBT = 0.39 (A) 0 SBTR = 0.22 (A) 0	EBTLR = 10 m WBTLR = 5 m NBL = 5 m NBT = 0 m NBTR = 0 m SBL = 5 m SBT = 0 m SBTR = 0 m
Future Background 2035	EBTLR = 0.16 (C) 18 WBTLR = 0.06 (B) 13 NBL = 0.03 (A) 10 NBT = 0.23 (A) 0 NBTR = 0.13 (A) 0 SBL = 0.02 (A) 9 SBT = 0.3 (A) 0 SBTR = 0.22 (A) 0	EBTLR = 5 m WBTLR = 5 m NBL = 5 m NBT = 0 m NBTR = 0 m SBL = 5 m SBT = 0 m SBTR = 0 m	EBTLR = 0.3 (C) 24 WBTLR = 0.14 (C) 15 NBL = 0.03 (A) 10 NBT = 0.33 (A) 0 NBTR = 0.17 (A) 0 SBL = 0.06 (A) 10 SBT = 0.38 (A) 0 SBTR = 0.22 (A) 0	EBTLR = 10 m WBTLR = 5 m NBL = 5 m NBT = 0 m NBTR = 0 m SBL = 5 m SBT = 0 m SBTR = 0 m

Scenario	Am Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2035	EBTLR = 0.17 (C) 19 WBTLR = 0.11 (B) 12 NBL = 0.03 (A) 10 NBT = 0.23 (A) 0 NBTR = 0.13 (A) 0 SBL = 0.03 (A) 9 SBT = 0.3 (A) 0 SBTR = 0.22 (A) 0	EBTLR = 5 m WBTLR = 5 m NBL = 5 m NBT = 0 m NBTR = 0 m SBL = 5 m SBT = 0 m SBTR = 0 m	EBTLR = 0.42 (D) 33 WBTLR = 0.23 (C) 16 NBL = 0.03 (A) 11 NBT = 0.36 (A) 0 NBTR = 0.19 (A) 0 SBL = 0.09 (A) 11 SBT = 0.42 (A) 0 SBTR = 0.24 (A) 0	EBTLR = 15 m WBTLR = 10 m NBL = 5 m NBT = 0 m NBTR = 0 m SBL = 5 m SBT = 0 m SBTR = 0 m

Under existing traffic conditions, the intersection is operating at a satisfactory level with the greatest delay occurring in the eastbound approach (15 seconds during the a.m. peak hour and 19 seconds during the p.m. peak hour).

With the addition of corridor growth for the 2025 future background traffic scenario, the intersection continues to operate at a satisfactory level with only an increase of one second to the delay in the eastbound approach during the p.m. peak hour.

Under the 2025 future total traffic scenario, with the addition of site generated traffic, the intersection continues to operate at a satisfactory level with only an increase of one second to the delay in the eastbound approach during the a.m. peak hour and a two second increase during the p.m. peak hour.

With continued corridor growth and site traffic under the 2030 and 2035 future background and future total conditions respectively, the intersection is expected to continue to operate at a satisfactory level with the delay in the eastbound approach increasing to 19 seconds during the a.m. peak hour and 33 seconds during the p.m. peak hour under the 2035 horizon year which remain below critical levels.

No improvements have been recommended to accommodate the subject site.

7.3 North Street and Buchanan Avenue

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the existing, future background, and future total traffic conditions are summarized in the following table.

Table 6 Capacity analysis of North Street and Buchanan Avenue

Scenario	Am Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Existing 2023	EBTLR = 0 (A) 2 WBTLR = 0 (A) 0 NBTLR = 0.01 (A) 9 SBTLR = 0.01 (A) 9	EBTLR = 5 m WBTLR = 0 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.01 (A) 1 WBTLR = 0 (A) 0 NBTLR = 0.03 (A) 10 SBTLR = 0.04 (A) 10	EBTLR = 5 m WBTLR = 0 m NBTLR = 5 m SBTLR = 5 m
Future Background 2025	EBTLR = 0 (A) 2 WBTLR = 0 (A) 0 NBTLR = 0.01 (A) 9 SBTLR = 0.01 (A) 9	EBTLR = 5 m WBTLR = 0 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.01 (A) 1 WBTLR = 0 (A) 0 NBTLR = 0.03 (A) 10 SBTLR = 0.04 (A) 10	EBTLR = 5 m WBTLR = 0 m NBTLR = 5 m SBTLR = 5 m
Future Total 2025	EBTLR = 0 (A) 2 WBTLR = 0 (A) 0 NBTLR = 0.01 (A) 9 SBTLR = 0.01 (A) 9	EBTLR = 5 m WBTLR = 0 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.01 (A) 1 WBTLR = 0 (A) 0 NBTLR = 0.03 (A) 10 SBTLR = 0.04 (A) 10	EBTLR = 5 m WBTLR = 0 m NBTLR = 5 m SBTLR = 5 m
Future Background 2030	EBTLR = 0 (A) 2 WBTLR = 0 (A) 0 NBTLR = 0.01 (A) 9 SBTLR = 0.01 (A) 9	EBTLR = 5 m WBTLR = 0 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.01 (A) 1 WBTLR = 0 (A) 0 NBTLR = 0.04 (A) 10 SBTLR = 0.04 (A) 10	EBTLR = 5 m WBTLR = 0 m NBTLR = 5 m SBTLR = 5 m

Scenario	Am Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2030	EBTLR = 0 (A) 2 WBTLR = 0 (A) 0 NBTLR = 0.01 (A) 9 SBTLR = 0.01 (A) 9	EBTLR = 5 m WBTLR = 0 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.01 (A) 1 WBTLR = 0 (A) 0 NBTLR = 0.04 (A) 10 SBTLR = 0.04 (A) 10	EBTLR = 5 m WBTLR = 0 m NBTLR = 5 m SBTLR = 5 m
Future Background 2035	EBTLR = 0.01 (A) 2 WBTLR = 0 (A) 0 NBTLR = 0.01 (A) 9 SBTLR = 0.01 (A) 10	EBTLR = 5 m WBTLR = 0 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.01 (A) 1 WBTLR = 0 (A) 0 NBTLR = 0.04 (A) 10 SBTLR = 0.04 (A) 10	EBTLR = 5 m WBTLR = 0 m NBTLR = 5 m SBTLR = 5 m
Future Total 2035	EBTLR = 0.01 (A) 2 WBTLR = 0 (A) 0 NBTLR = 0.01 (A) 9 SBTLR = 0.01 (A) 10	EBTLR = 5 m WBTLR = 0 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.01 (A) 1 WBTLR = 0 (A) 0 NBTLR = 0.04 (A) 10 SBTLR = 0.05 (A) 10	EBTLR = 5 m WBTLR = 0 m NBTLR = 5 m SBTLR = 5 m

Under existing conditions and the future background & total conditions, the intersection of North Street and Buchanan operates at a satisfactory level and is anticipated to continue to operate at a satisfactory level under all three future horizon years.

No improvements have been recommended to accommodate the subject site.

7.4 North Street and Site Access 1

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the future total traffic conditions are summarized in the following table.

Table 7 Capacity analysis of North Street and Site Access 1

Scenario	Am Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2025	EBTR = 0.02 (A) 0 WBTL = 0 (A) 0 NBLR = 0.04 (A) 9	EBTR = 0 m WBTL = 0 m NBLR = 5 m	EBTR = 0.04 (A) 0 WBTL = 0 (A) 0 NBLR = 0.04 (A) 9	EBTR = 0 m WBTL = 0 m NBLR = 5 m
Future Total 2030	EBTR = 0.02 (A) 0 WBTL = 0 (A) 0 NBLR = 0.04 (A) 9	EBTR = 0 m WBTL = 0 m NBLR = 5 m	EBTR = 0.05 (A) 0 WBTL = 0 (A) 0 NBLR = 0.04 (A) 9	EBTR = 0 m WBTL = 0 m NBLR = 5 m
Future Total 2035	EBTR = 0.03 (A) 0 WBTL = 0 (A) 0 NBLR = 0.04 (A) 9	EBTR = 0 m WBTL = 0 m NBLR = 5 m	EBTR = 0.05 (A) 0 WBTL = 0 (A) 0 NBLR = 0.04 (A) 9	EBTR = 0 m WBTL = 0 m NBLR = 5 m

Under all future traffic conditions, the proposed site access onto North Street is expected to operate satisfactorily with a maximum delay of 9 seconds reported for the outbound movement from the site access during both peak hours.

7.5 Stanley Avenue and Site Access 2

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the future total traffic conditions are summarized in the following table.

Table 8 Capacity analysis of Stanley Avenue and Site Access 2

Scenario	Am Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2025	WBLR = 0.03 (B) 12 NBT = 0.2 (A) 0 NBTR = 0.1 (A) 0 SBL = 0 (A) 8 SBT = 0.18 (A) 0 SBT = 0.18 (A) 0	WBLR = 5 m NBT = 0 m NBTR = 0 m SBL = 5 m SBT = 0 m SBT = 0 m	WBLR = 0.04 (B) 15 NBT = 0.31 (A) 0 NBTR = 0.16 (A) 0 SBL = 0 (A) 9 SBT = 0.28 (A) 0 SBT = 0.28 (A) 0	WBLR = 5 m NBT = 0 m NBTR = 0 m SBL = 5 m SBT = 0 m SBT = 0 m
Future Total 2030	WBLR = 0.03 (B) 12 NBT = 0.22 (A) 0 NBTR = 0.11 (A) 0 SBL = 0 (A) 9 SBT = 0.2 (A) 0 SBT = 0.2 (A) 0	WBLR = 0 m NBT = 0 m NBTR = 0 m SBL = 0 m SBT = 0 m SBT = 0 m	WBLR = 0.04 (A) 16 NBT = 0.34 (A) 0 NBTR = 0.17 (A) 10 SBL = 0 (A) 0 SBT = 0.31 (A) 0 SBT = 0.31 (A) 0	WBLR = 0 m NBT = 0 m NBTR = 0 m SBL = 0 m SBT = 0 m SBT = 0 m
Future Total 2035	WBLR = 0.03 (B) 13 NBT = 0.24 (A) 0 NBTR = 0.12 (A) 0 SBL = 0 (A) 9 SBT = 0.22 (A) 0 SBT = 0.22 (A) 0	WBLR = 5 m NBT = 0 m NBTR = 0 m SBL = 5 m SBT = 0 m SBT = 0 m	WBLR = 0.05 (C) 17 NBT = 0.38 (A) 0 NBTR = 0.19 (A) 0 SBL = 0 (A) 10 SBT = 0.34 (A) 0 SBT = 0.34 (A) 0	WBLR = 5 m NBT = 0 m NBTR = 0 m SBL = 5 m SBT = 0 m SBT = 0 m

Under all future traffic conditions, the proposed access onto Stanley Avenue is reported to operate satisfactorily with a maximum delay of 17 seconds observed at the site access during the p.m. peak hour.

8. Summertime Volume Sensitivity Analysis

MTO staff requested GHD adjust the volumes to reflect summer conditions as traffic volumes fluctuate in the City of Niagara Falls due to the large number of visitors during the summer months. GHD reviewed AADT and SADT (summer average daily traffic) data along the regional study roads to estimate the growth related to the increase in tourist traffic. The data, available on the Niagara Regin's Open Data Portal, is summarized in the table below and was captured in 2018.

Table 9 Site Traffic Distribution - Residential

Road	AADT (2018)	SADT (2018)	Growth
Stanley Avenue (From Morrison Street to Highway 420/Falls Avenue)	16,300	17,100	5%
Stanley Avenue (From Highway 420/Falls Avenue to Ferry Street)	20,500	25,300	23%
Highway 420/Falls Avenue (From Stanley Avenue to Victoria Avenue)	8,500	10,200	20%

GHD completed an assessment of the future 2035 planning horizon by applying the respective growth factor to estimate the 2035 summertime volumes. These volumes are shown in **Figure 15** for the 2035 future background scenario and **Figure 16** for the 2035 future total scenario.

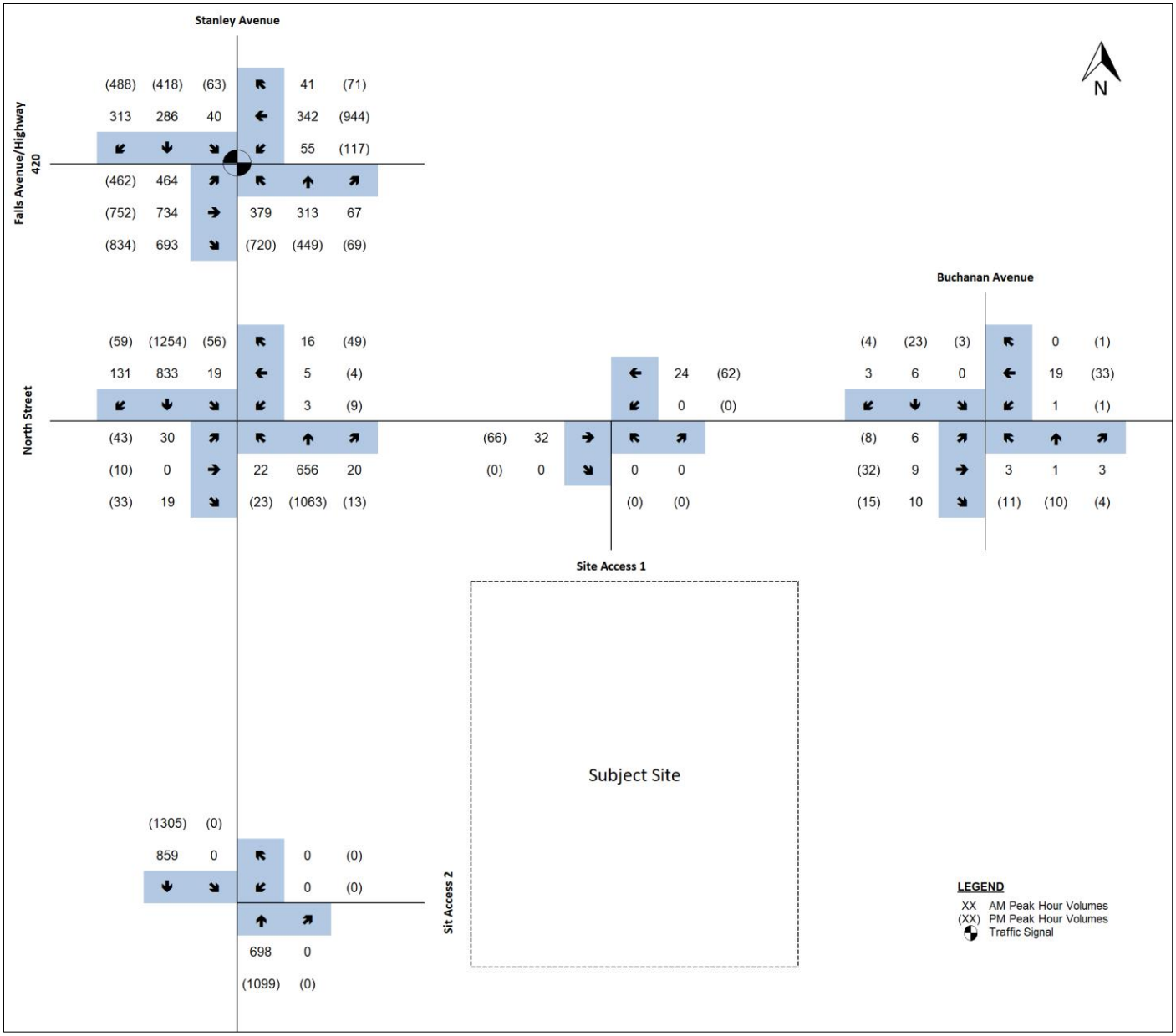

Figure 15 2035 Future Total Background Traffic Volumes – Summertime Adjusted

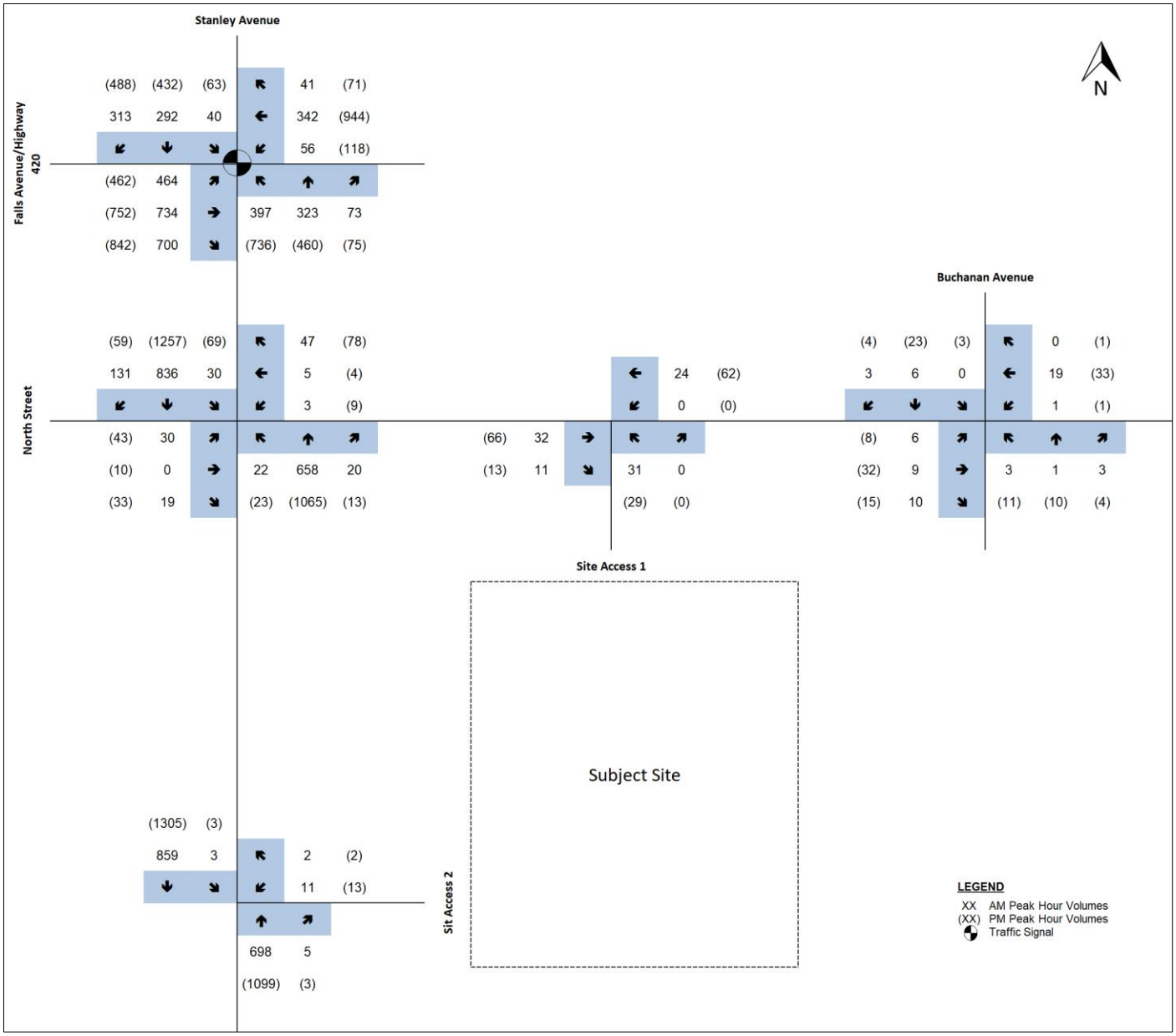

Figure 16 2035 Future Total Traffic Volumes - Summertime Adjusted

8.1 Highway 420/Falls Avenue and Stanley Avenue – Summertime Adjustment

Capacity analysis at this intersection during the weekday a.m. and p.m. peak hours for the future background and future total traffic conditions are summarized in the following table.

Table 10 Capacity analysis of Highway 420/Falls Avenue and Stanley Avenue – Summer Adjustment

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total Background	Overall: 0.72 (C) 34 EBL = 0.76 (D) 41	EBL = 65 m	Overall: **1.02** (E) 74 EBL = **0.99** (F) 95	EBL = 100 m

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
2035 (Summer)	EBT = 0.42 (C) 22 EBR = 0.68 (C) 31 WBL = 0.67 (E) 63 WBT = 0.47 (C) 33 WBR = 0.03 (C) 28 NBL = 0.73 (D) 42 NBTL = 0.73 (D) 38 NBR = 0.05 (C) 29 SBL = 0.15 (C) 35 SBT = 0.58 (D) 38 SBR = 0.52 (D) 39	EBT = 60 m EBR = 95 m WBL = 30 m WBT = 55 m WBR = 0 m NBL = 85 m NBTL = 70 m NBR = 0 m SBL = 20 m SBT = 45 m SBR = 45 m	EBT = 0.45 (D) 35 EBR = **0.96** (E) 73 WBL = **0.92** (F) 116 WBT = **1.02** (F) 82 WBR = 0.05 (D) 36 NBL = **0.98** (F) 87 NBTL = **0.97** (E) 73 NBR = 0.05 (D) 37 SBL = 0.16 (D) 42 SBT = 0.56 (D) 47 SBR = **1.08** (F) 124	EBT = 70 m EBR = 200 m WBL = 70 m WBT = 180 m WBR = 5 m NBL = 180 m NBTL = 155 m NBR = 5 m SBL = 25 m SBT = 70 m SBR = 165 m
Future Total 2035 (Summer)	Overall: 0.73 (C) 34 EBL = 0.76 (D) 41 EBT = 0.42 (C) 22 EBR = 0.69 (C) 32 WBL = 0.69 (E) 64 WBT = 0.47 (C) 34 WBR = 0.03 (C) 28 NBL = 0.75 (D) 44 NBTL = 0.75 (D) 39 NBR = 0.06 (C) 29 SBL = 0.15 (C) 35 SBT = 0.59 (D) 39 SBR = 0.54 (D) 39	EBL = 65 m EBT = 60 m EBR = 115 m WBL = 30 m WBT = 55 m WBR = 0 m NBL = 90 m NBTL = 75 m NBR = 0 m SBL = 20 m SBT = 45 m SBR = 50 m	Overall: **1.03** (E) 76 EBL = **0.99** (F) 95 EBT = 0.45 (D) 35 EBR = **0.98** (E) 77 WBL = **0.93** (F) 118 WBT = **1.02** (F) 82 WBR = 0.05 (D) 36 NBL = **1.00** (F) 93 NBTL = **1.00** (E) 79 NBR = 0.05 (D) 37 SBL = 0.16 (D) 42 SBT = 0.58 (D) 47 SBR = **1.08** (F) 124	EBL = 100 m EBT = 70 m EBR = 205 m WBL = 70 m WBT = 180 m WBR = 5 m NBL = 185 m NBTL = 160 m NBR = 5 m SBL = 25 m SBT = 75 m SBR = 165 m

Adjusting for traffic volumes under the 2035 future background horizon period, the overall reported v/c of the intersection is reported at 0.72 LOS C during the a.m. peak hour and 1.02 LOS E during the p.m. peak hour. During the p.m. peak hour, aside from the overall intersection, the eastbound left is critical at 0.99 LOS F, eastbound right at 0.96 LOS E, westbound through at 1.02 LOS F, northbound left at 0.98 LOS F, northbound through/left at 0.97 LOS E and southbound right turn at 1.08 LOS F are also critical or over capacity.

Under the 2035 future total traffic condition, with the addition of site generated traffic, the intersection continues to operate at a satisfactory level with the overall v/c ratio increasing to 0.73 LOS C during the a.m. peak hour while the intersection is reported to be over capacity with a v/c ratio of 1.03 LOS E during the p.m. peak hour.

During the p.m. peak hour, the site generated traffic has a marginal impact on the operation of the intersection with the overall v/c increasing by a v/c ratio of 0.01 and a 2 second increase to the delay. Overall, the subject site trips are reported to increase the delays for the northbound left turn by 6 seconds, the northbound through/left by 5 seconds, the eastbound right turn by 4 seconds and the westbound left turn by 2 seconds. The delay for the northbound right and southbound through movements remain unchanged.

8.2 Stanley Avenue and North Street – Summertime Adjustment

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the existing, future background, and future total traffic conditions are summarized in the following table.

Table 11 Capacity analysis of Stanley Avenue and North Street – Summer Adjustment

Scenario	Am Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Background 2035 (Summer)	EBTLR = 0.21 (C) 22 WBTLR = 0.07 (B) 15 NBL = 0.04 (A) 11 NBT = 0.29 (A) 0 NBTR = 0.16 (A) 0 SBL = 0.03 (A) 10 SBT = 0.37 (A) 0 SBTR = 0.27 (A) 0	EBTLR = 5 m WBTLR = 5 m NBL = 5 m NBT = 0 m NBTR = 0 m SBL = 5 m SBT = 0 m SBTR = 0 m	EBTLR = 0.58 (F) 56 WBTLR = 0.21 (C) 20 NBL = 0.05 (A) 12 NBT = 0.44 (A) 0 NBTR = 0.23 (A) 0 SBL = 0.11 (A) 12 SBT = 0.52 (A) 0 SBTR = 0.3 (A) 0	EBTLR = 25 m WBTLR = 10 m NBL = 5 m NBT = 0 m NBTR = 0 m SBL = 5 m SBT = 0 m SBTR = 0 m
Future Total 2035 (Summer)	EBTLR = 0.22 (C) 24 WBTLR = 0.13 (B) 14 NBL = 0.04 (A) 11 NBT = 0.29 (A) 0 NBTR = 0.16 (A) 0 SBL = 0.04 (A) 10 SBT = 0.37 (A) 0 SBTR = 0.27 (A) 0	EBTLR = 10 m WBTLR = 5 m NBL = 5 m NBT = 0 m NBTR = 0 m SBL = 5 m SBT = 0 m SBTR = 0 m	EBTLR = 0.63 (F) 65 WBTLR = 0.29 (C) 20 NBL = 0.05 (A) 12 NBT = 0.44 (A) 0 NBTR = 0.23 (A) 0 SBL = 0.13 (A) 12 SBT = 0.52 (A) 0 SBTR = 0.3 (A) 0	EBTLR = 25 m WBTLR = 10 m NBL = 5 m NBT = 0 m NBTR = 0 m SBL = 5 m SBT = 0 m SBTR = 0 m

With the addition of corridor growth and summertime adjustment growth for the 2035 future background traffic scenario, the intersection continues to operate at a satisfactory level with the eastbound approach operating with a 22 second delay during the a.m. peak hour and 56 second delay during the p.m. peak hour.

Under the 2035 future total traffic scenario, with the addition of site generated traffic, the intersection continues to operate at a satisfactory level with an increase of only two seconds to the delay in the eastbound approach during the a.m. peak hour and a 9 second increase during the p.m. peak hour.

8.3 North Street and Buchanan Avenue – Summertime Adjustment

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the future background and future total traffic conditions are summarized in the following table.

Table 12 Capacity analysis of North Street and Buchanan Avenue – Summer Adjustment

Scenario	Am Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Background 2035 (Summer)	EBTLR = 0.01 (A) 2 WBTLR = 0 (A) 0 NBTLR = 0.01 (A) 9 SBTLR = 0.01 (A) 10	EBTLR = 5 m WBTLR = 0 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.01 (A) 1 WBTLR = 0 (A) 0 NBTLR = 0.04 (A) 10 SBTLR = 0.05 (A) 10	EBTLR = 5 m WBTLR = 0 m NBTLR = 5 m SBTLR = 5 m
Future Total 2035 (Summer)	EBTLR = 0.01 (A) 2 WBTLR = 0 (A) 0 NBTLR = 0.01 (A) 9 SBTLR = 0.01 (A) 10	EBTLR = 5 m WBTLR = 0 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.01 (A) 1 WBTLR = 0 (A) 0 NBTLR = 0.04 (A) 10 SBTLR = 0.05 (A) 10	EBTLR = 5 m WBTLR = 0 m NBTLR = 5 m SBTLR = 5 m

With the addition of corridor growth and summertime adjustment growth for the 2035 future background traffic scenario, the intersection continues to operate at a satisfactory level with the southbound approach operating with a 10 second delay during the a.m. and p.m. peak hours.

Under the 2035 future total traffic scenario, with the addition of site generated traffic, the intersection continues to operate at a satisfactory level with no increase to the delays during both peak hours.

8.4 North Street and Site Access 1 – Summertime Adjustment

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the future total traffic conditions are summarized in the following table.

Table 13 Capacity analysis of North Street and Site Access 1 – Summer Adjustment

Scenario	Am Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2035 (Summer)	EBTR = 0.03 (A) 0 WBTL = 0 (A) 0 NBLR = 0.04 (A) 9	EBTR = 0 m WBTL = 0 m NBLR = 5 m	EBTR = 0.05 (A) 0 WBTL = 0 (A) 0 NBLR = 0.04 (A) 9	EBTR = 0 m WBTL = 0 m NBLR = 5 m

Under the 2035 future traffic conditions with the summertime adjustment, the proposed site access onto North Street is expected to operate satisfactorily with a maximum delay of 9 seconds reported for the outbound movement from the site access during both peak hours.

8.5 Stanley Avenue and Site Access 2 – Summertime Adjustment

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the future total traffic conditions are summarized in the following table.

Table 14 Capacity analysis of Stanley Avenue and Site Access 2 – Summer Adjustment

Scenario	Am Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2035 (Summer)	WBLR = 0.04 (B) 15 NBT = 0.3 (A) 0 NBTR = 0.15 (A) 0 SBL = 0 (A) 9 SBT = 0.27 (A) 0 SBT = 0.27 (A) 0	WBLR = 5 m NBT = 0 m NBTR = 0 m SBL = 5 m SBT = 0 m SBT = 0 m	WBLR = 0.07 (C) 21 NBT = 0.47 (A) 0 NBTR = 0.24 (A) 0 SBL = 0.01 (A) 11 SBT = 0.42 (A) 0 SBT = 0.42 (A) 0	WBLR = 5 m NBT = 0 m NBTR = 0 m SBL = 5 m SBT = 0 m SBT = 0 m

Under the 2035 future traffic conditions with the summertime adjustment, the proposed site access onto Stanley Avenue is expected to operate satisfactorily with a maximum delay of 15 seconds reported for the outbound movement from the site access during the a.m. peak hour and 21 seconds during the p.m. peak hour.

9. Parking Review

GHD reviewed the City's current Zoning By-Law parking and loading requirements for the subject site.

9.1 City of Niagara Falls Zoning By-Law 79-200

9.1.1 Vehicular Parking

The current City of Niagara Falls Zoning By-Law 79-200 minimum parking requirements are found in Section 4.19.1, Table 1. The minimum By-Law requirement for the subject site is as follows:

- Dwelling containing 3 or more dwelling units save and except an on street townhouse dwelling
    - 1.4 parking space per dwelling unit
- Uses, Buildings and structures permitted by this By-law other than those listed in this schedule
    - 1 parking space for each 40 m^2 of floor area

The minimum parking required for the mixed-use development is as follow:

- Residential
    - 1.4 parking space per dwelling unit x 162 units = 227 spaces
- Commercial
    - 1 parking space for each 40 m^2 of gross leasable floor area x 189.7 m^2 = 5 spaces

In total, 232 vehicle parking spaces are required under the City's By-Law 79-200.

9.1.2 Barrier Free Parking

The current City of Niagara Falls Zoning By-Law 2019-44 provides the minimum barrier free parking requirement. The barrier free parking requirement is based on the total number of parking spaces and is as follows:

- 0-12 parking spaces: 1 space
- 13-100 parking spaces: 4% of the total number of parking spaces
- 101-200 parking spaces: 1 space, plus 3% of the total number of parking spaces
- 201-1,000 parking spaces: 2 spaces, plus 2% of the total number of parking spaces
- 1,000 or more parking spaces: 11 spaces, plus 1% of the total number of parking spaces

Based on a provision of 213 vehicle parking spaces, the subject site is required to provide barrier free parking spaces as follows:

- 2 spaces, plus 2% of 213 spaces = 7 spaces.

In total, 7 barrier free parking are required under the City's By-Law 2019-44.

9.2 Proposed Site Parking

The following table summarizes the minimum By-law requirements and the proposed parking/loading supply for the subject site.

Table 15 Parking Requirements and Provisions

Type	Dwelling Unit/GFA	By-Law Requirement	Provided
Vehicle Parking	162 dwelling units 189.7.63 m^2 of commercial GFA	232 vehicle parking spaces	213 vehicle spaces
Barrier Free Parking		7 barrier free spaces	7 barrier free spaces
Loading Space		N/A	1 loading space

The subject site proposes to provide a total of 213 parking spaces, a shortfall of 19 spaces from the City's By-law requirement.

9.3 Ontario's Five-Year Climate Change Action Plan

The purpose of Ontario's Climate Change Action Plan, announced in 2016, is to address climate change through transportation and land-use measures. The plan aims to reduce emissions, create more livable, mixed-use communities, and prioritize addressing climate change at the municipal level.

In terms of development, the plan outlines key actions such as supporting cycling and walking, reducing single-passenger vehicle trips, and eliminating minimum parking requirements. These actions are aimed at promoting alternative modes of transportation and creating complete, compact, and mixed-use communities. The elimination of minimum parking requirements is also a change in perspective toward auto-ownership and travel and is becoming a more common in urban areas as population increases, transit expands, and auto-ownership declines.

As the population of Niagara Falls continues to grow, transit infrastructure is expected to expand across the city, and personal vehicle ownership declines, more residential buildings with reduced parking standards relative to the Zoning By-law requirements is becoming more commonplace. Although the applicant is not requesting that the proposed development provide no parking spaces, this trend away from providing excess residential parking reflects a noticeable shift in perspective with regard to personal vehicle ownership, transportation, and the need for more affordable housing.

9.4 TTS Vehicle Ownership

GHD has also reviewed the 2016 TTS data of vehicle ownership per apartment dwelling units in the subject site's zone and surrounding zones to the north with similar levels of access to transit and identified in the figure below. The data is summarized in the table below and indicates that the average vehicle ownership within those zones is 0.57 vehicles per apartment unit.

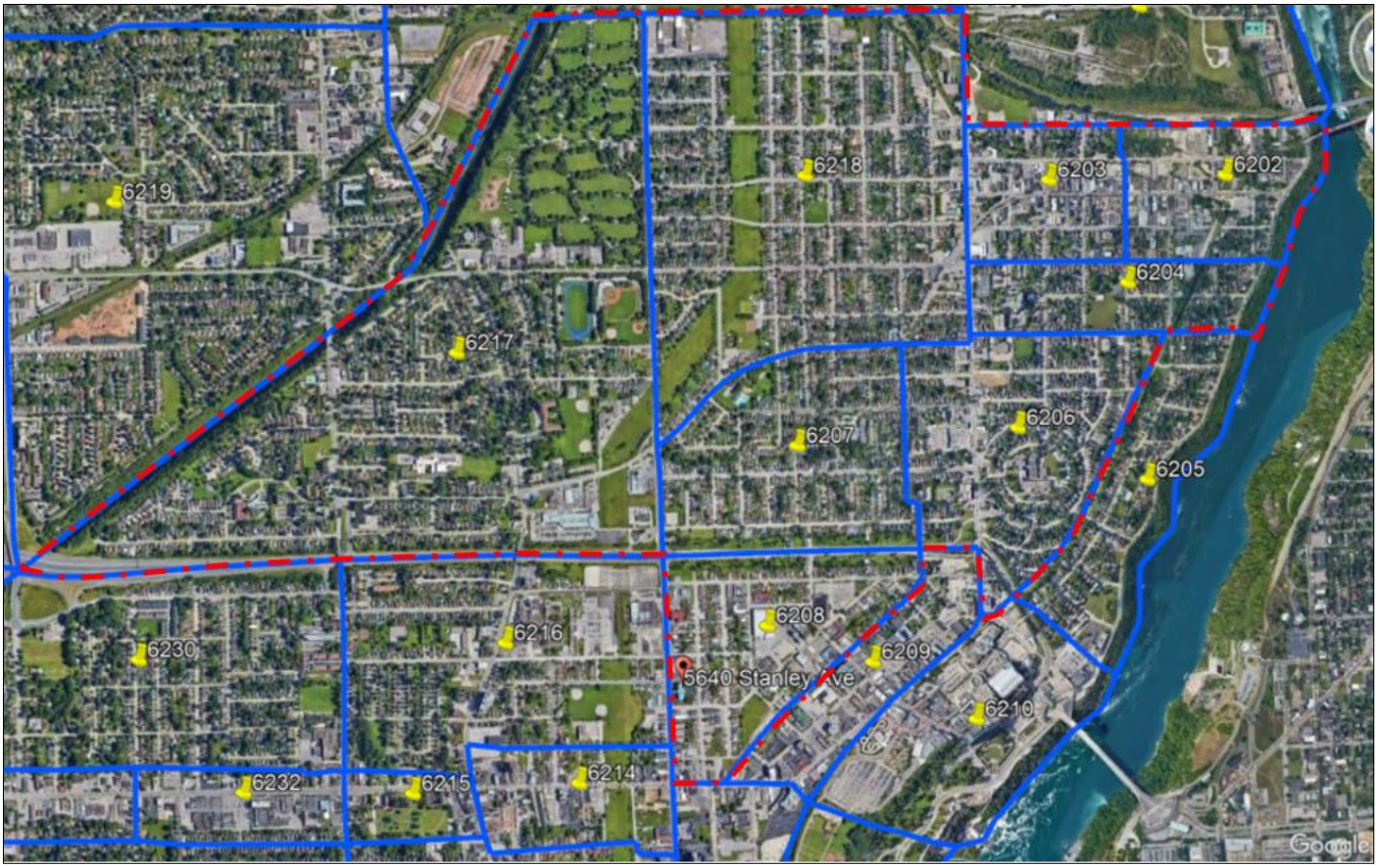

Figure 17 TTS Zones Selected for Vehicle Ownership Data

Table 16 Surrounding Zones Vehicle Ownership TTS Data for Apartments

Vehicles per Household	Number of Households	Total number of vehicles
0 vehicles	1,141	0
1 vehicle	1,006	1,006
2 vehicles	153	306
Total	**2,300**	**1,312 (0.57 vehicles per household)**

The 2016 TTS data confirms that the proposed residential rate of 1.33 spaces per unit is generally more than the surveyed demand for parking within the city which for 2016 was surveyed at 0.57 vehicles per apartment unit located in areas with similar access to transit.

9.5 Surrounding Municipality Parking Rates

GHD also reviewed existing By-law parking requirement rates for municipalities located within Niagara Region. The resident parking requirement is summarized in the table below and includes the municipalities of Niagara-on-the-Lake, Pelham, Port Colborne, St. Catharines, Thorold and Welland as summarized in the table below and typically require 1 to 1.25 parking spaces per dwelling unit for apartment buildings.

Table 17 Parking Requirements in Surrounding Municipalities)

Municipality	Resident Requirement (spaces per dwelling unit)	Source
Niagara-on-the-Lake	1 per dwelling unit	Comprehensive Zoning By-Law 4316-09, Table 6-5
Pelham	1.25 per dwelling unit	Comprehensive Zoning By-law 4481 (2022), Section 4.1.1
Port Colborne	1.25 per dwelling unit	Comprehensive Zoning By-law 6575/30/18, Section 3.1.1
St. Catharines	1.25 per dwelling unit	Comprehensive Zoning By-law 2013-283, Section 3.12.1
Thorold	1.25 per dwelling unit (under appeal)	Comprehensive Zoning By-law By-law No. 60-2019, Table 4.1
Welland	1 per dwelling unit	New Comprehensive Zoning By-Law 2017-117, Table 6.4.1

9.6 Parking Assessment

Providing off-street residential parking influences a commuter choice on whether to drive or choose alternate forms of transportation. Providing more parking in general leads to a higher percentage of auto ownership and auto usage as well. Changing travel behaviour is best done when a prospective buyer is looking to purchase a unit and providing the opportunity for a prospective buyer to easily purchase a parking space either through making it affordable, at no additional cost, or having an excess in number of spaces available to purchase can introduce travel behaviour into an area that once established is hard to change.

Sustainable transportation is a crucial component of achieving climate change adaption and environmental protection goals and reducing traffic related air pollutant and greenhouse gas emissions.

To support the proposed parking supply, the development is proposing some Travel Demand Management (TDM) measures, as outlined in **Section 10** of the report including planning and design, reduced parking supply, education and promotional material to make alternatives more competitive to driving, reducing the dependency on auto trips, and the need to provide an excessive supply of parking.

10. Travel Demand Management

10.1 Travel Demand Management

Travel Demand Management (TDM) refers to a variety of strategies to reduce congestion, minimize the number of single-occupant vehicles, encourage non-auto modes of travel, and reduce vehicle dependency to create a sustainable transportation system. TDM strategies have multiple benefits including the following:

- Reduced auto-related emissions to improve air quality;
- Decreased traffic congestion to reduce travel time;
- Increased travel options for businesses and commuters;
- Reduced personal transportation costs and energy consumptions; and
- Support Provincial smart growth objectives.

The combined benefits listed above will assist in creating a more active and livable community through improvements to overall active transportation standards for the local businesses and surrounding community.

10.2 Existing TDM Opportunities

10.2.1 Walking

Sidewalks are currently provided throughout the study area with the exception of Highway 420/Falls Avenue and on the north side of North Street east of Stanley Avenue. Signalized pedestrian crosswalks are currently provided on all four legs of the intersection of Highway 420/Falls Avenue and Stanley Avenue providing access to the norh side of Highway 420/Falls Avenue.

The intersection of Stanley Avenue and Ferry Street south of the study area also has signalized pedestrian crosswalks on all four legs of the intersection, providing access to the transit stops and amenities located in all four quadrants of the intersection.

10.2.2 Transit

The subject site is not currently serviced by any Niagara Transit Routes, however the nearest transit stop is located approximately 450 metres south of the subject site and services Niagara Transit Routes 104, and WEGO routes Blue, Red, and Red Express. The nearby transit stops and transit routes are identified in **Figure 18** below.

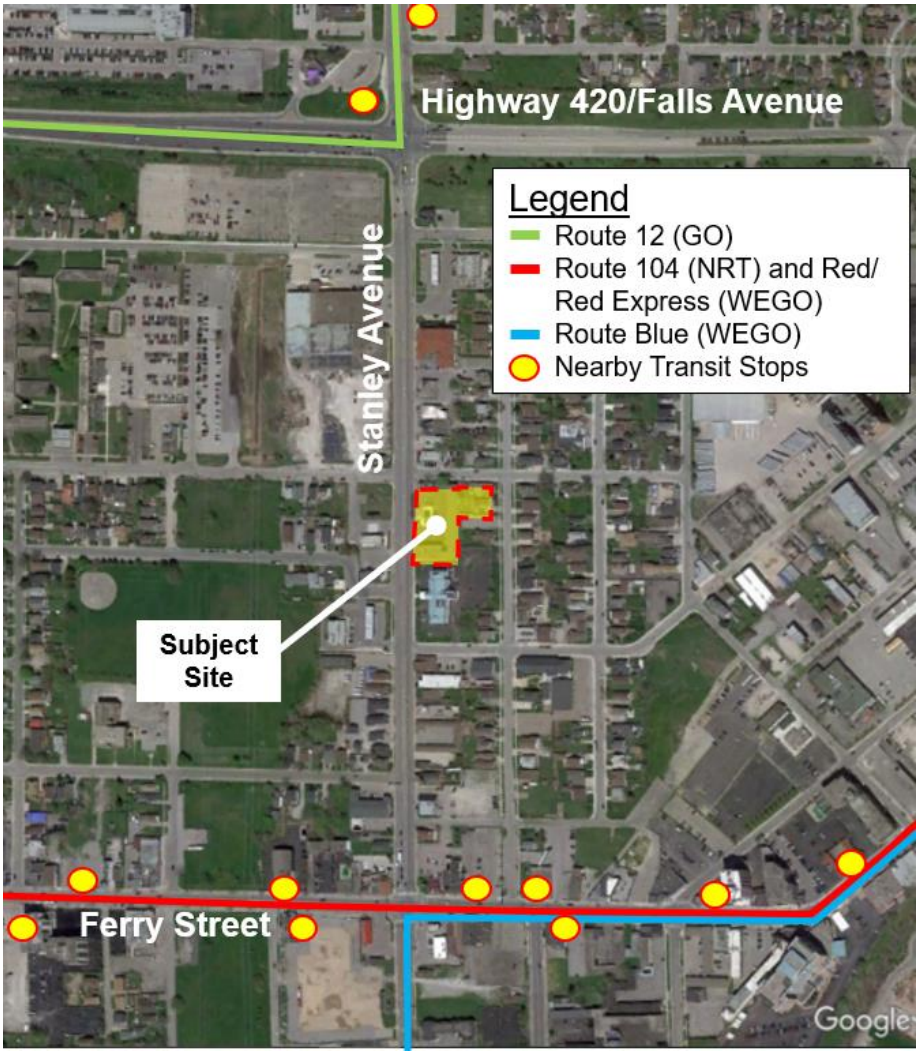

Figure 18 Nearby Transit Routes

10.3 Recommended TDM Measures

The table below summarizes the recommended TDM strategies for the subject site.

Table 18 Recommended TDM Strategies

TDM Measure	Responsibility	Cost	Note
Hard Measures			
Pedestrian connections	Applicant	Integrated into the overall development cost	Site plan includes a walkway system providing a connection to the municipal sidewalks
Public Transit Access	Applicant	Integrated into the overall development cost	The subject site is well connected to sidewalks providing access to transit stops located within walking distance
Land use Integration	Applicant	Integrated into the overall development cost	The site is a mix-use development providing opportunities for living and/or working without having to drive
Reduced Parking Supply	Applicant	Integrated into the overall development cost	Reduced parking supply encourages residents and visitors to reconsider the use of ownership of a vehicle
Soft Measures			
Information packages (Niagara Region Transit, GO schedules, cycling maps)	Applicant	To be determined.	Distributed at the sales office with Purchase and Sales Agreement
Unbundled vehicle parking sales	Applicant	Integrated into the overall development cost	Proposed to unbundle the sales of the parking space and unit to provide residents with the true cost of the parking space

11. Conclusion

The proposed site plan consists of a 14-sotrey building with 162 dwelling units and 2,042 ft^2 of commercial area.

Access to the subject site is proposed via two full-moves accesses: an access along North Street and an access along North Street.

Access to the subject site is proposed via two full-moves accesses: an access along North Street and an access along North Street.

Based on ITE Trip Generation rates, the subject site is expected to generate a total of 64 two-way vehicle trips during the a.m. peak hour consisting of 19 inbound and 45 outbound trips. During the p.m. peak hour, it is expected to generate 90 new two-way vehicle trips consisting of 53 and 37 outbound trips.

Under existing traffic conditions, all intersections are operating at acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours.

Under the 2025, 2030 and 2035 future background traffic conditions, all intersections are reported to continue to operate with acceptable v/c ratios, delays and queuing.

Under the 2025, 2030 and 2035 future total traffic conditions, all intersections are reported to continue to operate with acceptable v/c ratios, delays and queuing with the exception of the 2035 horizon year.

With the addition of site generated traffic under the 2035 future total condition, the following intersection movements are reported as critical, however, all remain below the theoretical capacity of each movement with v/c ratios less than 1.0:

- Highway 420/Falls Avenue and Stanley Avenue
    - The overall intersection with a v/c ratio of 0.89 LOS D during the p.m. peak hour
    - The eastbound left-turn with a v/c ratio of 0.88 LOS E during the p.m. peak hour
    - The westbound through with a v/c ratio of 0.90 LOS E during the p.m. peak hour
    - The southbound left-turn with a v/c ratio of 0.92 LOS E during the p.m. peak hour

Application of the City of Niagara Falls By-Law 79-200 parking rates to the subject site results in a requirement of a minimum of 232 vehicular parking spaces. Application of the City's By-law 2019-44 rates to the subject site results in a requirement of 7 barrier free spaces

The subject site provides a total of 213 vehicular parking spaces, including 7 barrier free spaces, and one loading space. The 213 vehicle parking spaces represents a shortfall of 19 spaces from the By-law requirement.

The proposed parking supply is consistent with the minimum parking By-Law requirements within nearby municipalities within the Region and with the 2016 TTS survey data for auto ownership within the surrounding planning zones to the subject site.

TDM measures are proposed for the subject site to encourage residents to explore various modes of transportation in order to reduce their dependency on single occupancy vehicle trips.

The traffic study confirms that the proposed mixed-use development can be accommodated on the existing/planned road network.

Appendices

Appendix A

Terms of Reference

Raf Andrenacci

From: John Grubich <jgrubich@niagarafalls.ca>
Sent: Wednesday, February 15, 2023 9:01 AM
To: Raf Andrenacci; Dunsmore, Susan; Lagakos, Ted (MTO)
Cc: Will Maria
Subject: RE: [EXTERNAL]-Terms of Reference - 5640 Stanley Avenue

Raf;

The City asked for both a traffic brief and a parking justification study. My comments to your TOR are provided below. Please feel free to contact me if you have any questions.

John Grubich, C.E.T. | Traffic Planning Supervisor | Municipal Works - Transportation Services | City of Niagara Falls
8208 Heartland Forest Road | Niagara Falls, ON L2H 0L7 | (905) 356-7521 ext 5214 | Fax 905-356-5576 | jgrubich@niagarafalls.ca

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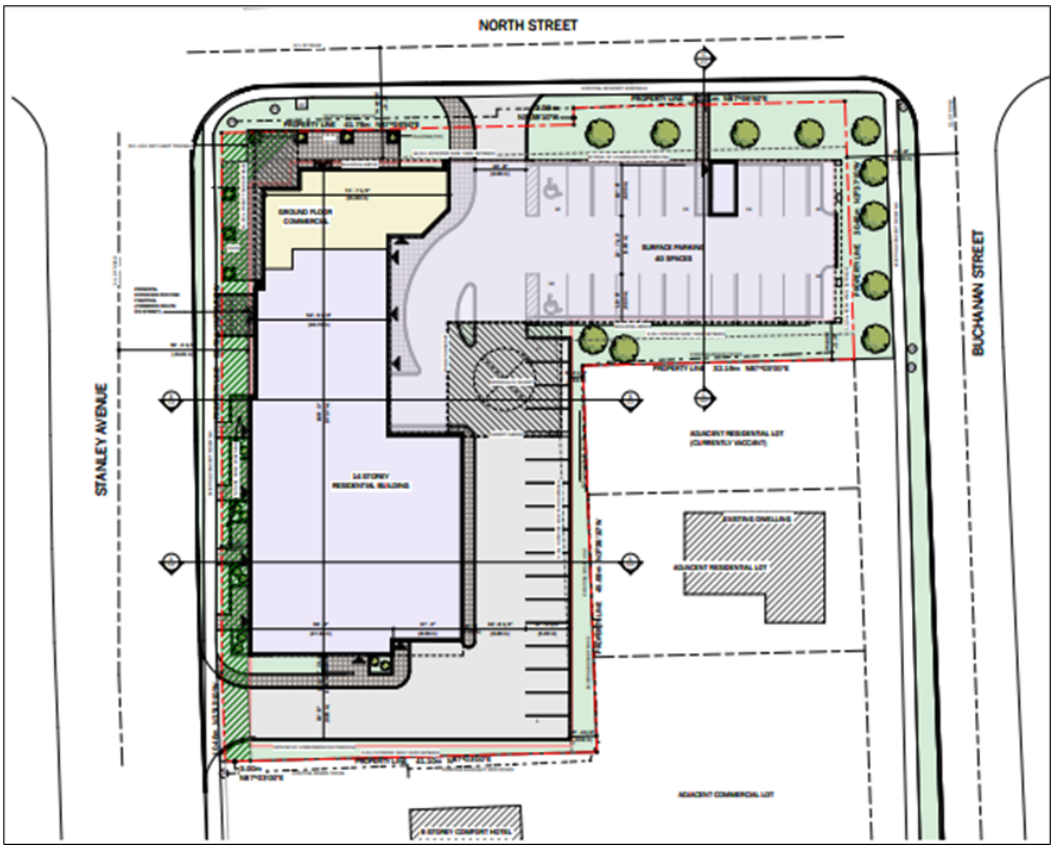
From: Raf Andrenacci <Raf.Andrenacci@ghd.com>
Sent: Tuesday, February 14, 2023 3:49 PM
To: John Grubich <jgrubich@niagarafalls.ca>; Dunsmore, Susan <Susan.Dunsmore@niagararegion.ca>; Lagakos, Ted (MTO) <ted.lagakos@ontario.ca>
Cc: Will Maria <William.Maria@ghd.com>
Subject: [EXTERNAL]-Terms of Reference - 5640 Stanley Avenue

Hello,
GHD Inc. has been retained to prepare a Transportation Impact Study for a proposed mixed-use development located on property with municipal address 5640 Stanley Avenue in the City of Niagara Falls.

The subject site consists of a 12-storey building with 156 residential units and approximately 1,912 sq.ft. of ground floor commercial GFA.

Access to the subject site is proposed via a new driveway access to Stanley Avenue and North Street.



In order To properly scope this project, we ask that the City, Region and MTO review and provide comments on the following scope and confirm if there are any additional items required as part of the study.

Study intersections

- Stanley Avenue and North Street
- Stanley Avenue and Falls Avenue
- Stanley Avenue and the site access
- North Street and the site access
- **Buchanan Avenue & North Street**

Traffic Data

Updated traffic counts at the existing study intersections will be undertaken during the a.m. and p.m. peak hours. **The city is responsible for North Street and Buchanan Avenue. We do not have a TMC for that intersection. We do have midblock counts for both North Street (between Stanley Avenue & Buchanan Avenue) and Buchanan Avenue (north of North Street only). We have counts every year from 2014, excluding 2020 due to covid.**

Study Peak Hours

Weekday a.m. and p.m. peak hours

Study Horizon Year

2023 (existing), and 2025 (Build-out), 2030 (5 years post build-out), and 2035 (10 years post build-out)

Background Growth Rate

GHD will consult with staff to determine the growth rates to be used. **2% annual growth**

Background Development Traffic

City staff to advise if there are any proposed background development to include in the study. **There is no background developments**

Trip Generation

Will be completed using rates published by the ITE Trip Generation 11th Edition, LUC 222 Multifamily Housing (High-Rise) for the residential component and LUC 822 Strip Retail Plaza (<40k) for the retail component.

The directional distribution of traffic approaching and departing the site will be determined based on TTS 2016 data, existing local patterns and first principles.

The analysis will Identify the transportation system requirements and other measures required to ensure the acceptable operation of the study intersections, including auxiliary turning lanes and other transportation infrastructure improvements.

TAC and City guidelines will be reviewed in order to complete an access management.
Review for the site access that reviews corner clearance, driveway spacing, auxiliary lanes, corner radii, and clear throat distance.

GHD will review and assess the appropriateness of the proposed car accesses and potential queuing concerns onto adjacent roads.

Complete AutoTurn assessment of the proposed development.

Existing TDM opportunities will be identified and future TDM opportunities will be recommended for the site.

The parking supply will be reviewed in accordance with the City's Zoning By-law **The City requirement is 1.4 parking spaces per residential unit. Based on the plan provided at the pre-consultation meeting, the applicant is requesting a 1.25 rate. We have accepted a 1.25 rate where sites directly abut a transit route. Since there is no direct transit on Stanley Avenue, a parking study including a review of at least 2 comparable sites without direct transit service will be required. They need to be located on an arterial road without direct transit service. Can you scope out potential sites in Niagara Falls that you feel are a good match to study. For the study, Staff would like the observation period to include a Thursday, Friday, Saturday, and Sunday between 06:00 and midnight each day. The times is to determine resident and visitor parking demands throughout the day. Your surveyors will also identify if residents/guests park on the street.**

If the above scope is acceptable to the City, Region and MTO, it will form the basis of our scope of work.

Thank you,
Raf

Raf Andrenacci

From: Nunes, Paul (MTO) <Paul.Nunes@ontario.ca>
Sent: Wednesday, February 22, 2023 5:58 PM
To: Raf Andrenacci
Cc: Will Maria
Subject: RE: Terms of Reference - 5640 Stanley Avenue

Hi Raf,

Re: TIS Terms of Reference – Request for Comments
Proposed mixed-use development – 12-storey building (156 residential units), and approximately 1,912 sq. ft. of ground floor commercial GFA
5640 Stanley Avenue, Niagara Falls, ON. (**Hwy 420**)

The MTO Traffic Section has provided the following comments:

1. The TOR is generally ok,
2. Consultant also to adjust the TMC to reflect summertime volumes to see what effect they'll have on his analysis.

Thanks,

Paul Nunes | Senior Project Manager (West)
Highway Corridor Management Section | Central Operations | Ontario Ministry of Transportation
159 Sir William Hearst Avenue, 7th Floor, Toronto, ON. M3M 0B7
Telephone: 416-270-3108 | Email: paul.nunes@ontario.ca

Ontario

From: Raf Andrenacci <Raf.Andrenacci@ghd.com>
Sent: February 14, 2023 3:49 PM
To: John Grubich <jgrubich@niagarafalls.ca>; Dunsmore, Susan <Susan.Dunsmore@niagararegion.ca>; Lagakos, Ted (MTO) <Ted.Lagakos@ontario.ca>
Cc: Will Maria <William.Maria@ghd.com>
Subject: Terms of Reference - 5640 Stanley Avenue

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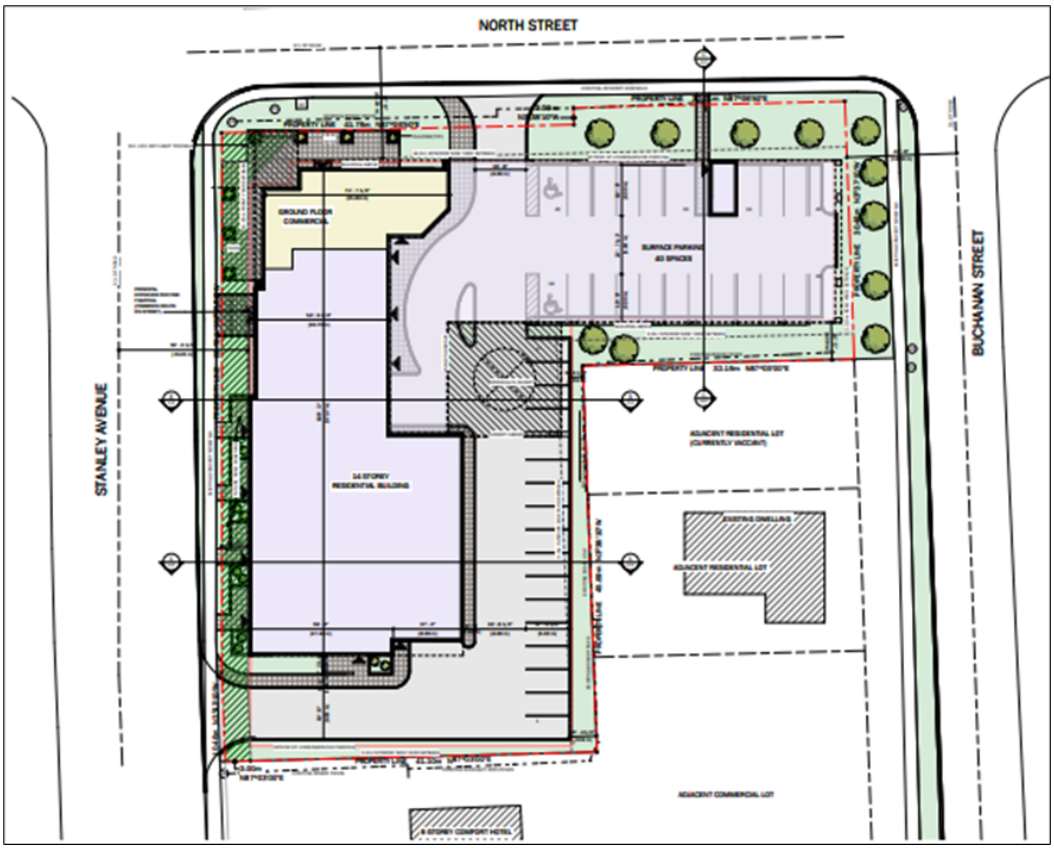

In order To properly scope this project, we ask that the City, Region and MTO review and provide comments on the following scope and confirm if there are any additional items required as part of the study.

Study intersections

- Stanley Avenue and North Street
- Stanley Avenue and Falls Avenue
- Stanley Avenue and the site access
- North Street and the site access

Traffic Data
Updated traffic counts at the existing study intersections will be undertaken during the a.m. and p.m. peak hours.

Study Peak Hours
Weekday a.m. and p.m. peak hours

Study Horizon Year
2023 (existing), and 2025 (Build-out), 2030 (5 years post build-out), and 2035 (10 years post build-out)

Background Growth Rate
GHD will consult with staff to determine the growth rates to be used.

Background Development Traffic
City staff to advise if there are any proposed background development to include in the study.

Trip Generation
Will be completed using rates published by the ITE Trip Generation 11th Edition, LUC 222 Multifamily Housing (High-Rise) for the residential component and LUC 822 Strip Retail Plaza (<40k) for the retail component.

The directional distribution of traffic approaching and departing the site will be determined based on TTS 2016 data, existing local patterns and first principles.

The analysis will Identify the transportation system requirements and other measures required to ensure the acceptable operation of the study intersections, including auxiliary turning lanes and other transportation infrastructure improvements.

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Review for the site access that reviews corner clearance, driveway spacing, auxiliary lanes, corner radii, and clear throat distance.

GHD will review and assess the appropriateness of the proposed car accesses and potential queuing concerns onto adjacent roads.

Complete AutoTurn assessment of the proposed development.

Existing TDM opportunities will be identified and future TDM opportunities will be recommended for the site.

The parking supply will be reviewed in accordance with the City's Zoning By-law

If the above scope is acceptable to the City, Region and MTO, it will form the basis of our scope of work.

Thank you,
Raf

Raf Andrenacci

From: Dunsmore, Susan <Susan.Dunsmore@niagararegion.ca>
Sent: Wednesday, February 15, 2023 3:49 PM
To: John Grubich; Raf Andrenacci; Lagakos, Ted (MTO)
Cc: Will Maria
Subject: RE: [EXTERNAL]-Terms of Reference - 5640 Stanley Avenue

Hello

The Region did not request a traffic report for this re-development therefore we have no comments on the terms of reference. If Regional traffic data is required requests can be made using the following link: https://www.niagararegion.ca/living/roads/permits/traffic-data-requests.aspx. If there are any improvements required to the Regional road or intersections the TIS is to include functional designs for the improvements.

If you require anything further please contact me at your convenience.

Thank you

Susan M. Dunsmore, P. Eng.
Manager, Development Engineering
Planning and Development Services

Phone: (905) 980-6000 or 1-800-263-7215 ext 3661
Address: 1815 Sir Isaac Brock Way, Thorold ON, L2V4T7

Niagara Region

From: John Grubich <jgrubich@niagarafalls.ca>
Sent: Wednesday, February 15, 2023 9:01 AM
To: Raf Andrenacci <Raf.Andrenacci@ghd.com>; Dunsmore, Susan <Susan.Dunsmore@niagararegion.ca>; Lagakos, Ted (MTO) <ted.lagakos@ontario.ca>
Cc: Will Maria <William.Maria@ghd.com>
Subject: RE: [EXTERNAL]-Terms of Reference - 5640 Stanley Avenue

Raf;

The City asked for both a traffic brief and a parking justification study. My comments to your TOR are provided below. Please feel free to contact me if you have any questions.

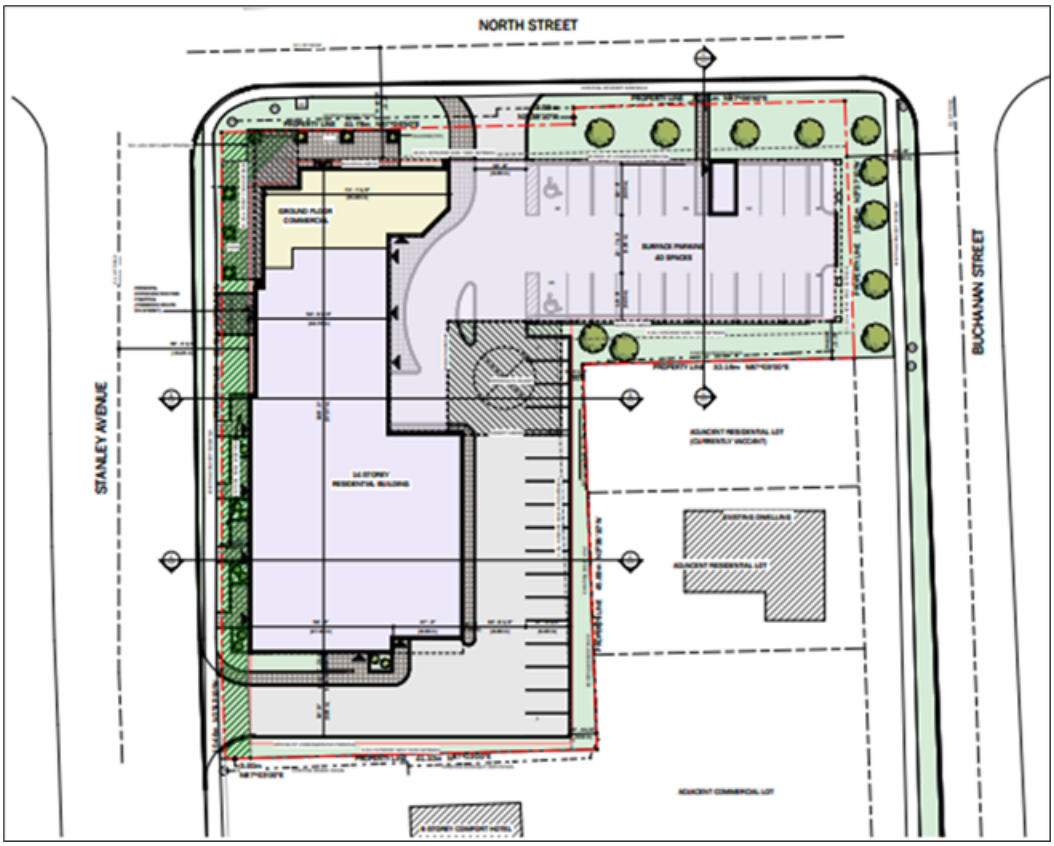
John Grubich, C.E.T. | Traffic Planning Supervisor | Municipal Works - Transportation Services | City of Niagara Falls
8208 Heartland Forest Road | Niagara Falls, ON L2H 0L7 | (905) 356-7521 ext 5214 | Fax 905-356-5576 | jgrubich@niagarafalls.ca

From: Raf Andrenacci <Raf.Andrenacci@ghd.com>
Sent: Tuesday, February 14, 2023 3:49 PM
To: John Grubich <jgrubich@niagarafalls.ca>; Dunsmore, Susan <Susan.Dunsmore@niagararegion.ca>; Lagakos, Ted (MTO) <ted.lagakos@ontario.ca>
Cc: Will Maria <William.Maria@ghd.com>
Subject: [EXTERNAL]-Terms of Reference - 5640 Stanley Avenue

Hello,
GHD Inc. has been retained to prepare a Transportation Impact Study for a proposed mixed-use development located on property with municipal address 5640 Stanley Avenue in the City of Niagara Falls.

The subject site consists of a 12-storey building with 156 residential units and approximately 1,912 sq.ft. of ground floor commercial GFA.

Access to the subject site is proposed via a new driveway access to Stanley Avenue and North Street.



In order To properly scope this project, we ask that the City, Region and MTO review and provide comments on the following scope and confirm if there are any additional items required as part of the study.

Study intersections

- Stanley Avenue and North Street
- Stanley Avenue and Falls Avenue
- Stanley Avenue and the site access
- North Street and the site access
- **Buchanan Avenue & North Street**

Traffic Data

Updated traffic counts at the existing study intersections will be undertaken during the a.m. and p.m. peak hours. **The city is responsible for North Street and Buchanan Avenue. We do not have a TMC for that intersection. We do have midblock counts for both North Street (between Stanley Avenue & Buchanan Avenue) and Buchanan Avenue (north of North Street only). We have counts every year from 2014, excluding 2020 due to covid.**

Study Peak Hours

Weekday a.m. and p.m. peak hours

Study Horizon Year

2023 (existing), and 2025 (Build-out), 2030 (5 years post build-out), and 2035 (10 years post build-out)

Background Growth Rate

GHD will consult with staff to determine the growth rates to be used. **2% annual growth**

Background Development Traffic

City staff to advise if there are any proposed background development to include in the study. **There is no background developments**

Trip Generation

Will be completed using rates published by the ITE Trip Generation 11th Edition, LUC 222 Multifamily Housing (High-Rise) for the residential component and LUC 822 Strip Retail Plaza (<40k) for the retail component.

The directional distribution of traffic approaching and departing the site will be determined based on TTS 2016 data, existing local patterns and first principles.

The analysis will Identify the transportation system requirements and other measures required to ensure the acceptable operation of the study intersections, including auxiliary turning lanes and other transportation infrastructure improvements.

TAC and City guidelines will be reviewed in order to complete an access management.
Review for the site access that reviews corner clearance, driveway spacing, auxiliary lanes, corner radii, and clear throat distance.

GHD will review and assess the appropriateness of the proposed car accesses and potential queuing concerns onto adjacent roads.

Complete AutoTurn assessment of the proposed development.

Existing TDM opportunities will be identified and future TDM opportunities will be recommended for the site.

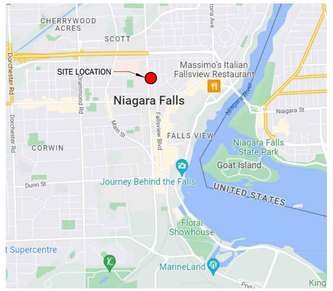
The parking supply will be reviewed in accordance with the City's Zoning By-law **The City requirement is 1.4 parking spaces per residential unit. Based on the plan provided at the pre-consultation meeting, the applicant is requesting a 1.25 rate. We have accepted a 1.25 rate where sites directly abut a transit route. Since there is no direct transit on Stanley Avenue, a parking study including a review of at least 2 comparable sites without direct transit service will be required. They need to be located on an arterial road without direct transit service. Can you scope out potential sites in Niagara Falls that you feel are a good match to study. For the study, Staff would like the observation period to include a Thursday, Friday, Saturday, and Sunday between 06:00 and midnight each day. The times is to determine resident and visitor parking demands throughout the day. Your surveyors will also identify if residents/guests park on the street.**

If the above scope is acceptable to the City, Region and MTO, it will form the basis of our scope of work.

Thank you,
Raf

Appendix B

Site Plan



KEY MAP

NOT TO SCALE

SITE STATS (FOR DISCUSSION PURPOSES ONLY)

5640 STANLEY AVENUE, NIAGARA FALLS
LOTS 803, 804, 805, 806, 807 PLAN 17 AND LOTS 816 AND 817 PLAN 9
ZONING: TOURIST COMMERCIAL (TC)

LOT AREA	**4,180.1 SQ.M**	**44,994.6 SF**	**100%**
LOT COVERAGE (INC. CANOPIES, PROJECTIONS)			
ALLOWED MAXIMUM	2,926.1 SQ.M	31,496.2 SF	70.0%
PROPOSED			
14 STOREY BUILDING	2,200.5 SQ.M	23,686.1 SF	60.6%
PROJECTIONS/CANOPY	333.3 SQ.M	3,588.0 SF	9.2%
TOTAL PROPOSED	**2,454.8 SQ.M**	**26,424 SF**	**69.8%**
LANDSCAPING			
PROPOSED	459.1 SQ.M	4,941.6 SF	12.6%
PAVED AREA (ASPHALT)			
PROPOSED	638.7 SQ.M	6,874.6 SF	17.6%
BUILDING HEIGHT			
ALLOWED MAXIMUM	12.0 M	40.0 FT	
PROPOSED	43.28 M	142.0 FT	
LOT FRONTAGE			
MIN. LOT FRONTAGE	6.0 M	19.7 FT	
PROPOSED	74.2 M	799.1 FT	

BUILDING STATS

PROPOSED UNIT COUNT

CONDO (14 STOREY TOWER)	162 UNITS
GROUND FLOOR COMMERCIAL	2042 SQ.FT (189.7 SQ.M)

PARKING STATS

PARKING REQUIRED	
1.4 SPACE / RESIDENTIAL UNIT	226.8 SPACES
1 SPACE / 40.0 m² OF COMMERCIAL AREA	4.7 SPACES
TOTAL REQUIRED	**231.5 SPACES**
REQUIRED BARRIER FREE PARKING (1+3%)	6.6 SPACES
REQUIRED LOADING AREAS	1 SPACE
PROPOSED PARKING	
SURFACE PARKING	36 STANDARD SPACES
UNDERGROUND P1	87 STANDARD SPACES
UNDERGROUND P2	90 STANDARD SPACES
TOTAL PARKING PROPOSED	**213 SPACES**
PROPOSED BARRIER FREE PARKING	7 SPACES
PROPOSED LOADING AREA	1 SPACES
PROPOSED CONDO PARKING RATIO	1.28 SPACES PER UNIT

LEGEND

- RESIDENTIAL
- COMMERCIAL
- RESIDENTIAL ABOVE
- CANOPY ABOVE
- AREA RESERVED FOR ROAD WIDENING

SITE PLAN

1 : 200

No.	DATE:	DESCRIPTION:	BY:
1	07/11/2022	PRE-CON SUBMISSION	JC
2	06/21/2023	REVISED CONCEPT/ELEVATIONS	JC

COMMISSION:

14-STOREY RESIDENTIAL DEVELOPMENT

5640 STANLEY AVENUE, NIAGARA FALLS, ON.

PROJECT TRUE N

A·C·K architects STUDIO INC.

Architectural Office:

290 Glendale Ave. St. Catharines, ON, L2T 2L3
905 984 5545

SHEET TITLE:

SITE PLAN

DRAWN BY:	JC
CHECKED BY:	MA/JR
DATE ISSUED:	
PROJECT No.:	2022-143

DRAWING No.: .SP1

Appendix C

Traffic Data

Spectrum

Turning Movement Count
Location Name: BUCHANAN AVE & NORTH ST
Date: Thu, May 18, 2023 Deployment Lead: Walter Fugaj

GHD
UNIT 1 705 MILLCREEK DRIVE
MISSISSAUGA ONTARIO, L5N 5M4
CANADA

Turning Movement Count (3 . BUCHANAN AVE & NORTH ST)

Start Time	N Approach BUCHANAN AVE						E Approach NORTH ST						S Approach BUCHANAN AVE						W Approach NORTH ST						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	1	1	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	3	
07:15:00	0	1	0	0	0	1	0	2	0	0	0	2	0	1	2	0	0	3	1	1	1	0	0	3	9	
07:30:00	1	1	0	0	0	2	0	3	0	0	0	3	0	1	1	0	0	2	0	1	0	0	0	1	8	
07:45:00	0	4	0	0	0	4	0	4	0	0	1	4	0	1	1	1	0	3	3	3	0	1	0	7	18	38
08:00:00	0	0	0	0	0	0	0	4	0	0	0	4	1	0	0	0	0	1	1	2	1	0	0	4	9	44
08:15:00	1	0	0	0	2	1	0	2	0	0	0	2	0	0	0	0	0	0	2	1	0	0	1	3	6	41
08:30:00	1	1	0	0	3	2	0	5	1	0	4	6	1	0	0	0	0	1	2	1	2	1	4	6	15	48
08:45:00	1	2	0	0	2	3	1	3	1	0	3	5	0	0	0	0	0	0	2	2	1	2	2	7	15	45
BREAK																										
16:00:00	1	6	2	0	7	9	0	12	0	0	1	12	1	3	3	0	1	7	0	9	1	1	3	11	39	
16:15:00	1	7	0	0	1	8	0	4	1	0	1	5	1	1	3	0	0	5	6	2	2	0	1	10	28	
16:30:00	1	4	0	0	0	5	0	5	0	0	0	5	1	1	2	0	1	4	3	6	1	1	4	11	25	
16:45:00	0	1	0	0	0	1	1	5	0	0	0	6	0	3	1	0	2	4	3	8	0	0	0	11	22	114
17:00:00	0	1	0	0	1	1	0	7	0	0	0	7	0	2	2	0	0	4	1	7	1	0	2	9	21	96
17:15:00	4	2	1	0	2	7	0	6	0	0	3	6	1	2	1	0	0	4	2	6	4	0	2	12	29	97
17:30:00	3	3	0	0	2	6	0	1	2	0	0	3	0	1	4	0	2	5	2	1	0	0	0	3	17	89
17:45:00	4	2	1	0	1	7	0	1	0	0	2	1	1	0	0	0	0	1	0	3	0	0	0	3	12	79
Grand Total	19	36	4	0	21	59	2	64	5	0	15	71	7	17	20	1	6	45	28	53	14	6	19	101	**276**	-
Approach%	32.2%	61%	6.8%	0%		-	2.8%	90.1%	7%	0%		-	15.6%	37.8%	44.4%	2.2%		-	27.7%	52.5%	13.9%	5.9%		-	-	-
Totals %	6.9%	13%	1.4%	0%		21.4%	0.7%	23.2%	1.8%	0%		25.7%	2.5%	6.2%	7.2%	0.4%		16.3%	10.1%	19.2%	5.1%	2.2%		36.6%	-	-
Heavy	1	1	0	0		-	1	3	0	0		-	0	1	0	0		-	4	2	0	0		-	-	-
Heavy %	5.3%	2.8%	0%	0%		-	50%	4.7%	0%	0%		-	0%	5.9%	0%	0%		-	14.3%	3.8%	0%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Peak Hour: 07:45 AM - 08:45 AM **Weather: Clear Sky (1.22 °C)**

Start Time	N Approach BUCHANAN AVE						E Approach NORTH ST						S Approach BUCHANAN AVE						W Approach NORTH ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
07:45:00	0	4	0	0	0	4	0	4	0	0	1	4	0	1	1	1	0	3	3	3	0	1	0	7	18
08:00:00	0	0	0	0	0	0	0	4	0	0	0	4	1	0	0	0	0	1	1	2	1	0	0	4	9
08:15:00	1	0	0	0	2	1	0	2	0	0	0	2	0	0	0	0	0	0	2	1	0	0	1	3	6
08:30:00	1	1	0	0	3	2	0	5	1	0	4	6	1	0	0	0	0	1	2	1	2	1	4	6	15
Grand Total	2	5	0	0	5	7	0	15	1	0	5	16	2	1	1	1	0	5	8	7	3	2	5	20	**48**
Approach%	28.6%	71.4%	0%	0%		-	0%	93.8%	6.3%	0%		-	40%	20%	20%	20%		-	40%	35%	15%	10%		-	**-**
Totals %	4.2%	10.4%	0%	0%		14.6%	0%	31.3%	2.1%	0%		33.3%	4.2%	2.1%	2.1%	2.1%		10.4%	16.7%	14.6%	6.3%	4.2%		41.7%	**-**
PHF	0.5	0.31	0	0		0.44	0	0.75	0.25	0		0.67	0.5	0.25	0.25	0.25		0.42	0.67	0.58	0.38	0.5		0.71	**-**
Heavy	0	1	0	0		1	0	1	0	0		1	0	0	0	0		0	3	0	0	0		3	**-**
Heavy %	0%	20%	0%	0%		14.3%	0%	6.7%	0%	0%		6.3%	0%	0%	0%	0%		0%	37.5%	0%	0%	0%		15%	**-**
Lights	2	4	0	0		6	0	14	1	0		15	2	1	1	1		5	5	7	3	2		17	**-**
Lights %	100%	80%	0%	0%		85.7%	0%	93.3%	100%	0%		93.8%	100%	100%	100%	100%		100%	62.5%	100%	100%	100%		85%	**-**
Single-Unit Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Buses	0	1	0	0		1	0	1	0	0		1	0	0	0	0		0	3	0	0	0		3	**-**
Buses %	0%	20%	0%	0%		14.3%	0%	6.7%	0%	0%		6.3%	0%	0%	0%	0%		0%	37.5%	0%	0%	0%		15%	**-**
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	5	-	-	-	-	-	5	-	-	-	-	-	0	-	-	-	-	-	5	-	**-**
Pedestrians%	-	-	-	-	33.3%		-	-	-	-	33.3%		-	-	-	-	0%		-	-	-	-	33.3%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

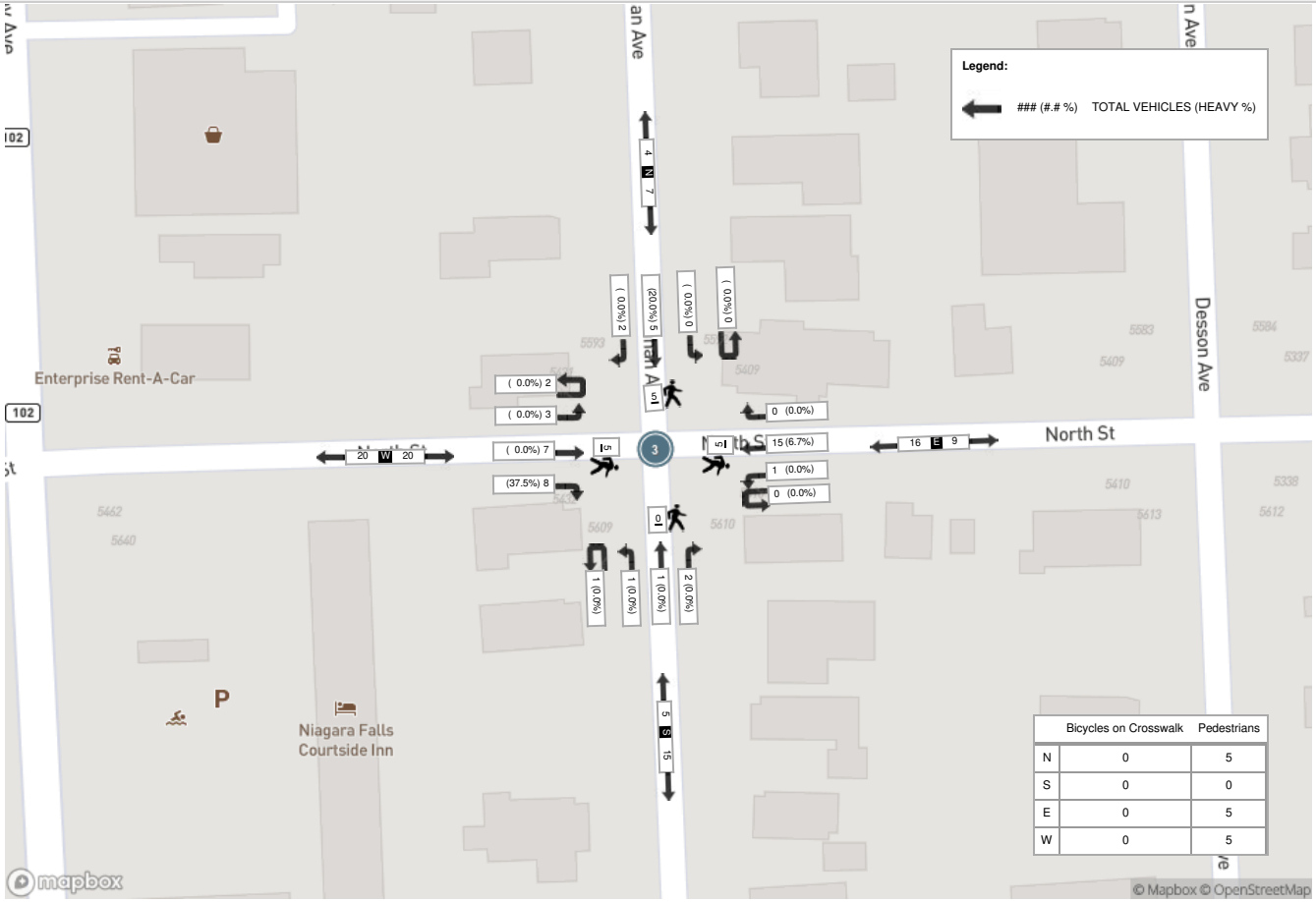
Turning Movement Count
Location Name: BUCHANAN AVE & NORTH ST
Date: Thu, May 18, 2023 Deployment Lead: Walter Fugaj

GHD
UNIT 1 705 MILLCREEK DRIVE
MISSISSAUGA ONTARIO, L5N 5M4
CANADA

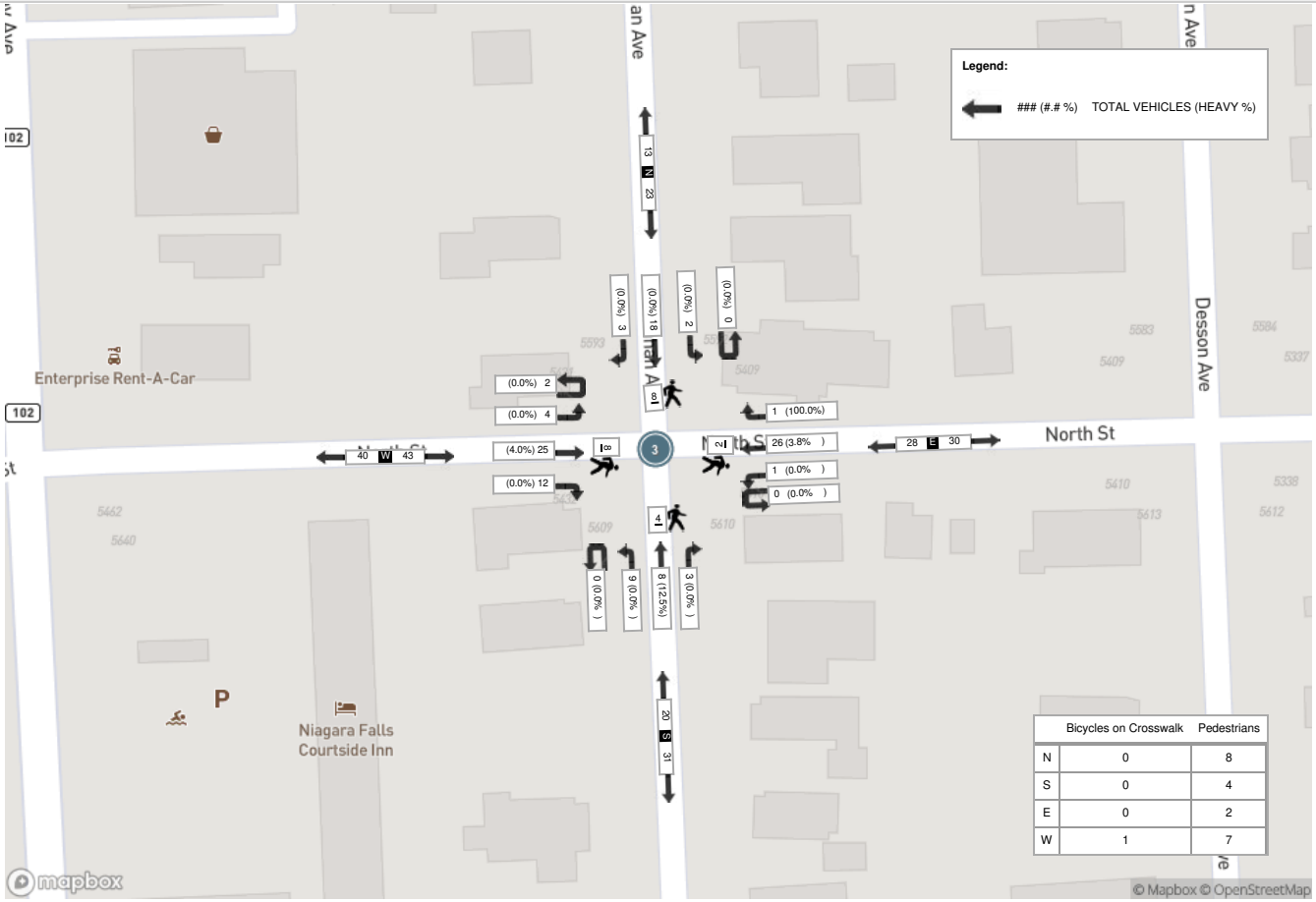
Peak Hour: 04:00 PM - 05:00 PM Weather: Overcast Clouds (15.97 °C)

Start Time	N Approach BUCHANAN AVE						E Approach NORTH ST						S Approach BUCHANAN AVE						W Approach NORTH ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:00:00	1	6	2	0	7	9	0	12	0	0	1	12	1	3	3	0	1	7	0	9	1	1	3	11	39
16:15:00	1	7	0	0	1	8	0	4	1	0	1	5	1	1	3	0	0	5	6	2	2	0	1	10	28
16:30:00	1	4	0	0	0	5	0	5	0	0	0	5	1	1	2	0	1	4	3	6	1	1	4	11	25
16:45:00	0	1	0	0	0	1	1	5	0	0	0	6	0	3	1	0	2	4	3	8	0	0	0	11	22
Grand Total	3	18	2	0	8	23	1	26	1	0	2	28	3	8	9	0	4	20	12	25	4	2	8	43	**114**
Approach%	13%	78.3%	8.7%	0%		-	3.6%	92.9%	3.6%	0%		-	15%	40%	45%	0%		-	27.9%	58.1%	9.3%	4.7%		-	**-**
Totals %	2.6%	15.8%	1.8%	0%		20.2%	0.9%	22.8%	0.9%	0%		24.6%	2.6%	7%	7.9%	0%		17.5%	10.5%	21.9%	3.5%	1.8%		37.7%	**-**
PHF	0.75	0.64	0.25	0		0.64	0.25	0.54	0.25	0		0.58	0.75	0.67	0.75	0		0.71	0.5	0.69	0.5	0.5		0.98	**-**
Heavy	0	0	0	0		0	1	1	0	0		2	0	1	0	0		1	0	1	0	0		1	**-**
Heavy %	0%	0%	0%	0%		0%	100%	3.8%	0%	0%		7.1%	0%	12.5%	0%	0%		5%	0%	4%	0%	0%		2.3%	**-**
Lights	3	17	2	0		22	0	24	1	0		25	3	7	9	0		19	12	24	4	2		42	**-**
Lights %	100%	94.4%	100%	0%		95.7%	0%	92.3%	100%	0%		89.3%	100%	87.5%	100%	0%		95%	100%	96%	100%	100%		97.7%	**-**
Single-Unit Trucks	0	0	0	0		0	1	0	0	0		1	0	0	0	0		0	0	1	0	0		1	**-**
Single-Unit Trucks %	0%	0%	0%	0%		0%	100%	0%	0%	0%		3.6%	0%	0%	0%	0%		0%	0%	4%	0%	0%		2.3%	**-**
Buses	0	0	0	0		0	0	1	0	0		1	0	1	0	0		1	0	0	0	0		0	**-**
Buses %	0%	0%	0%	0%		0%	0%	3.8%	0%	0%		3.6%	0%	12.5%	0%	0%		5%	0%	0%	0%	0%		0%	**-**
Bicycles on Road	0	1	0	0		1	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	**-**
Bicycles on Road %	0%	5.6%	0%	0%		4.3%	0%	3.8%	0%	0%		3.6%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	8	-	-	-	-	-	2	-	-	-	-	-	4	-	-	-	-	-	7	-	**-**
Pedestrians%	-	-	-	-	36.4%		-	-	-	-	9.1%		-	-	-	-	18.2%		-	-	-	-	31.8%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	4.5%		**-**

Peak Hour: 07:45 AM - 08:45 AM **Weather: Clear Sky (1.22 °C)**



Peak Hour: 04:00 PM - 05:00 PM **Weather: Overcast Clouds (15.97 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	8
S	0	4
E	0	2
W	1	7

Spectrum

Turning Movement Count
Location Name: STANLEY AVE & FALLS AVE
Date: Thu, May 18, 2023 Deployment Lead: Walter Fugaj

GHD
UNIT 1 705 MILLCREEK DRIVE
MISSISSAUGA ONTARIO, L5N 5M4
CANADA

Turning Movement Count (2 . STANLEY AVE & FALLS AVE)

Start Time	N Approach STANLEY AVE						E Approach FALLS AVE						S Approach STANLEY AVE						W Approach HWY 420						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	46	29	1	0	0	76	5	37	3	0	1	45	7	33	39	0	0	79	55	50	43	0	1	148	348	
07:15:00	51	45	7	0	0	103	4	44	5	0	2	53	3	33	38	0	1	74	97	61	50	0	2	208	438	
07:30:00	68	36	12	0	0	116	5	56	2	0	0	63	9	49	49	0	0	107	84	96	77	0	1	257	543	
07:45:00	50	56	7	0	1	113	5	42	4	0	2	51	10	46	59	0	0	115	121	115	86	0	2	322	601	1930
08:00:00	71	41	8	0	3	120	8	47	5	0	7	60	10	38	50	0	3	98	81	90	89	0	9	260	538	2120
08:15:00	60	41	8	0	1	109	8	55	7	0	1	70	12	50	58	0	0	120	128	129	82	1	2	340	639	2321
08:30:00	51	69	5	0	1	125	5	51	12	0	7	68	8	51	68	0	1	127	124	117	88	1	2	330	650	2428
08:45:00	53	64	9	0	1	126	10	72	11	0	10	93	12	61	66	0	2	139	110	146	88	0	6	344	702	2529
BREAK																										
16:00:00	111	87	7	0	2	205	18	154	16	0	4	188	14	82	122	0	6	218	127	118	73	0	10	318	929	
16:15:00	86	76	13	0	0	175	13	119	28	0	6	160	14	83	111	0	0	208	132	99	98	0	4	329	872	
16:30:00	89	73	13	0	3	175	14	176	13	0	18	203	8	61	131	0	2	200	139	123	80	0	5	342	920	
16:45:00	81	78	14	0	7	173	8	171	18	0	9	197	8	61	96	0	0	165	135	154	96	0	2	385	920	3641
17:00:00	101	67	7	0	2	175	12	170	15	0	2	197	17	82	129	0	5	228	122	91	82	0	4	295	895	3607
17:15:00	86	77	9	1	1	173	14	163	13	0	20	190	14	82	113	0	3	209	132	107	75	1	3	315	887	3622
17:30:00	77	65	11	0	3	153	9	131	10	0	6	150	11	55	89	3	0	158	100	112	108	0	1	320	781	3483
17:45:00	73	58	13	0	2	144	7	112	15	0	6	134	10	62	103	0	2	175	112	101	103	0	2	316	769	3332
Grand Total	1154	962	144	1	27	2261	145	1600	177	0	101	1922	167	929	1321	3	25	2420	1799	1709	1318	3	56	4829	**11432**	-
Approach%	51%	42.5%	6.4%	0%		-	7.5%	83.2%	9.2%	0%		-	6.9%	38.4%	54.6%	0.1%		-	37.3%	35.4%	27.3%	0.1%		-	-	-
Totals %	10.1%	8.4%	1.3%	0%		19.8%	1.3%	14%	1.5%	0%		16.8%	1.5%	8.1%	11.6%	0%		21.2%	15.7%	14.9%	11.5%	0%		42.2%	-	-
Heavy	26	21	0	0		-	2	30	4	0		-	8	27	53	0		-	57	39	36	0		-	-	-
Heavy %	2.3%	2.2%	0%	0%		-	1.4%	1.9%	2.3%	0%		-	4.8%	2.9%	4%	0%		-	3.2%	2.3%	2.7%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: STANLEY AVE & FALLS AVE
Date: Thu, May 18, 2023 Deployment Lead: Walter Fugaj

GHD
UNIT 1 705 MILLCREEK DRIVE
MISSISSAUGA ONTARIO, L5N 5M4
CANADA

Peak Hour: 08:00 AM - 09:00 AM **Weather: Clear Sky (1.22 °C)**

Start Time	N Approach STANLEY AVE						E Approach FALLS AVE						S Approach STANLEY AVE						W Approach HWY 420						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	71	41	8	0	3	120	8	47	5	0	7	60	10	38	50	0	3	98	81	90	89	0	9	260	538
08:15:00	60	41	8	0	1	109	8	55	7	0	1	70	12	50	58	0	0	120	128	129	82	1	2	340	639
08:30:00	51	69	5	0	1	125	5	51	12	0	7	68	8	51	68	0	1	127	124	117	88	1	2	330	650
08:45:00	53	64	9	0	1	126	10	72	11	0	10	93	12	61	66	0	2	139	110	146	88	0	6	344	702
Grand Total	235	215	30	0	6	480	31	225	35	0	25	291	42	200	242	0	6	484	443	482	347	2	19	1274	**2529**
Approach%	49%	44.8%	6.3%	0%		-	10.7%	77.3%	12%	0%		-	8.7%	41.3%	50%	0%		-	34.8%	37.8%	27.2%	0.2%		-	**-**
Totals %	9.3%	8.5%	1.2%	0%		19%	1.2%	8.9%	1.4%	0%		11.5%	1.7%	7.9%	9.6%	0%		19.1%	17.5%	19.1%	13.7%	0.1%		50.4%	**-**
PHF	0.83	0.78	0.83	0		0.95	0.78	0.78	0.73	0		0.78	0.88	0.82	0.89	0		0.87	0.87	0.83	0.97	0.5		0.93	**-**
Heavy	7	9	0	0		16	2	9	1	0		12	4	13	17	0		34	16	9	13	0		38	**-**
Heavy %	3%	4.2%	0%	0%		3.3%	6.5%	4%	2.9%	0%		4.1%	9.5%	6.5%	7%	0%		7%	3.6%	1.9%	3.7%	0%		3%	**-**
Lights	228	206	30	0		464	29	216	34	0		279	38	187	225	0		450	427	473	334	2		1236	**-**
Lights %	97%	95.8%	100%	0%		96.7%	93.5%	96%	97.1%	0%		95.9%	90.5%	93.5%	93%	0%		93%	96.4%	98.1%	96.3%	100%		97%	**-**
Single-Unit Trucks	3	2	0	0		5	2	1	1	0		4	1	7	8	0		16	8	3	3	0		14	**-**
Single-Unit Trucks %	1.3%	0.9%	0%	0%		1%	6.5%	0.4%	2.9%	0%		1.4%	2.4%	3.5%	3.3%	0%		3.3%	1.8%	0.6%	0.9%	0%		1.1%	**-**
Buses	3	5	0	0		8	0	7	0	0		7	3	4	6	0		13	3	5	7	0		15	**-**
Buses %	1.3%	2.3%	0%	0%		1.7%	0%	3.1%	0%	0%		2.4%	7.1%	2%	2.5%	0%		2.7%	0.7%	1%	2%	0%		1.2%	**-**
Articulated Trucks	1	2	0	0		3	0	1	0	0		1	0	2	3	0		5	5	1	3	0		9	**-**
Articulated Trucks %	0.4%	0.9%	0%	0%		0.6%	0%	0.4%	0%	0%		0.3%	0%	1%	1.2%	0%		1%	1.1%	0.2%	0.9%	0%		0.7%	**-**
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	6	-	-	-	-	-	23	-	-	-	-	-	5	-	-	-	-	-	18	-	**-**
Pedestrians%	-	-	-	-	10.7%		-	-	-	-	41.1%		-	-	-	-	8.9%		-	-	-	-	32.1%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	3.6%		-	-	-	-	1.8%		-	-	-	-	1.8%		**-**

Spectrum

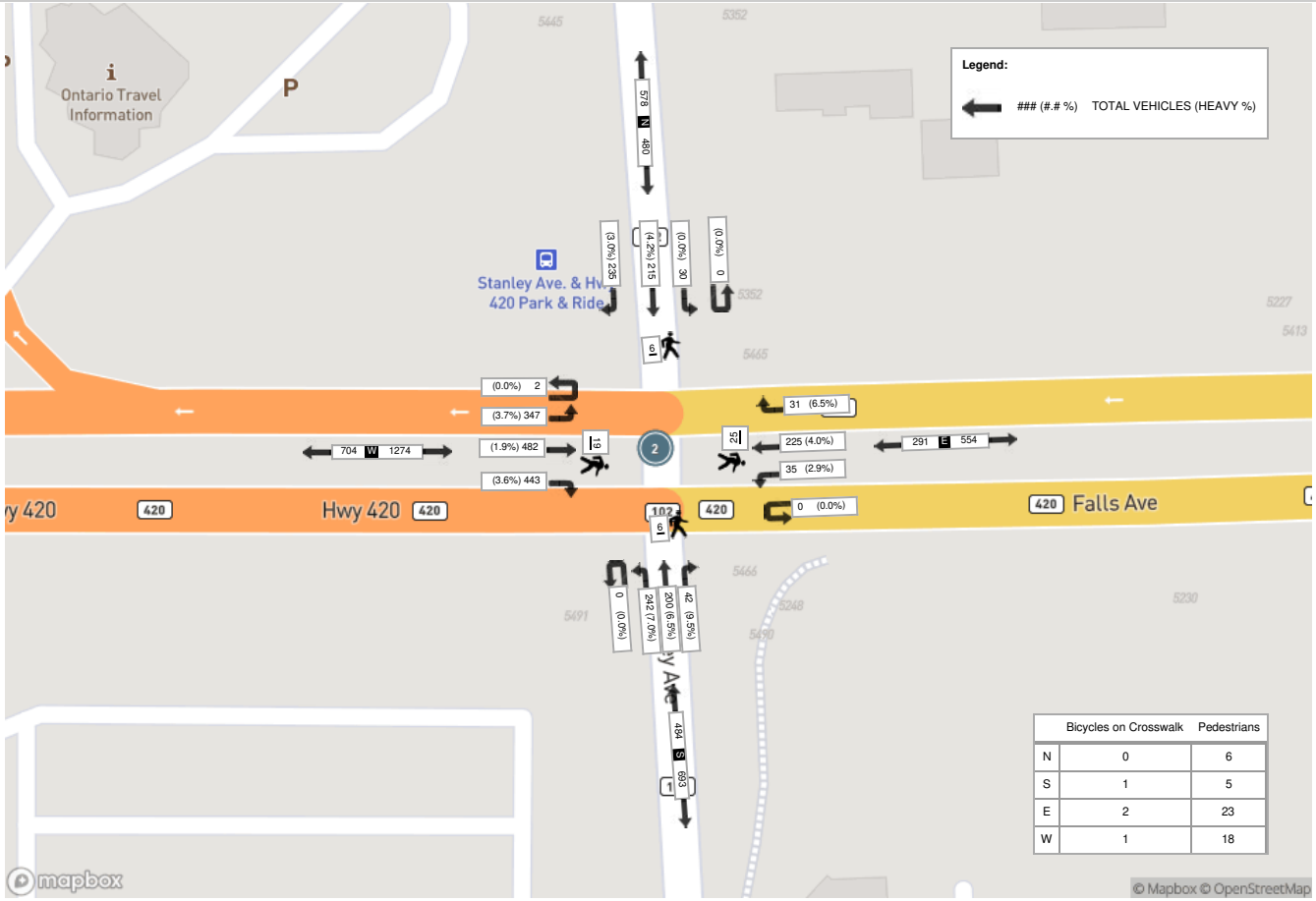
Turning Movement Count
Location Name: STANLEY AVE & FALLS AVE
Date: Thu, May 18, 2023 Deployment Lead: Walter Fugaj

GHD
UNIT 1 705 MILLCREEK DRIVE
MISSISSAUGA ONTARIO, L5N 5M4
CANADA

Peak Hour: 04:00 PM - 05:00 PM Weather: Overcast Clouds (15.97 °C)

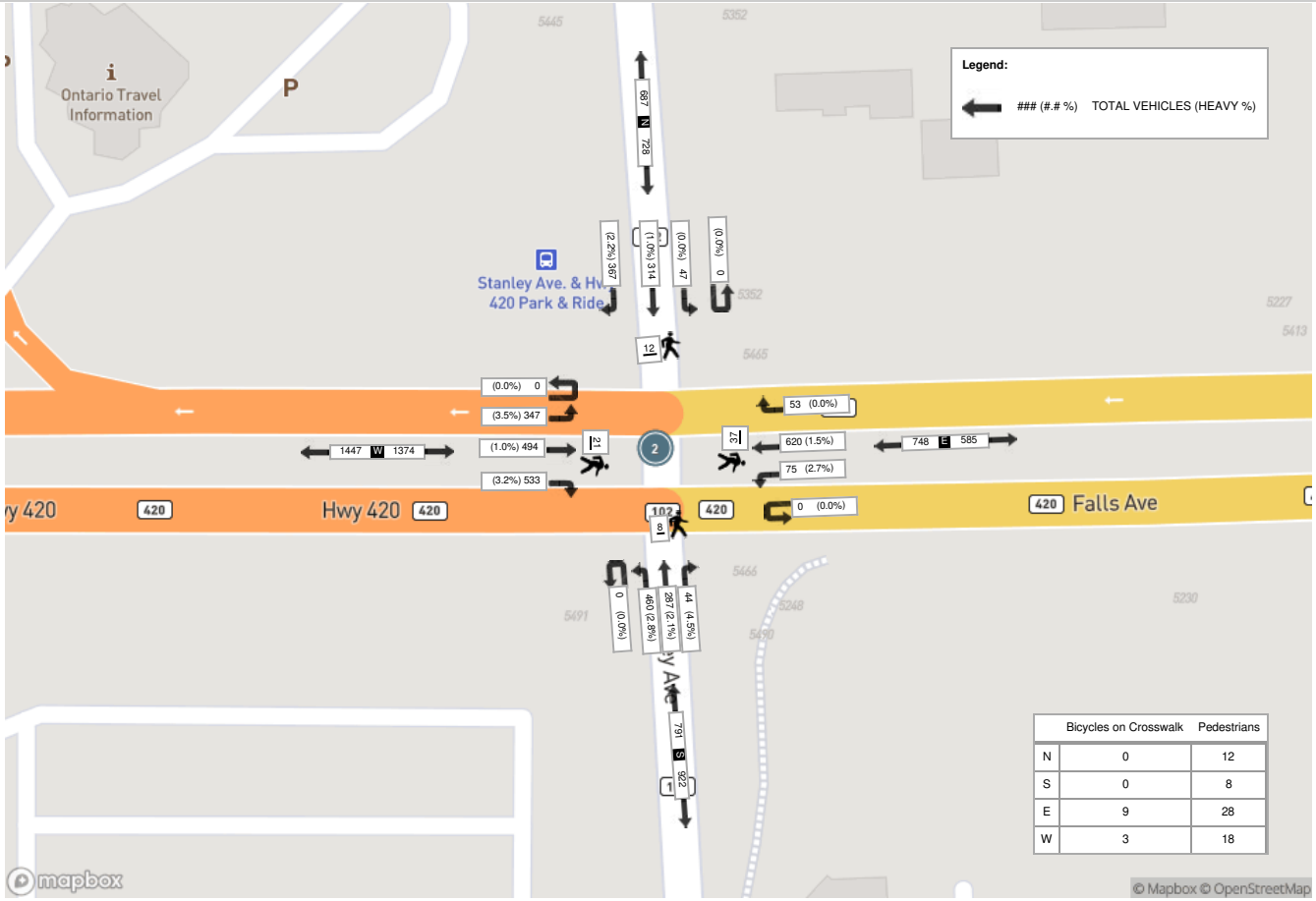
Start Time	N Approach STANLEY AVE						E Approach FALLS AVE						S Approach STANLEY AVE						W Approach HWY 420						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:00:00	111	87	7	0	2	205	18	154	16	0	4	188	14	82	122	0	6	218	127	118	73	0	10	318	929
16:15:00	86	76	13	0	0	175	13	119	28	0	6	160	14	83	111	0	0	208	132	99	98	0	4	329	872
16:30:00	89	73	13	0	3	175	14	176	13	0	18	203	8	61	131	0	2	200	139	123	80	0	5	342	920
16:45:00	81	78	14	0	7	173	8	171	18	0	9	197	8	61	96	0	0	165	135	154	96	0	2	385	920
Grand Total	367	314	47	0	12	728	53	620	75	0	37	748	44	287	460	0	8	791	533	494	347	0	21	1374	**3641**
Approach%	50.4%	43.1%	6.5%	0%		-	7.1%	82.9%	10%	0%		-	5.6%	36.3%	58.2%	0%		-	38.8%	36%	25.3%	0%		-	**-**
Totals %	10.1%	8.6%	1.3%	0%		20%	1.5%	17%	2.1%	0%		20.5%	1.2%	7.9%	12.6%	0%		21.7%	14.6%	13.6%	9.5%	0%		37.7%	**-**
PHF	0.83	0.9	0.84	0		0.89	0.74	0.88	0.67	0		0.92	0.79	0.86	0.88	0		0.91	0.96	0.8	0.89	0		0.89	**-**
Heavy	8	3	0	0		11	0	9	2	0		11	2	6	13	0		21	17	5	12	0		34	**-**
Heavy %	2.2%	1%	0%	0%		1.5%	0%	1.5%	2.7%	0%		1.5%	4.5%	2.1%	2.8%	0%		2.7%	3.2%	1%	3.5%	0%		2.5%	**-**
Lights	359	311	47	0		717	53	611	73	0		737	42	280	447	0		769	516	489	335	0		1340	**-**
Lights %	97.8%	99%	100%	0%		98.5%	100%	98.5%	97.3%	0%		98.5%	95.5%	97.6%	97.2%	0%		97.2%	96.8%	99%	96.5%	0%		97.5%	**-**
Single-Unit Trucks	4	3	0	0		7	0	2	0	0		2	1	2	6	0		9	7	2	3	0		12	**-**
Single-Unit Trucks %	1.1%	1%	0%	0%		1%	0%	0.3%	0%	0%		0.3%	2.3%	0.7%	1.3%	0%		1.1%	1.3%	0.4%	0.9%	0%		0.9%	**-**
Buses	4	0	0	0		4	0	4	2	0		6	1	3	6	0		10	9	2	8	0		19	**-**
Buses %	1.1%	0%	0%	0%		0.5%	0%	0.6%	2.7%	0%		0.8%	2.3%	1%	1.3%	0%		1.3%	1.7%	0.4%	2.3%	0%		1.4%	**-**
Articulated Trucks	0	0	0	0		0	0	3	0	0		3	0	1	1	0		2	1	1	1	0		3	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.5%	0%	0%		0.4%	0%	0.3%	0.2%	0%		0.3%	0.2%	0.2%	0.3%	0%		0.2%	**-**
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	**-**
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.1%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	12	-	-	-	-	-	28	-	-	-	-	-	8	-	-	-	-	-	18	-	**-**
Pedestrians%	-	-	-	-	15.4%		-	-	-	-	35.9%		-	-	-	-	10.3%		-	-	-	-	23.1%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	9	-	-	-	-	-	0	-	-	-	-	-	3	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	11.5%		-	-	-	-	0%		-	-	-	-	3.8%		**-**

Peak Hour: 08:00 AM - 09:00 AM **Weather: Clear Sky (1.22 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	6
S	1	5
E	2	23
W	1	18

Peak Hour: 04:00 PM - 05:00 PM **Weather: Overcast Clouds (15.97 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	12
S	0	8
E	9	28
W	3	18

Spectrum

Turning Movement Count
Location Name: STANLEY AVE & NORTH ST
Date: Thu, May 18, 2023 Deployment Lead: Walter Fugaj

GHD
UNIT 1 705 MILLCREEK DRIVE
MISSISSAUGA ONTARIO, L5N 5M4
CANADA

Turning Movement Count (1 . STANLEY AVE & NORTH ST)

Start Time	N Approach STANLEY AVE						E Approach NORTH ST						S Approach STANLEY AVE						W Approach NORTH ST						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	9	66	0	0	0	75	1	0	0	0	1	1	0	65	6	0	0	71	0	0	5	0	0	5	152	
07:15:00	21	109	4	0	0	134	2	0	1	0	6	3	2	59	3	0	0	64	4	0	11	0	1	15	216	
07:30:00	22	84	1	0	0	107	4	0	2	0	0	6	0	94	3	0	0	97	4	1	6	0	0	11	221	
07:45:00	43	114	5	0	0	162	4	1	0	0	2	5	2	105	4	0	0	111	6	0	4	0	4	10	288	877
08:00:00	21	94	1	0	0	116	4	0	0	0	6	4	4	84	5	0	0	93	6	0	4	0	1	10	223	948
08:15:00	26	124	3	0	0	153	3	1	0	0	5	4	3	100	3	0	2	106	2	0	6	0	0	8	271	1003
08:30:00	16	163	5	0	1	184	3	1	2	0	5	6	2	108	5	0	1	115	3	0	11	0	2	14	319	1101
08:45:00	21	151	3	0	1	175	3	2	0	0	11	5	4	127	1	0	4	132	4	0	3	0	0	7	319	1132
BREAK																										
16:00:00	13	197	10	0	0	220	14	1	4	0	5	19	1	179	4	0	0	184	10	2	15	0	4	27	450	
16:15:00	4	196	6	0	0	206	8	1	1	0	9	10	4	172	1	0	1	177	5	2	10	0	1	17	410	
16:30:00	11	206	10	0	2	227	9	0	1	0	4	10	2	170	6	0	0	178	5	2	4	0	3	11	426	
16:45:00	10	202	10	0	0	222	8	1	1	0	11	10	1	158	4	0	0	163	6	2	5	0	1	13	408	1694
17:00:00	13	175	7	0	0	195	12	1	0	0	4	13	0	215	2	0	1	217	6	2	8	0	1	16	441	1685
17:15:00	6	194	8	0	0	208	6	1	4	0	20	11	2	163	1	0	0	166	6	1	8	0	3	15	400	1675
17:30:00	4	165	3	0	2	172	4	3	1	0	15	8	0	160	1	1	2	162	3	0	5	0	2	8	350	1599
17:45:00	5	161	1	0	0	167	3	0	2	0	13	5	2	143	2	0	0	147	3	0	2	0	1	5	324	1515
Grand Total	245	2401	77	0	6	2723	88	13	19	0	117	120	29	2102	51	1	11	2183	73	12	107	0	24	192	**5218**	-
Approach%	9%	88.2%	2.8%	0%		-	73.3%	10.8%	15.8%	0%		-	1.3%	96.3%	2.3%	0%		-	38%	6.3%	55.7%	0%		-	**-**	-
Totals %	4.7%	46%	1.5%	0%		52.2%	1.7%	0.2%	0.4%	0%		2.3%	0.6%	40.3%	1%	0%		41.8%	1.4%	0.2%	2.1%	0%		3.7%	**-**	-
Heavy	7	74	2	0		-	1	1	2	0		-	3	74	1	0		-	1	1	10	0		-	**-**	-
Heavy %	2.9%	3.1%	2.6%	0%		-	1.1%	7.7%	10.5%	0%		-	10.3%	3.5%	2%	0%		-	1.4%	8.3%	9.3%	0%		-	**-**	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-

Spectrum

Turning Movement Count
Location Name: STANLEY AVE & NORTH ST
Date: Thu, May 18, 2023 Deployment Lead: Walter Fugaj

GHD
UNIT 1 705 MILLCREEK DRIVE
MISSISSAUGA ONTARIO, L5N 5M4
CANADA

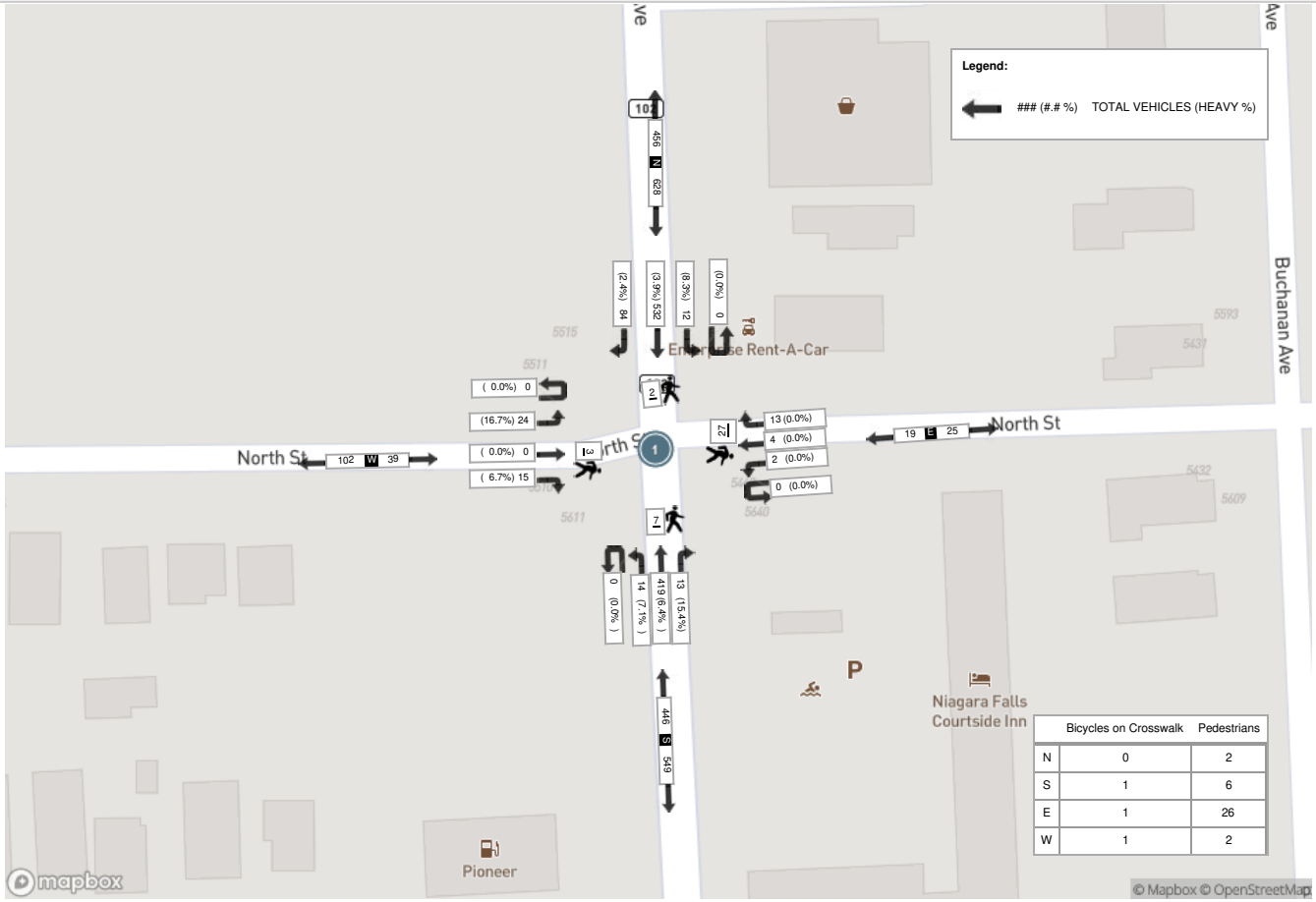
Peak Hour: 08:00 AM - 09:00 AM Weather: Clear Sky (1.22 °C)

Start Time	N Approach STANLEY AVE						E Approach NORTH ST						S Approach STANLEY AVE						W Approach NORTH ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	21	94	1	0	0	116	4	0	0	0	6	4	4	84	5	0	0	93	6	0	4	0	1	10	223
08:15:00	26	124	3	0	0	153	3	1	0	0	5	4	3	100	3	0	2	106	2	0	6	0	0	8	271
08:30:00	16	163	5	0	1	184	3	1	2	0	5	6	2	108	5	0	1	115	3	0	11	0	2	14	319
08:45:00	21	151	3	0	1	175	3	2	0	0	11	5	4	127	1	0	4	132	4	0	3	0	0	7	319
Grand Total	84	532	12	0	2	628	13	4	2	0	27	19	13	419	14	0	7	446	15	0	24	0	3	39	**1132**
Approach%	13.4%	84.7%	1.9%	0%		-	68.4%	21.1%	10.5%	0%		-	2.9%	93.9%	3.1%	0%		-	38.5%	0%	61.5%	0%		-	**-**
Totals %	7.4%	47%	1.1%	0%		55.5%	1.1%	0.4%	0.2%	0%		1.7%	1.1%	37%	1.2%	0%		39.4%	1.3%	0%	2.1%	0%		3.4%	**-**
PHF	0.81	0.82	0.6	0		0.85	0.81	0.5	0.25	0		0.79	0.81	0.82	0.7	0		0.84	0.63	0	0.55	0		0.7	**-**
Heavy	2	21	1	0		24	0	0	0	0		0	2	27	1	0		30	1	0	4	0		5	**-**
Heavy %	2.4%	3.9%	8.3%	0%		3.8%	0%	0%	0%	0%		0%	15.4%	6.4%	7.1%	0%		6.7%	6.7%	0%	16.7%	0%		12.8%	**-**
Lights	82	511	11	0		604	13	4	2	0		19	11	390	13	0		414	14	0	20	0		34	**-**
Lights %	97.6%	96.1%	91.7%	0%		96.2%	100%	100%	100%	0%		100%	84.6%	93.1%	92.9%	0%		92.8%	93.3%	0%	83.3%	0%		87.2%	**-**
Single-Unit Trucks	0	10	0	0		10	0	0	0	0		0	0	11	1	0		12	0	0	3	0		3	**-**
Single-Unit Trucks %	0%	1.9%	0%	0%		1.6%	0%	0%	0%	0%		0%	0%	2.6%	7.1%	0%		2.7%	0%	0%	12.5%	0%		7.7%	**-**
Buses	2	5	1	0		8	0	0	0	0		0	2	13	0	0		15	1	0	0	0		1	**-**
Buses %	2.4%	0.9%	8.3%	0%		1.3%	0%	0%	0%	0%		0%	15.4%	3.1%	0%	0%		3.4%	6.7%	0%	0%	0%		2.6%	**-**
Articulated Trucks	0	6	0	0		6	0	0	0	0		0	0	3	0	0		3	0	0	1	0		1	**-**
Articulated Trucks %	0%	1.1%	0%	0%		1%	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.7%	0%	0%	4.2%	0%		2.6%	**-**
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	**-**
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.5%	0%	0%		0.4%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	2	-	-	-	-	-	26	-	-	-	-	-	6	-	-	-	-	-	2	-	**-**
Pedestrians%	-	-	-	-	5.1%		-	-	-	-	66.7%		-	-	-	-	15.4%		-	-	-	-	5.1%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	2.6%		-	-	-	-	2.6%		-	-	-	-	2.6%		**-**

Peak Hour: 04:00 PM - 05:00 PM Weather: Overcast Clouds (15.97 °C)

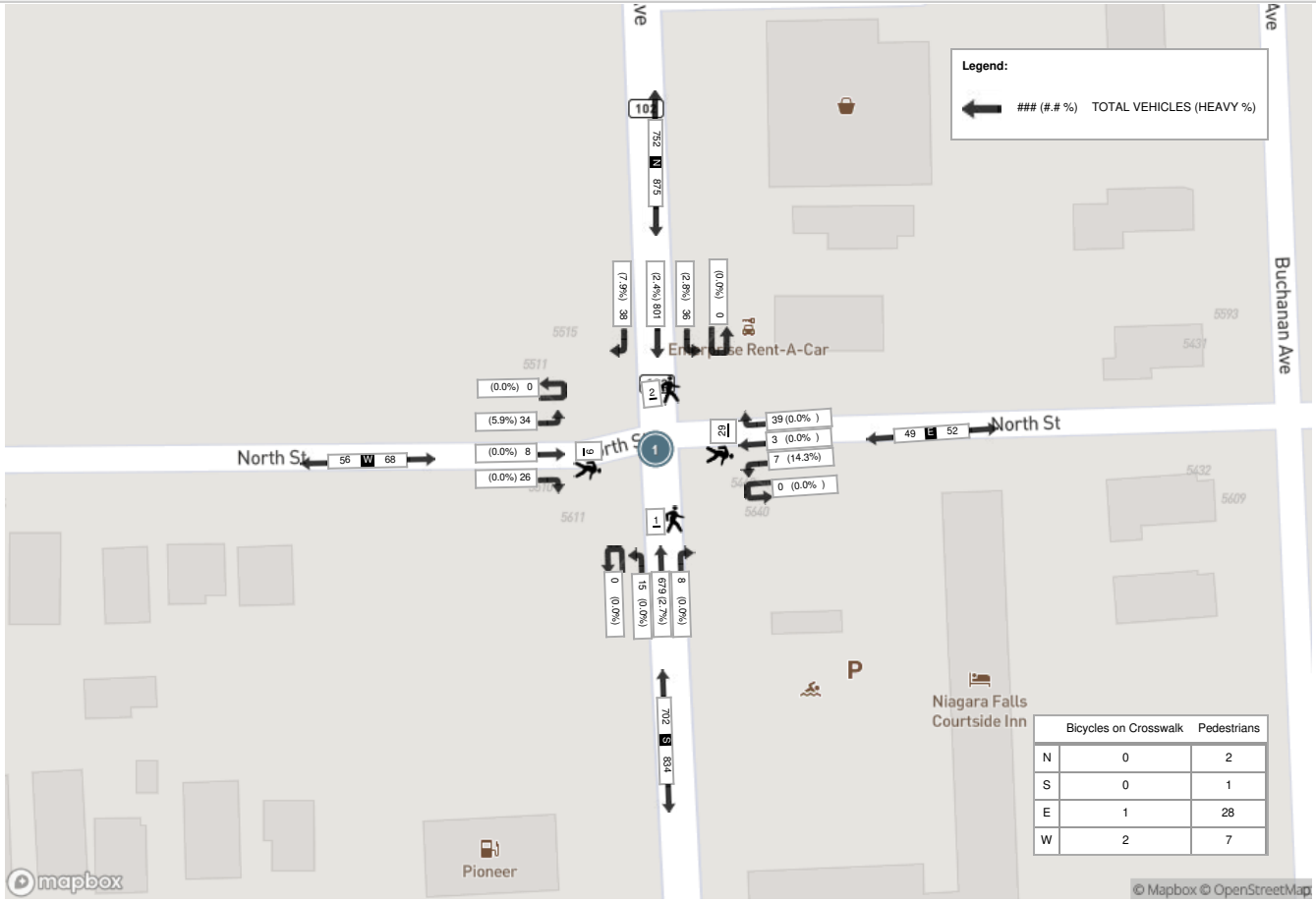
Start Time	N Approach STANLEY AVE						E Approach NORTH ST						S Approach STANLEY AVE						W Approach NORTH ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:00:00	13	197	10	0	0	220	14	1	4	0	5	19	1	179	4	0	0	184	10	2	15	0	4	27	450
16:15:00	4	196	6	0	0	206	8	1	1	0	9	10	4	172	1	0	1	177	5	2	10	0	1	17	410
16:30:00	11	206	10	0	2	227	9	0	1	0	4	10	2	170	6	0	0	178	5	2	4	0	3	11	426
16:45:00	10	202	10	0	0	222	8	1	1	0	11	10	1	158	4	0	0	163	6	2	5	0	1	13	408
Grand Total	38	801	36	0	2	875	39	3	7	0	29	49	8	679	15	0	1	702	26	8	34	0	9	68	**1694**
Approach%	4.3%	91.5%	4.1%	0%		-	79.6%	6.1%	14.3%	0%		-	1.1%	96.7%	2.1%	0%		-	38.2%	11.8%	50%	0%		-	**-**
Totals %	2.2%	47.3%	2.1%	0%		51.7%	2.3%	0.2%	0.4%	0%		2.9%	0.5%	40.1%	0.9%	0%		41.4%	1.5%	0.5%	2%	0%		4%	**-**
PHF	0.73	0.97	0.9	0		0.96	0.7	0.75	0.44	0		0.64	0.5	0.95	0.63	0		0.95	0.65	1	0.57	0		0.63	**-**
Heavy	3	19	1	0		23	0	0	1	0		1	0	18	0	0		18	0	0	2	0		2	**-**
Heavy %	7.9%	2.4%	2.8%	0%		2.6%	0%	0%	14.3%	0%		2%	0%	2.7%	0%	0%		2.6%	0%	0%	5.9%	0%		2.9%	**-**
Lights	35	782	35	0		852	39	2	6	0		47	8	659	15	0		682	26	8	32	0		66	**-**
Lights %	92.1%	97.6%	97.2%	0%		97.4%	100%	66.7%	85.7%	0%		95.9%	100%	97.1%	100%	0%		97.2%	100%	100%	94.1%	0%		97.1%	**-**
Single-Unit Trucks	3	9	1	0		13	0	0	0	0		0	0	6	0	0		6	0	0	2	0		2	**-**
Single-Unit Trucks %	7.9%	1.1%	2.8%	0%		1.5%	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.9%	0%	0%	5.9%	0%		2.9%	**-**
Buses	0	9	0	0		9	0	0	1	0		1	0	10	0	0		10	0	0	0	0		0	**-**
Buses %	0%	1.1%	0%	0%		1%	0%	0%	14.3%	0%		2%	0%	1.5%	0%	0%		1.4%	0%	0%	0%	0%		0%	**-**
Articulated Trucks	0	1	0	0		1	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	**-**
Articulated Trucks %	0%	0.1%	0%	0%		0.1%	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.3%	0%	0%	0%	0%		0%	**-**
Bicycles on Road	0	0	0	0		0	0	1	0	0		1	0	2	0	0		2	0	0	0	0		0	**-**
Bicycles on Road %	0%	0%	0%	0%		0%	0%	33.3%	0%	0%		2%	0%	0.3%	0%	0%		0.3%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	2	-	-	-	-	-	28	-	-	-	-	-	1	-	-	-	-	-	7	-	**-**
Pedestrians%	-	-	-	-	4.9%		-	-	-	-	68.3%		-	-	-	-	2.4%		-	-	-	-	17.1%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	2	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	2.4%		-	-	-	-	0%		-	-	-	-	4.9%		**-**

Peak Hour: 08:00 AM - 09:00 AM **Weather: Clear Sky (1.22 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	2
S	1	6
E	1	26
W	1	2

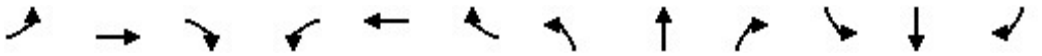
Peak Hour: 04:00 PM - 05:00 PM **Weather: Overcast Clouds (15.97 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	2
S	0	1
E	1	28
W	2	7

Appendix D

Synchro Outputs

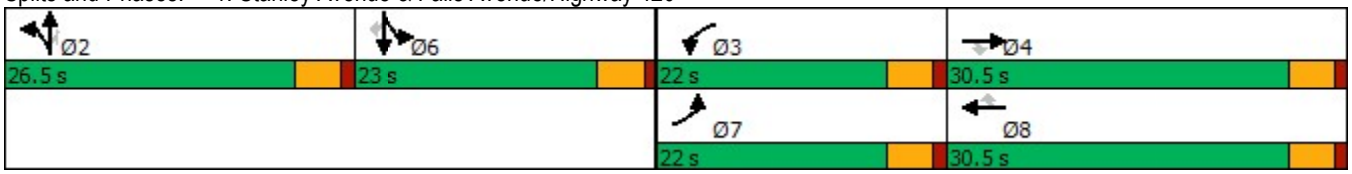


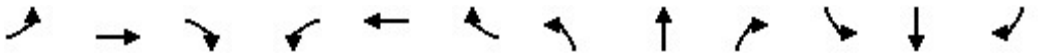
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	349	482	443	35	225	31	242	200	43	30	215	235
Future Volume (vph)	349	482	443	35	225	31	242	200	43	30	215	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.98	1.00		0.98	0.98	0.99	0.95	0.97		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.984		0.950		
Satd. Flow (prot)	3404	5142	1570	1772	3510	1526	1552	3215	1484	1825	3510	1585
Flt Permitted	0.950			0.950			0.950	0.984		0.950		
Satd. Flow (perm)	3364	5142	1536	1763	3510	1493	1516	3191	1405	1776	3510	1516
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			492			112			112			261
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.6			321.9			327.8			140.2	
Travel Time (s)		16.1			19.3			23.6			10.1	
Confl. Peds. (#/hr)	6		6	6		6	19		25	25		19
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	2%	4%	3%	4%	7%	7%	7%	10%	0%	4%	3%
Adj. Flow (vph)	388	536	492	39	250	34	269	222	48	33	239	261
Shared Lane Traffic (%)							40%					
Lane Group Flow (vph)	388	536	492	39	250	34	161	330	48	33	239	261
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	15.0	15.0	15.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.0	30.5	30.5	22.0	30.5	30.5	26.5	26.5	26.5	23.0	23.0	23.0
Total Split (%)	21.6%	29.9%	29.9%	21.6%	29.9%	29.9%	26.0%	26.0%	26.0%	22.5%	22.5%	22.5%
Maximum Green (s)	17.5	26.0	26.0	17.5	26.0	26.0	22.0	22.0	22.0	18.5	18.5	18.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
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
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	14.7	38.1	38.1	7.5	26.3	26.3	17.2	17.2	17.2	12.4	12.4	12.4
Actuated g/C Ratio	0.17	0.43	0.43	0.08	0.30	0.30	0.19	0.19	0.19	0.14	0.14	0.14
v/c Ratio	0.69	0.24	0.52	0.26	0.24	0.07	0.54	0.53	0.13	0.13	0.49	0.60
Control Delay	42.6	19.0	4.6	44.9	26.3	0.2	40.7	36.4	0.8	35.7	39.3	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.6	19.0	4.6	44.9	26.3	0.2	40.7	36.4	0.8	35.7	39.3	11.0
LOS	D	B	A	D	C	A	D	D	A	D	D	B
Approach Delay		20.5			25.8			34.5			25.2	
Approach LOS		C			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 102			
Actuated Cycle Length: 88.7			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 24.7		Intersection LOS: C	
Intersection Capacity Utilization 64.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Stanley Avenue & Falls Avenue/Highway 420





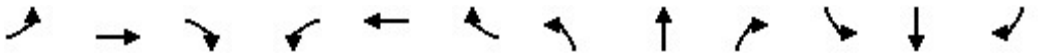
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	388	536	492	39	250	34	161	330	48	33	239	261
v/c Ratio	0.69	0.24	0.52	0.26	0.24	0.07	0.54	0.53	0.13	0.13	0.49	0.60
Control Delay	42.6	19.0	4.6	44.9	26.3	0.2	40.7	36.4	0.8	35.7	39.3	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.6	19.0	4.6	44.9	26.3	0.2	40.7	36.4	0.8	35.7	39.3	11.0
Queue Length 50th (m)	31.1	21.6	0.0	6.2	16.3	0.0	27.2	27.8	0.0	4.9	19.4	0.0
Queue Length 95th (m)	52.5	38.3	22.4	17.1	31.5	0.0	52.6	45.5	0.0	13.7	33.5	20.9
Internal Link Dist (m)		243.6			297.9			303.8			116.2	
Turn Bay Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Base Capacity (vph)	678	2206	939	352	1039	520	388	805	435	384	739	525
Starvation Cap Reductn	0	0	0	0	0	0	0	0	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	0.57	0.24	0.52	0.11	0.24	0.07	0.41	0.41	0.11	0.09	0.32	0.50

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	349	482	443	35	225	31	242	200	43	30	215	235
Future Volume (vph)	349	482	443	35	225	31	242	200	43	30	215	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.95	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	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	0.98	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3404	5142	1537	1772	3510	1494	1552	3215	1412	1825	3510	1522
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3404	5142	1537	1772	3510	1494	1552	3215	1412	1825	3510	1522
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	388	536	492	39	250	34	269	222	48	33	239	261
RTOR Reduction (vph)	0	0	285	0	0	23	0	0	39	0	0	225
Lane Group Flow (vph)	388	536	207	39	250	11	161	330	9	33	239	36
Confl. Peds. (#/hr)	6		6	6		6	19		25	25		19
Heavy Vehicles (%)	4%	2%	4%	3%	4%	7%	7%	7%	10%	0%	4%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	14.7	38.1	38.1	4.9	28.3	28.3	17.2	17.2	17.2	12.4	12.4	12.4
Effective Green, g (s)	14.7	38.1	38.1	4.9	28.3	28.3	17.2	17.2	17.2	12.4	12.4	12.4
Actuated g/C Ratio	0.16	0.42	0.42	0.05	0.31	0.31	0.19	0.19	0.19	0.14	0.14	0.14
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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)	552	2162	646	95	1096	466	294	610	268	249	480	208
v/s Ratio Prot	c0.11	0.10		0.02	0.07		c0.10	0.10		0.02	c0.07	
v/s Ratio Perm			c0.13			0.01			0.01			0.02
v/c Ratio	0.70	0.25	0.32	0.41	0.23	0.02	0.55	0.54	0.03	0.13	0.50	0.17
Uniform Delay, d1	35.9	17.0	17.6	41.5	23.1	21.6	33.2	33.1	29.9	34.4	36.2	34.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	0.3	1.3	2.9	0.5	0.1	2.1	1.0	0.1	0.2	0.8	0.4
Delay (s)	39.9	17.3	18.9	44.3	23.5	21.7	35.3	34.1	30.0	34.6	37.0	35.0
Level of Service	D	B	B	D	C	C	D	C	C	C	D	C
Approach Delay (s)		24.0			25.9			34.1			35.9	
Approach LOS		C			C			C			D	

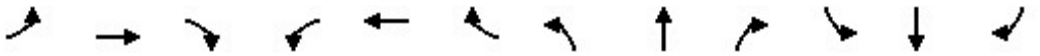
Intersection Summary			
HCM 2000 Control Delay	28.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	90.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	0	15	2	4	13	14	419	13	12	532	84
Future Volume (vph)	24	0	15	2	4	13	14	419	13	12	532	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.948			0.904			0.995			0.980	
Flt Protected		0.970			0.995		0.950			0.950		
Satd. Flow (prot)	0	1600	0	0	1728	0	1706	3417	0	1690	3449	0
Flt Permitted		0.970			0.995		0.950			0.950		
Satd. Flow (perm)	0	1600	0	0	1728	0	1706	3417	0	1690	3449	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		267.3			32.0			68.3			327.8	
Travel Time (s)		19.2			2.3			4.9			23.6	
Confl. Peds. (#/hr)	2		7	7		2	3		27	27		3
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	17%	0%	0%	0%	0%	0%	7%	6%	15%	8%	4%	2%
Adj. Flow (vph)	27	0	17	2	4	15	16	471	15	13	598	94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	44	0	0	21	0	16	486	0	13	692	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

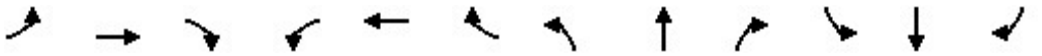
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	0	15	2	4	13	14	419	13	12	532	84
Future Volume (Veh/h)	24	0	15	2	4	13	14	419	13	12	532	84
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	27	0	17	2	4	15	16	471	15	13	598	94
Pedestrians		3			27			7			2	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			3			1			0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)											328	
pX, platoon unblocked												
vC, conflicting volume	960	1219	356	886	1258	272	695			513		
vC1, stage 1 conf vol	674	674		538	538							
vC2, stage 2 conf vol	286	545		349	721							
vCu, unblocked vol	960	1219	356	886	1258	272	695			513		
tC, single (s)	7.8	6.5	6.9	7.5	6.5	6.9	4.2			4.3		
tC, 2 stage (s)	6.8	5.5		6.5	5.5							
tF (s)	3.7	4.0	3.3	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	92	100	97	100	99	98	98			99		
cM capacity (veh/h)	339	359	640	412	344	711	861			981		

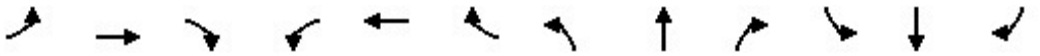
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	44	21	16	314	172	13	399	293
Volume Left	27	2	16	0	0	13	0	0
Volume Right	17	15	0	0	15	0	0	94
cSH	414	559	861	1700	1700	981	1700	1700
Volume to Capacity	0.11	0.04	0.02	0.18	0.10	0.01	0.23	0.17
Queue Length 95th (m)	2.7	0.9	0.4	0.0	0.0	0.3	0.0	0.0
Control Delay (s)	14.7	11.7	9.3	0.0	0.0	8.7	0.0	0.0
Lane LOS	B	B	A			A		
Approach Delay (s)	14.7	11.7	0.3			0.2		
Approach LOS	B	B						

Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	33.8%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	7	8	1	15	0	2	1	2	0	5	2
Future Volume (vph)	5	7	8	1	15	0	2	1	2	0	5	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.944						0.942			0.959	
Flt Protected		0.988			0.998			0.979				
Satd. Flow (prot)	0	1548	0	0	1797	0	0	1772	0	0	1616	0
Flt Permitted		0.988			0.998			0.979				
Satd. Flow (perm)	0	1548	0	0	1797	0	0	1772	0	0	1616	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		67.1			164.6			117.1			111.1	
Travel Time (s)		4.8			11.9			8.4			8.0	
Confl. Peds. (#/hr)	5					5	5		5	5		5
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles (%)	0%	0%	38%	0%	7%	0%	0%	0%	0%	0%	20%	0%
Adj. Flow (vph)	7	10	12	1	22	0	3	1	3	0	7	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	29	0	0	23	0	0	7	0	0	10	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

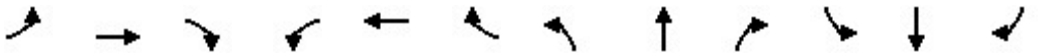
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	7	8	1	15	0	2	1	2	0	5	2
Future Volume (Veh/h)	5	7	8	1	15	0	2	1	2	0	5	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Hourly flow rate (vph)	7	10	12	1	22	0	3	1	3	0	7	3
Pedestrians		5			5						5	
Lane Width (m)		3.7			3.7						3.7	
Walking Speed (m/s)		1.1			1.1						1.1	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	27			22			66	59	21	68	65	32
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	27			22			66	59	21	68	65	32
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.2	3.3
p0 queue free %	100			100			100	100	100	100	99	100
cM capacity (veh/h)	1592			1607			913	828	1057	911	784	1037

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	29	23	7	10
Volume Left	7	1	3	0
Volume Right	12	0	3	3
cSH	1592	1607	954	846
Volume to Capacity	0.00	0.00	0.01	0.01
Queue Length 95th (m)	0.1	0.0	0.2	0.3
Control Delay (s)	1.8	0.3	8.8	9.3
Lane LOS	A	A	A	A
Approach Delay (s)	1.8	0.3	8.8	9.3
Approach LOS			A	A

Intersection Summary				
Average Delay	3.1			
Intersection Capacity Utilization	16.4%	ICU Level of Service	A	
Analysis Period (min)	15			

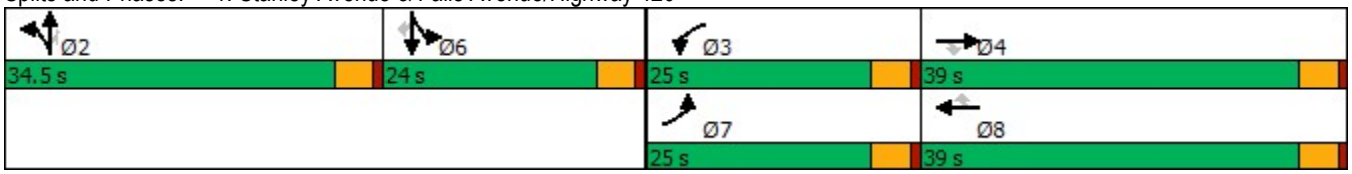


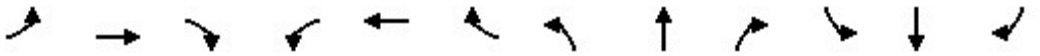
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	347	494	533	75	620	53	460	287	44	47	314	367
Future Volume (vph)	347	494	533	75	620	53	460	287	44	47	314	367
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Ped Bike Factor	0.98		0.97	0.99		0.96	0.97	0.99	0.91	0.96		0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.979		0.950		
Satd. Flow (prot)	3404	5193	1585	1772	3579	1633	1612	3342	1555	1825	3614	1601
Flt Permitted	0.950			0.950			0.950	0.979		0.950		
Satd. Flow (perm)	3347	5193	1541	1758	3579	1574	1568	3302	1421	1757	3614	1514
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			544			94			94			231
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.6			321.9			327.8			140.2	
Travel Time (s)		16.1			19.3			23.6			10.1	
Confl. Peds. (#/hr)	12		8	8		12	21		37	37		21
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	1%	3%	3%	2%	0%	3%	2%	5%	0%	1%	2%
Adj. Flow (vph)	354	504	544	77	633	54	469	293	45	48	320	374
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	354	504	544	77	633	54	249	513	45	48	320	374
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	25.0	39.0	39.0	25.0	39.0	39.0	34.5	34.5	34.5	24.0	24.0	24.0
Total Split (%)	20.4%	31.8%	31.8%	20.4%	31.8%	31.8%	28.2%	28.2%	28.2%	19.6%	19.6%	19.6%
Maximum Green (s)	20.5	34.5	34.5	20.5	34.5	34.5	30.0	30.0	30.0	19.5	19.5	19.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
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
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	16.5	43.8	43.8	10.3	35.0	35.0	24.1	24.1	24.1	16.7	16.7	16.7
Actuated g/C Ratio	0.15	0.40	0.40	0.09	0.32	0.32	0.22	0.22	0.22	0.15	0.15	0.15
v/c Ratio	0.70	0.24	0.58	0.47	0.56	0.10	0.71	0.70	0.12	0.17	0.59	0.88
Control Delay	53.6	25.5	5.3	59.5	35.6	1.7	52.6	46.0	0.6	44.8	49.4	41.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.6	25.5	5.3	59.5	35.6	1.7	52.6	46.0	0.6	44.8	49.4	41.0
LOS	D	C	A	E	D	A	D	D	A	D	D	D
Approach Delay		24.7			35.6			45.5			44.9	
Approach LOS		C			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 122.5			
Actuated Cycle Length: 110.5			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 35.5		Intersection LOS: D	
Intersection Capacity Utilization 68.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Stanley Avenue & Falls Avenue/Highway 420

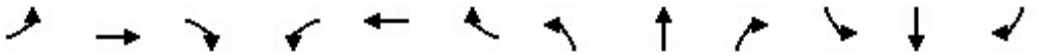




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	354	504	544	77	633	54	249	513	45	48	320	374
v/c Ratio	0.70	0.24	0.58	0.47	0.56	0.10	0.71	0.70	0.12	0.17	0.59	0.88
Control Delay	53.6	25.5	5.3	59.5	35.6	1.7	52.6	46.0	0.6	44.8	49.4	41.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.6	25.5	5.3	59.5	35.6	1.7	52.6	46.0	0.6	44.8	49.4	41.0
Queue Length 50th (m)	39.2	28.9	0.0	16.7	63.1	0.0	56.8	58.4	0.0	9.3	34.6	31.9
Queue Length 95th (m)	56.9	42.6	25.9	32.7	89.5	2.5	90.1	80.0	0.2	21.5	52.8	#87.1
Internal Link Dist (m)		243.6			297.9			303.8			116.2	
Turn Bay Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Base Capacity (vph)	639	2059	939	333	1132	562	443	919	459	326	646	460
Starvation Cap Reductn	0	0	0	0	0	0	0	0	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	0.55	0.24	0.58	0.23	0.56	0.10	0.56	0.56	0.10	0.15	0.50	0.81

Intersection Summary

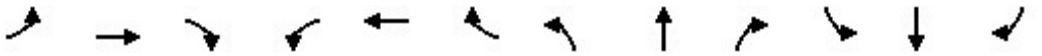
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	347	494	533	75	620	53	460	287	44	47	314	367
Future Volume (vph)	347	494	533	75	620	53	460	287	44	47	314	367
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.92	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	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	0.98	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3404	5193	1543	1772	3579	1578	1612	3342	1432	1825	3614	1521
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3404	5193	1543	1772	3579	1578	1612	3342	1432	1825	3614	1521
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	354	504	544	77	633	54	469	293	45	48	320	374
RTOR Reduction (vph)	0	0	330	0	0	37	0	0	35	0	0	196
Lane Group Flow (vph)	354	504	214	77	633	17	249	513	10	48	320	178
Confl. Peds. (#/hr)	12		8	8		12	21		37	37		21
Heavy Vehicles (%)	4%	1%	3%	3%	2%	0%	3%	2%	5%	0%	1%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	16.5	43.8	43.8	8.7	36.0	36.0	24.1	24.1	24.1	16.7	16.7	16.7
Effective Green, g (s)	16.5	43.8	43.8	8.7	36.0	36.0	24.1	24.1	24.1	16.7	16.7	16.7
Actuated g/C Ratio	0.15	0.39	0.39	0.08	0.32	0.32	0.22	0.22	0.22	0.15	0.15	0.15
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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)	504	2043	607	138	1157	510	349	723	310	273	542	228
v/s Ratio Prot	c0.10	0.10		0.04	c0.18		c0.15	0.15		0.03	0.09	
v/s Ratio Perm			0.14			0.01			0.01			c0.12
v/c Ratio	0.70	0.25	0.35	0.56	0.55	0.03	0.71	0.71	0.03	0.18	0.59	0.78
Uniform Delay, d1	45.1	22.7	23.8	49.4	30.9	25.8	40.4	40.4	34.4	41.3	44.1	45.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.4	0.3	1.6	4.8	1.9	0.1	6.8	3.2	0.0	0.3	1.7	15.4
Delay (s)	49.5	23.0	25.4	54.3	32.8	25.9	47.2	43.6	34.4	41.6	45.8	60.9
Level of Service	D	C	C	D	C	C	D	D	C	D	D	E
Approach Delay (s)		30.6			34.5			44.2			53.2	
Approach LOS		C			C			D			D	

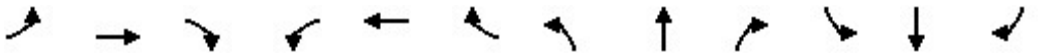
Intersection Summary			
HCM 2000 Control Delay	38.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	111.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	8	26	7	3	39	15	679	8	36	801	38
Future Volume (vph)	34	8	26	7	3	39	15	679	8	36	801	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.948			0.891			0.998			0.993	
Flt Protected		0.976			0.993		0.950			0.950		
Satd. Flow (prot)	0	1726	0	0	1668	0	1825	3538	0	1772	3544	0
Flt Permitted		0.976			0.993		0.950			0.950		
Satd. Flow (perm)	0	1726	0	0	1668	0	1825	3538	0	1772	3544	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		267.3			32.0			68.3			327.8	
Travel Time (s)		19.2			2.3			4.9			23.6	
Confl. Peds. (#/hr)	2		1	1		2	9		29	29		9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	6%	0%	0%	14%	0%	0%	0%	3%	0%	3%	2%	8%
Adj. Flow (vph)	36	9	28	7	3	41	16	722	9	38	852	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	73	0	0	51	0	16	731	0	38	892	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.0%		ICU Level of Service A	
Analysis Period (min) 15			



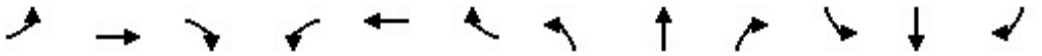
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	8	26	7	3	39	15	679	8	36	801	38
Future Volume (Veh/h)	34	8	26	7	3	39	15	679	8	36	801	38
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	36	9	28	7	3	41	16	722	9	38	852	40
Pedestrians		9			29			1			2	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			3			0			0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)											328	
pX, platoon unblocked	0.95	0.95	0.95	0.95	0.95		0.95					
vC, conflicting volume	1394	1749	456	1323	1764	396	901			760		
vC1, stage 1 conf vol	957	957		788	788							
vC2, stage 2 conf vol	438	792		536	977							
vCu, unblocked vol	1314	1686	328	1239	1702	396	796			760		
tC, single (s)	7.6	6.5	6.9	7.8	6.5	6.9	4.1			4.2		
tC, 2 stage (s)	6.6	5.5		6.8	5.5							
tF (s)	3.6	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	85	96	96	97	99	93	98			95		
cM capacity (veh/h)	246	250	635	264	251	590	788			817		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	73	51	16	481	250	38	568	324
Volume Left	36	7	16	0	0	38	0	0
Volume Right	28	41	0	0	9	0	0	40
cSH	323	472	788	1700	1700	817	1700	1700
Volume to Capacity	0.23	0.11	0.02	0.28	0.15	0.05	0.33	0.19
Queue Length 95th (m)	6.5	2.7	0.5	0.0	0.0	1.1	0.0	0.0
Control Delay (s)	19.4	13.5	9.7	0.0	0.0	9.6	0.0	0.0
Lane LOS	C	B	A			A		
Approach Delay (s)	19.4	13.5	0.2			0.4		
Approach LOS	C	B						

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	47.0%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	25	12	1	26	1	9	8	3	2	18	3
Future Volume (vph)	6	25	12	1	26	1	9	8	3	2	18	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.963			0.996			0.980			0.983	
Flt Protected		0.993			0.999			0.978			0.995	
Satd. Flow (prot)	0	1795	0	0	1796	0	0	1749	0	0	1879	0
Flt Permitted		0.993			0.999			0.978			0.995	
Satd. Flow (perm)	0	1795	0	0	1796	0	0	1749	0	0	1879	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		67.1			164.6			117.1			111.1	
Travel Time (s)		4.8			11.9			8.4			8.0	
Confl. Peds. (#/hr)	8		4	4		8	8		2	2		8
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Heavy Vehicles (%)	0%	4%	0%	0%	4%	100%	0%	13%	0%	0%	0%	0%
Adj. Flow (vph)	8	34	16	1	36	1	12	11	4	3	25	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	58	0	0	38	0	0	27	0	0	32	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

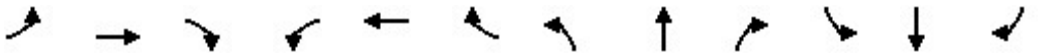
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	25	12	1	26	1	9	8	3	2	18	3
Future Volume (Veh/h)	6	25	12	1	26	1	9	8	3	2	18	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	8	34	16	1	36	1	12	11	4	3	25	4
Pedestrians		8			2			4			8	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			0			0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	45			54			125	109	48	116	116	52
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	45			54			125	109	48	116	116	52
tC, single (s)	4.1			4.1			7.1	6.6	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.1	3.3	3.5	4.0	3.3
p0 queue free %	99			100			99	99	100	100	97	100
cM capacity (veh/h)	1564			1558			808	748	1021	833	764	1005

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	58	38	27	32
Volume Left	8	1	12	3
Volume Right	16	1	4	4
cSH	1564	1558	807	794
Volume to Capacity	0.01	0.00	0.03	0.04
Queue Length 95th (m)	0.1	0.0	0.8	1.0
Control Delay (s)	1.0	0.2	9.6	9.7
Lane LOS	A	A	A	A
Approach Delay (s)	1.0	0.2	9.6	9.7
Approach LOS			A	A

Intersection Summary				
Average Delay	4.1			
Intersection Capacity Utilization	18.3%	ICU Level of Service	A	
Analysis Period (min)	15			

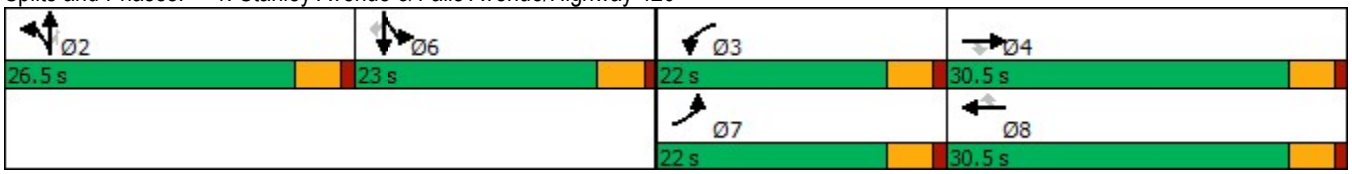


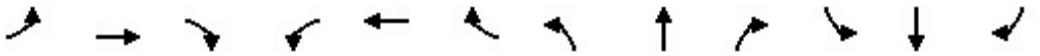
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	363	501	460	36	234	32	251	208	44	31	223	244
Future Volume (vph)	363	501	460	36	234	32	251	208	44	31	223	244
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.98	1.00		0.98	0.98	0.99	0.95	0.97		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.984		0.950		
Satd. Flow (prot)	3404	5142	1570	1772	3510	1526	1552	3215	1484	1825	3510	1585
Flt Permitted	0.950			0.950			0.950	0.984		0.950		
Satd. Flow (perm)	3364	5142	1536	1764	3510	1493	1517	3191	1405	1777	3510	1516
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			511			112			112			265
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.6			321.9			327.8			140.2	
Travel Time (s)		16.1			19.3			23.6			10.1	
Confl. Peds. (#/hr)	6		6	6		6	19		25	25		19
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	2%	4%	3%	4%	7%	7%	7%	10%	0%	4%	3%
Adj. Flow (vph)	403	557	511	40	260	36	279	231	49	34	248	271
Shared Lane Traffic (%)							40%					
Lane Group Flow (vph)	403	557	511	40	260	36	167	343	49	34	248	271
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	15.0	15.0	15.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.0	30.5	30.5	22.0	30.5	30.5	26.5	26.5	26.5	23.0	23.0	23.0
Total Split (%)	21.6%	29.9%	29.9%	21.6%	29.9%	29.9%	26.0%	26.0%	26.0%	22.5%	22.5%	22.5%
Maximum Green (s)	17.5	26.0	26.0	17.5	26.0	26.0	22.0	22.0	22.0	18.5	18.5	18.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
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
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	14.9	38.3	38.3	7.6	26.2	26.2	17.4	17.4	17.4	12.7	12.7	12.7
Actuated g/C Ratio	0.17	0.43	0.43	0.09	0.29	0.29	0.19	0.19	0.19	0.14	0.14	0.14
v/c Ratio	0.71	0.25	0.54	0.27	0.25	0.07	0.55	0.55	0.13	0.13	0.50	0.61
Control Delay	43.6	19.3	4.7	45.2	26.7	0.2	41.4	36.9	0.8	35.8	39.6	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.6	19.3	4.7	45.2	26.7	0.2	41.4	36.9	0.8	35.8	39.6	11.7
LOS	D	B	A	D	C	A	D	D	A	D	D	B
Approach Delay		20.9			26.1			35.1			25.7	
Approach LOS		C			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 102			
Actuated Cycle Length: 89.4			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 25.1		Intersection LOS: C	
Intersection Capacity Utilization 64.6%		ICU Level of Service C	
Analysis Period (min) 15			

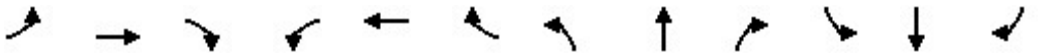
Splits and Phases: 1: Stanley Avenue & Falls Avenue/Highway 420





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	403	557	511	40	260	36	167	343	49	34	248	271
v/c Ratio	0.71	0.25	0.54	0.27	0.25	0.07	0.55	0.55	0.13	0.13	0.50	0.61
Control Delay	43.6	19.3	4.7	45.2	26.7	0.2	41.4	36.9	0.8	35.8	39.6	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.6	19.3	4.7	45.2	26.7	0.2	41.4	36.9	0.8	35.8	39.6	11.7
Queue Length 50th (m)	32.8	23.0	0.0	6.4	17.4	0.0	28.6	29.4	0.0	5.1	20.5	0.9
Queue Length 95th (m)	54.6	40.0	23.1	17.6	32.7	0.0	54.6	47.4	0.0	14.1	34.7	22.8
Internal Link Dist (m)		243.6			297.9			303.8			116.2	
Turn Bay Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Base Capacity (vph)	672	2200	949	350	1030	517	385	798	433	381	733	526
Starvation Cap Reductn	0	0	0	0	0	0	0	0	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	0.60	0.25	0.54	0.11	0.25	0.07	0.43	0.43	0.11	0.09	0.34	0.52

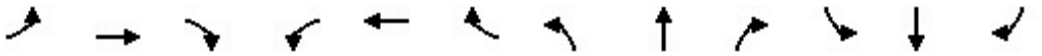
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	363	501	460	36	234	32	251	208	44	31	223	244
Future Volume (vph)	363	501	460	36	234	32	251	208	44	31	223	244
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.95	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	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	0.98	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3404	5142	1537	1772	3510	1494	1552	3215	1411	1825	3510	1521
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3404	5142	1537	1772	3510	1494	1552	3215	1411	1825	3510	1521
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	403	557	511	40	260	36	279	231	49	34	248	271
RTOR Reduction (vph)	0	0	297	0	0	25	0	0	40	0	0	228
Lane Group Flow (vph)	403	557	214	40	260	11	167	343	9	34	248	43
Confl. Peds. (#/hr)	6		6	6		6	19		25	25		19
Heavy Vehicles (%)	4%	2%	4%	3%	4%	7%	7%	7%	10%	0%	4%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	14.9	38.3	38.3	4.9	28.3	28.3	17.4	17.4	17.4	12.7	12.7	12.7
Effective Green, g (s)	14.9	38.3	38.3	4.9	28.3	28.3	17.4	17.4	17.4	12.7	12.7	12.7
Actuated g/C Ratio	0.16	0.42	0.42	0.05	0.31	0.31	0.19	0.19	0.19	0.14	0.14	0.14
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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)	555	2157	644	95	1087	463	295	612	268	253	488	211
v/s Ratio Prot	c0.12	0.11		0.02	0.07		c0.11	0.11		0.02	c0.07	
v/s Ratio Perm			c0.14			0.01			0.01			0.03
v/c Ratio	0.73	0.26	0.33	0.42	0.24	0.02	0.57	0.56	0.03	0.13	0.51	0.20
Uniform Delay, d1	36.3	17.3	17.9	41.8	23.5	21.9	33.5	33.5	30.1	34.5	36.4	34.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.7	0.3	1.4	3.0	0.5	0.1	2.5	1.2	0.1	0.2	0.8	0.5
Delay (s)	41.0	17.5	19.3	44.8	24.0	22.0	36.0	34.7	30.2	34.7	37.2	35.3
Level of Service	D	B	B	D	C	C	D	C	C	C	D	D
Approach Delay (s)		24.6			26.3			34.7			36.1	
Approach LOS		C			C			C			D	

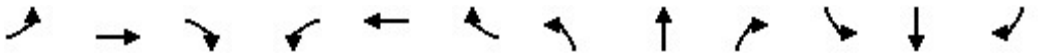
Intersection Summary			
HCM 2000 Control Delay	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	91.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	0	15	2	4	13	14	435	13	12	553	87
Future Volume (vph)	24	0	15	2	4	13	14	435	13	12	553	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.948			0.904			0.996			0.980	
Flt Protected		0.970			0.995		0.950			0.950		
Satd. Flow (prot)	0	1600	0	0	1728	0	1706	3421	0	1690	3449	0
Flt Permitted		0.970			0.995		0.950			0.950		
Satd. Flow (perm)	0	1600	0	0	1728	0	1706	3421	0	1690	3449	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		267.3			32.0			68.3			327.8	
Travel Time (s)		19.2			2.3			4.9			23.6	
Confl. Peds. (#/hr)	2		7	7		2	3		27	27		3
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	17%	0%	0%	0%	0%	0%	7%	6%	15%	8%	4%	2%
Adj. Flow (vph)	27	0	17	2	4	15	16	489	15	13	621	98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	44	0	0	21	0	16	504	0	13	719	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

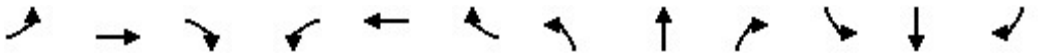
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	0	15	2	4	13	14	435	13	12	553	87
Future Volume (Veh/h)	24	0	15	2	4	13	14	435	13	12	553	87
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	27	0	17	2	4	15	16	489	15	13	621	98
Pedestrians		3			27			7			2	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			3			1			0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)											328	
pX, platoon unblocked												
vC, conflicting volume	994	1262	370	916	1304	281	722			531		
vC1, stage 1 conf vol	699	699		556	556							
vC2, stage 2 conf vol	296	563		360	748							
vCu, unblocked vol	994	1262	370	916	1304	281	722			531		
tC, single (s)	7.8	6.5	6.9	7.5	6.5	6.9	4.2			4.3		
tC, 2 stage (s)	6.8	5.5		6.5	5.5							
tF (s)	3.7	4.0	3.3	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	92	100	97	100	99	98	98			99		
cM capacity (veh/h)	327	349	627	401	334	702	841			966		

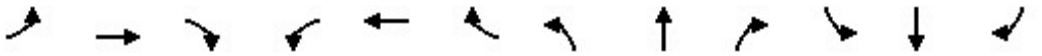
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	44	21	16	326	178	13	414	305
Volume Left	27	2	16	0	0	13	0	0
Volume Right	17	15	0	0	15	0	0	98
cSH	401	548	841	1700	1700	966	1700	1700
Volume to Capacity	0.11	0.04	0.02	0.19	0.10	0.01	0.24	0.18
Queue Length 95th (m)	2.8	0.9	0.4	0.0	0.0	0.3	0.0	0.0
Control Delay (s)	15.1	11.8	9.4	0.0	0.0	8.8	0.0	0.0
Lane LOS	C	B	A			A		
Approach Delay (s)	15.1	11.8	0.3			0.2		
Approach LOS	C	B						

Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	34.5%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	7	8	1	15	0	2	1	2	0	5	2
Future Volume (vph)	5	7	8	1	15	0	2	1	2	0	5	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.944						0.942			0.959	
Flt Protected		0.988			0.998			0.979				
Satd. Flow (prot)	0	1548	0	0	1797	0	0	1772	0	0	1616	0
Flt Permitted		0.988			0.998			0.979				
Satd. Flow (perm)	0	1548	0	0	1797	0	0	1772	0	0	1616	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		67.1			164.6			117.1			111.1	
Travel Time (s)		4.8			11.9			8.4			8.0	
Confl. Peds. (#/hr)	5					5	5		5	5		5
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles (%)	0%	0%	38%	0%	7%	0%	0%	0%	0%	0%	20%	0%
Adj. Flow (vph)	7	10	12	1	22	0	3	1	3	0	7	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	29	0	0	23	0	0	7	0	0	10	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

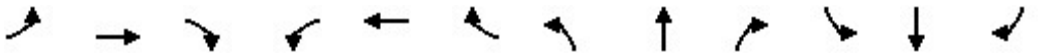
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	7	8	1	15	0	2	1	2	0	5	2
Future Volume (Veh/h)	5	7	8	1	15	0	2	1	2	0	5	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Hourly flow rate (vph)	7	10	12	1	22	0	3	1	3	0	7	3
Pedestrians		5			5						5	
Lane Width (m)		3.7			3.7						3.7	
Walking Speed (m/s)		1.1			1.1						1.1	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	27			22			66	59	21	68	65	32
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	27			22			66	59	21	68	65	32
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.2	3.3
p0 queue free %	100			100			100	100	100	100	99	100
cM capacity (veh/h)	1592			1607			913	828	1057	911	784	1037

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	29	23	7	10
Volume Left	7	1	3	0
Volume Right	12	0	3	3
cSH	1592	1607	954	846
Volume to Capacity	0.00	0.00	0.01	0.01
Queue Length 95th (m)	0.1	0.0	0.2	0.3
Control Delay (s)	1.8	0.3	8.8	9.3
Lane LOS	A	A	A	A
Approach Delay (s)	1.8	0.3	8.8	9.3
Approach LOS			A	A

Intersection Summary				
Average Delay	3.1			
Intersection Capacity Utilization	16.4%	ICU Level of Service	A	
Analysis Period (min)	15			

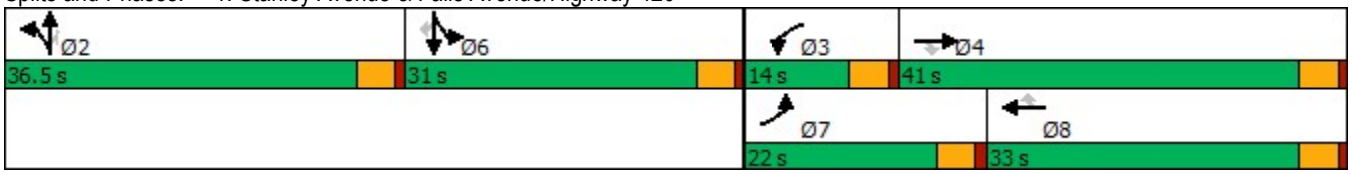


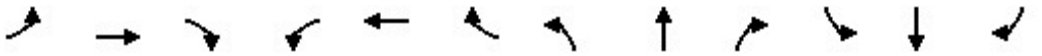
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	361	513	554	78	645	55	478	298	45	48	326	381
Future Volume (vph)	361	513	554	78	645	55	478	298	45	48	326	381
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Ped Bike Factor	0.98		0.97	0.99		0.96	0.97	0.99	0.91	0.96		0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.979		0.950		
Satd. Flow (prot)	3404	5193	1585	1772	3579	1633	1612	3342	1555	1825	3614	1601
Flt Permitted	0.950			0.950			0.950	0.979		0.950		
Satd. Flow (perm)	3349	5193	1541	1758	3579	1574	1569	3303	1421	1759	3614	1514
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			565			134			134			240
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.6			321.9			327.8			140.2	
Travel Time (s)		16.1			19.3			23.6			10.1	
Confl. Peds. (#/hr)	12		8	8		12	21		37	37		21
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	1%	3%	3%	2%	0%	3%	2%	5%	0%	1%	2%
Adj. Flow (vph)	368	523	565	80	658	56	488	304	46	49	333	389
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	368	523	565	80	658	56	259	533	46	49	333	389
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.0	41.0	41.0	14.0	33.0	33.0	36.5	36.5	36.5	31.0	31.0	31.0
Total Split (%)	18.0%	33.5%	33.5%	11.4%	26.9%	26.9%	29.8%	29.8%	29.8%	25.3%	25.3%	25.3%
Maximum Green (s)	17.5	36.5	36.5	9.5	28.5	28.5	32.0	32.0	32.0	26.5	26.5	26.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
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
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	15.6	39.3	39.3	8.7	29.6	29.6	24.5	24.5	24.5	18.9	18.9	18.9
Actuated g/C Ratio	0.15	0.37	0.37	0.08	0.28	0.28	0.23	0.23	0.23	0.18	0.18	0.18
v/c Ratio	0.74	0.27	0.61	0.56	0.66	0.11	0.70	0.70	0.11	0.15	0.52	0.84
Control Delay	55.5	27.6	6.0	66.6	40.8	0.4	49.8	43.6	0.5	39.6	43.5	33.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.5	27.6	6.0	66.6	40.8	0.4	49.8	43.6	0.5	39.6	43.5	33.3
LOS	E	C	A	E	D	A	D	D	A	D	D	C
Approach Delay		26.3			40.5			43.2			38.1	
Approach LOS		C			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 122.5			
Actuated Cycle Length: 107			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 35.2		Intersection LOS: D	
Intersection Capacity Utilization 70.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Stanley Avenue & Falls Avenue/Highway 420

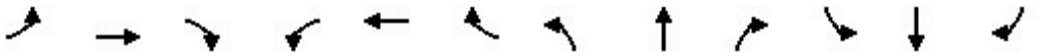




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	368	523	565	80	658	56	259	533	46	49	333	389
v/c Ratio	0.74	0.27	0.61	0.56	0.66	0.11	0.70	0.70	0.11	0.15	0.52	0.84
Control Delay	55.5	27.6	6.0	66.6	40.8	0.4	49.8	43.6	0.5	39.6	43.5	33.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.5	27.6	6.0	66.6	40.8	0.4	49.8	43.6	0.5	39.6	43.5	33.3
Queue Length 50th (m)	38.6	30.0	0.0	16.6	66.7	0.0	55.8	57.4	0.0	8.8	33.8	31.2
Queue Length 95th (m)	60.9	46.2	28.4	#37.7	100.4	0.0	91.9	81.3	0.0	20.1	50.8	72.4
Internal Link Dist (m)		243.6			297.9			303.8			116.2	
Turn Bay Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Base Capacity (vph)	568	1906	923	160	991	532	492	1020	526	461	913	562
Starvation Cap Reductn	0	0	0	0	0	0	0	0	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	0.65	0.27	0.61	0.50	0.66	0.11	0.53	0.52	0.09	0.11	0.36	0.69

Intersection Summary

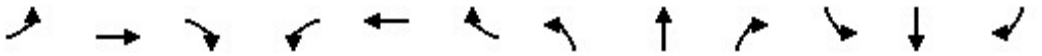
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	361	513	554	78	645	55	478	298	45	48	326	381
Future Volume (vph)	361	513	554	78	645	55	478	298	45	48	326	381
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.92	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	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	0.98	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3404	5193	1544	1772	3579	1579	1612	3342	1435	1825	3614	1523
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3404	5193	1544	1772	3579	1579	1612	3342	1435	1825	3614	1523
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	368	523	565	80	658	56	488	304	46	49	333	389
RTOR Reduction (vph)	0	0	359	0	0	40	0	0	36	0	0	198
Lane Group Flow (vph)	368	523	206	80	658	16	259	533	10	49	333	191
Confl. Peds. (#/hr)	12		8	8		12	21		37	37		21
Heavy Vehicles (%)	4%	1%	3%	3%	2%	0%	3%	2%	5%	0%	1%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	15.6	39.3	39.3	7.1	30.8	30.8	24.5	24.5	24.5	18.9	18.9	18.9
Effective Green, g (s)	15.6	39.3	39.3	7.1	30.8	30.8	24.5	24.5	24.5	18.9	18.9	18.9
Actuated g/C Ratio	0.14	0.36	0.36	0.07	0.29	0.29	0.23	0.23	0.23	0.18	0.18	0.18
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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)	492	1893	562	116	1022	451	366	759	326	319	633	267
v/s Ratio Prot	c0.11	0.10		0.05	c0.18		c0.16	0.16		0.03	0.09	
v/s Ratio Perm			0.13			0.01			0.01			c0.13
v/c Ratio	0.75	0.28	0.37	0.69	0.64	0.04	0.71	0.70	0.03	0.15	0.53	0.72
Uniform Delay, d1	44.2	24.2	25.1	49.3	33.7	27.8	38.4	38.3	32.4	37.7	40.4	41.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.1	0.4	1.8	15.7	3.1	0.1	6.1	3.0	0.0	0.2	0.8	8.8
Delay (s)	50.4	24.6	27.0	65.0	36.8	27.9	44.5	41.3	32.5	37.9	41.2	50.7
Level of Service	D	C	C	E	D	C	D	D	C	D	D	D
Approach Delay (s)		32.0			39.0			41.8			45.8	
Approach LOS		C			D			D			D	

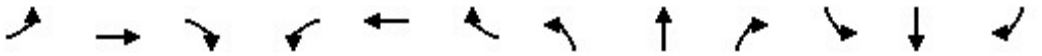
Intersection Summary			
HCM 2000 Control Delay	38.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	107.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	8	27	7	3	40	15	706	8	37	833	39
Future Volume (vph)	35	8	27	7	3	40	15	706	8	37	833	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.948			0.890			0.998			0.993	
Flt Protected		0.976			0.993		0.950			0.950		
Satd. Flow (prot)	0	1726	0	0	1667	0	1825	3538	0	1772	3544	0
Flt Permitted		0.976			0.993		0.950			0.950		
Satd. Flow (perm)	0	1726	0	0	1667	0	1825	3538	0	1772	3544	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		267.3			32.0			68.3			327.8	
Travel Time (s)		19.2			2.3			4.9			23.6	
Confl. Peds. (#/hr)	2		1	1		2	9		29	29		9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	6%	0%	0%	14%	0%	0%	0%	3%	0%	3%	2%	8%
Adj. Flow (vph)	37	9	29	7	3	43	16	751	9	39	886	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	75	0	0	53	0	16	760	0	39	927	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

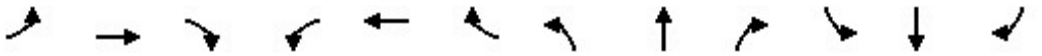
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.2%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	8	27	7	3	40	15	706	8	37	833	39
Future Volume (Veh/h)	35	8	27	7	3	40	15	706	8	37	833	39
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	37	9	29	7	3	43	16	751	9	39	886	41
Pedestrians		9			29			1			2	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			3			0			0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)											328	
pX, platoon unblocked	0.95	0.95	0.95	0.95	0.95		0.95					
vC, conflicting volume	1448	1814	474	1372	1830	411	936			789		
vC1, stage 1 conf vol	994	994		816	816							
vC2, stage 2 conf vol	454	821		556	1014							
vCu, unblocked vol	1370	1756	348	1291	1772	411	833			789		
tC, single (s)	7.6	6.5	6.9	7.8	6.5	6.9	4.1			4.2		
tC, 2 stage (s)	6.6	5.5		6.8	5.5							
tF (s)	3.6	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	84	96	95	97	99	93	98			95		
cM capacity (veh/h)	233	238	617	252	239	578	763			797		

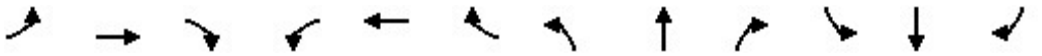
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	75	53	16	501	259	39	591	336
Volume Left	37	7	16	0	0	39	0	0
Volume Right	29	43	0	0	9	0	0	41
cSH	308	462	763	1700	1700	797	1700	1700
Volume to Capacity	0.24	0.11	0.02	0.29	0.15	0.05	0.35	0.20
Queue Length 95th (m)	7.1	2.9	0.5	0.0	0.0	1.2	0.0	0.0
Control Delay (s)	20.4	13.8	9.8	0.0	0.0	9.8	0.0	0.0
Lane LOS	C	B	A			A		
Approach Delay (s)	20.4	13.8	0.2			0.4		
Approach LOS	C	B						

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	48.2%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	26	12	1	27	1	9	8	3	2	18	3
Future Volume (vph)	6	26	12	1	27	1	9	8	3	2	18	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.964			0.997			0.980			0.983	
Flt Protected		0.993			0.999			0.978			0.995	
Satd. Flow (prot)	0	1796	0	0	1799	0	0	1749	0	0	1879	0
Flt Permitted		0.993			0.999			0.978			0.995	
Satd. Flow (perm)	0	1796	0	0	1799	0	0	1749	0	0	1879	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		67.1			164.6			117.1			111.1	
Travel Time (s)		4.8			11.9			8.4			8.0	
Confl. Peds. (#/hr)	8		4	4		8	8		2	2		8
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Heavy Vehicles (%)	0%	4%	0%	0%	4%	100%	0%	13%	0%	0%	0%	0%
Adj. Flow (vph)	8	36	16	1	37	1	12	11	4	3	25	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	60	0	0	39	0	0	27	0	0	32	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

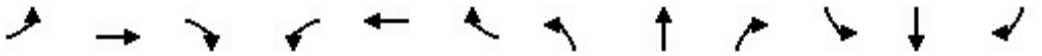
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	26	12	1	27	1	9	8	3	2	18	3
Future Volume (Veh/h)	6	26	12	1	27	1	9	8	3	2	18	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	8	36	16	1	37	1	12	11	4	3	25	4
Pedestrians		8			2			4			8	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			0			0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	46			56			128	112	50	119	120	54
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	46			56			128	112	50	119	120	54
tC, single (s)	4.1			4.1			7.1	6.6	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.1	3.3	3.5	4.0	3.3
p0 queue free %	99			100			99	99	100	100	97	100
cM capacity (veh/h)	1562			1556			805	745	1018	829	761	1004

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	60	39	27	32
Volume Left	8	1	12	3
Volume Right	16	1	4	4
cSH	1562	1556	803	791
Volume to Capacity	0.01	0.00	0.03	0.04
Queue Length 95th (m)	0.1	0.0	0.8	1.0
Control Delay (s)	1.0	0.2	9.6	9.7
Lane LOS	A	A	A	A
Approach Delay (s)	1.0	0.2	9.6	9.7
Approach LOS			A	A

Intersection Summary				
Average Delay	4.1			
Intersection Capacity Utilization	18.4%	ICU Level of Service	A	
Analysis Period (min)	15			

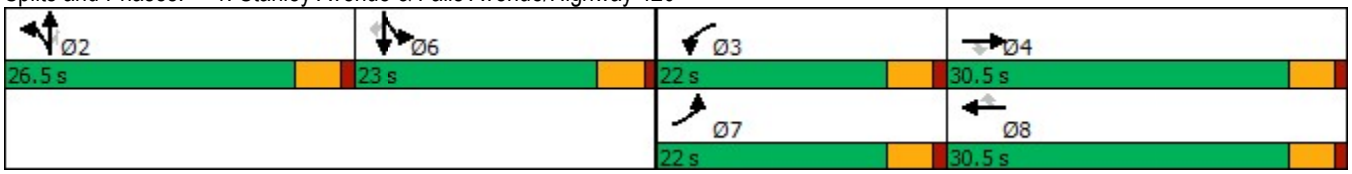


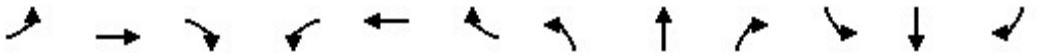
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	363	501	467	37	234	32	269	218	50	31	229	244
Future Volume (vph)	363	501	467	37	234	32	269	218	50	31	229	244
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.98	1.00		0.98	0.98	0.99	0.95	0.97		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.983		0.950		
Satd. Flow (prot)	3404	5142	1570	1772	3510	1526	1552	3212	1484	1825	3510	1585
Flt Permitted	0.950			0.950			0.950	0.983		0.950		
Satd. Flow (perm)	3364	5142	1536	1764	3510	1493	1517	3188	1405	1778	3510	1516
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			519			112			112			259
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.6			321.9			327.8			140.2	
Travel Time (s)		16.1			19.3			23.6			10.1	
Confl. Peds. (#/hr)	6		6	6		6	19		25	25		19
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	2%	4%	3%	4%	7%	7%	7%	10%	0%	4%	3%
Adj. Flow (vph)	403	557	519	41	260	36	299	242	56	34	254	271
Shared Lane Traffic (%)							41%					
Lane Group Flow (vph)	403	557	519	41	260	36	176	365	56	34	254	271
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	15.0	15.0	15.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.0	30.5	30.5	22.0	30.5	30.5	26.5	26.5	26.5	23.0	23.0	23.0
Total Split (%)	21.6%	29.9%	29.9%	21.6%	29.9%	29.9%	26.0%	26.0%	26.0%	22.5%	22.5%	22.5%
Maximum Green (s)	17.5	26.0	26.0	17.5	26.0	26.0	22.0	22.0	22.0	18.5	18.5	18.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
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
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	14.9	38.2	38.2	7.6	26.2	26.2	17.6	17.6	17.6	12.8	12.8	12.8
Actuated g/C Ratio	0.17	0.43	0.43	0.08	0.29	0.29	0.20	0.20	0.20	0.14	0.14	0.14
v/c Ratio	0.71	0.25	0.55	0.27	0.25	0.07	0.58	0.58	0.15	0.13	0.51	0.62
Control Delay	43.9	19.5	4.8	45.6	27.0	0.2	42.3	37.6	1.0	35.9	39.8	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.9	19.5	4.8	45.6	27.0	0.2	42.3	37.6	1.0	35.9	39.8	12.4
LOS	D	B	A	D	C	A	D	D	A	D	D	B
Approach Delay		21.0			26.4			35.5			26.3	
Approach LOS		C			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 102			
Actuated Cycle Length: 89.8			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 25.5		Intersection LOS: C	
Intersection Capacity Utilization 64.7%		ICU Level of Service C	
Analysis Period (min) 15			

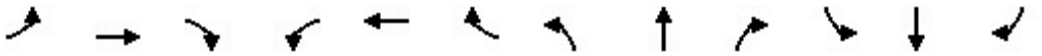
Splits and Phases: 1: Stanley Avenue & Falls Avenue/Highway 420





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	403	557	519	41	260	36	176	365	56	34	254	271
v/c Ratio	0.71	0.25	0.55	0.27	0.25	0.07	0.58	0.58	0.15	0.13	0.51	0.62
Control Delay	43.9	19.5	4.8	45.6	27.0	0.2	42.3	37.6	1.0	35.9	39.8	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.9	19.5	4.8	45.6	27.0	0.2	42.3	37.6	1.0	35.9	39.8	12.4
Queue Length 50th (m)	33.3	23.4	0.0	6.7	17.6	0.0	30.5	31.7	0.0	5.1	21.3	1.8
Queue Length 95th (m)	54.6	40.0	23.6	17.9	32.7	0.0	57.3	50.4	0.6	14.1	35.5	24.3
Internal Link Dist (m)		243.6			297.9			303.8			116.2	
Turn Bay Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Base Capacity (vph)	669	2188	952	348	1025	515	383	794	431	379	729	520
Starvation Cap Reductn	0	0	0	0	0	0	0	0	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	0.60	0.25	0.55	0.12	0.25	0.07	0.46	0.46	0.13	0.09	0.35	0.52

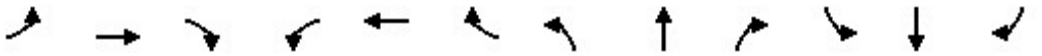
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	363	501	467	37	234	32	269	218	50	31	229	244
Future Volume (vph)	363	501	467	37	234	32	269	218	50	31	229	244
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.95	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	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	0.98	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3404	5142	1537	1772	3510	1494	1552	3214	1411	1825	3510	1521
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3404	5142	1537	1772	3510	1494	1552	3214	1411	1825	3510	1521
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	403	557	519	41	260	36	299	242	56	34	254	271
RTOR Reduction (vph)	0	0	303	0	0	25	0	0	45	0	0	223
Lane Group Flow (vph)	403	557	216	41	260	11	176	365	11	34	254	48
Confl. Peds. (#/hr)	6		6	6		6	19		25	25		19
Heavy Vehicles (%)	4%	2%	4%	3%	4%	7%	7%	7%	10%	0%	4%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	14.9	38.2	38.2	5.0	28.3	28.3	17.6	17.6	17.6	12.8	12.8	12.8
Effective Green, g (s)	14.9	38.2	38.2	5.0	28.3	28.3	17.6	17.6	17.6	12.8	12.8	12.8
Actuated g/C Ratio	0.16	0.42	0.42	0.05	0.31	0.31	0.19	0.19	0.19	0.14	0.14	0.14
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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)	553	2144	640	96	1084	461	298	617	271	255	490	212
v/s Ratio Prot	c0.12	0.11		0.02	0.07		0.11	c0.11		0.02	c0.07	
v/s Ratio Perm			c0.14			0.01			0.01			0.03
v/c Ratio	0.73	0.26	0.34	0.43	0.24	0.02	0.59	0.59	0.04	0.13	0.52	0.23
Uniform Delay, d1	36.4	17.5	18.1	41.9	23.6	22.0	33.7	33.7	30.1	34.5	36.5	35.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.8	0.3	1.4	3.0	0.5	0.1	3.1	1.5	0.1	0.2	0.9	0.5
Delay (s)	41.2	17.8	19.6	45.0	24.1	22.1	36.8	35.2	30.2	34.8	37.5	35.6
Level of Service	D	B	B	D	C	C	D	D	C	C	D	D
Approach Delay (s)		24.8			26.5			35.2			36.4	
Approach LOS		C			C			D			D	

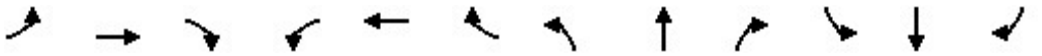
Intersection Summary			
HCM 2000 Control Delay	29.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	91.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	0	15	2	4	44	14	437	13	23	556	87
Future Volume (vph)	24	0	15	2	4	44	14	437	13	23	556	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.948			0.880			0.996			0.980	
Flt Protected		0.970			0.998		0.950			0.950		
Satd. Flow (prot)	0	1600	0	0	1687	0	1706	3421	0	1690	3449	0
Flt Permitted		0.970			0.998		0.950			0.950		
Satd. Flow (perm)	0	1600	0	0	1687	0	1706	3421	0	1690	3449	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		267.3			32.0			68.3			327.8	
Travel Time (s)		19.2			2.3			4.9			23.6	
Confl. Peds. (#/hr)	2		7	7		2	3		27	27		3
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	17%	0%	0%	0%	0%	0%	7%	6%	15%	8%	4%	2%
Adj. Flow (vph)	27	0	17	2	4	49	16	491	15	26	625	98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	44	0	0	55	0	16	506	0	26	723	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

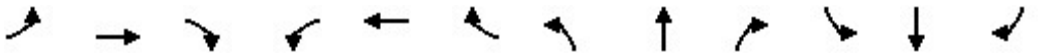
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	0	15	2	4	44	14	437	13	23	556	87
Future Volume (Veh/h)	24	0	15	2	4	44	14	437	13	23	556	87
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	27	0	17	2	4	49	16	491	15	26	625	98
Pedestrians		3			27			7			2	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			3			1			0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)											328	
pX, platoon unblocked												
vC, conflicting volume	1060	1294	372	946	1336	282	726			533		
vC1, stage 1 conf vol	729	729		558	558							
vC2, stage 2 conf vol	330	565		388	778							
vCu, unblocked vol	1060	1294	372	946	1336	282	726			533		
tC, single (s)	7.8	6.5	6.9	7.5	6.5	6.9	4.2			4.3		
tC, 2 stage (s)	6.8	5.5		6.5	5.5							
tF (s)	3.7	4.0	3.3	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	91	100	97	99	99	93	98			97		
cM capacity (veh/h)	301	335	625	391	322	701	838			964		

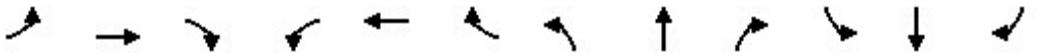
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	44	55	16	327	179	26	417	306
Volume Left	27	2	16	0	0	26	0	0
Volume Right	17	49	0	0	15	0	0	98
cSH	377	629	838	1700	1700	964	1700	1700
Volume to Capacity	0.12	0.09	0.02	0.19	0.11	0.03	0.25	0.18
Queue Length 95th (m)	3.0	2.2	0.4	0.0	0.0	0.6	0.0	0.0
Control Delay (s)	15.8	11.3	9.4	0.0	0.0	8.8	0.0	0.0
Lane LOS	C	B	A			A		
Approach Delay (s)	15.8	11.3	0.3			0.3		
Approach LOS	C	B						

Intersection Summary				
Average Delay	1.2			
Intersection Capacity Utilization	35.8%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	7	8	1	15	0	2	1	2	0	5	2
Future Volume (vph)	5	7	8	1	15	0	2	1	2	0	5	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.944						0.942			0.959	
Flt Protected		0.988			0.998			0.979				
Satd. Flow (prot)	0	1548	0	0	1797	0	0	1772	0	0	1616	0
Flt Permitted		0.988			0.998			0.979				
Satd. Flow (perm)	0	1548	0	0	1797	0	0	1772	0	0	1616	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		67.1			164.6			117.1			111.1	
Travel Time (s)		4.8			11.9			8.4			8.0	
Confl. Peds. (#/hr)	5					5	5		5	5		5
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles (%)	0%	0%	38%	0%	7%	0%	0%	0%	0%	0%	20%	0%
Adj. Flow (vph)	7	10	12	1	22	0	3	1	3	0	7	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	29	0	0	23	0	0	7	0	0	10	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	7	8	1	15	0	2	1	2	0	5	2
Future Volume (Veh/h)	5	7	8	1	15	0	2	1	2	0	5	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Hourly flow rate (vph)	7	10	12	1	22	0	3	1	3	0	7	3
Pedestrians		5			5						5	
Lane Width (m)		3.7			3.7						3.7	
Walking Speed (m/s)		1.1			1.1						1.1	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	27			22			66	59	21	68	65	32
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	27			22			66	59	21	68	65	32
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.2	3.3
p0 queue free %	100			100			100	100	100	100	99	100
cM capacity (veh/h)	1592			1607			913	828	1057	911	784	1037

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	29	23	7	10
Volume Left	7	1	3	0
Volume Right	12	0	3	3
cSH	1592	1607	954	846
Volume to Capacity	0.00	0.00	0.01	0.01
Queue Length 95th (m)	0.1	0.0	0.2	0.3
Control Delay (s)	1.8	0.3	8.8	9.3
Lane LOS	A	A	A	A
Approach Delay (s)	1.8	0.3	8.8	9.3
Approach LOS			A	A

Intersection Summary				
Average Delay	3.1			
Intersection Capacity Utilization	16.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	26	11	0	19	31	0
Future Volume (vph)	26	11	0	19	31	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.959					
Flt Protected					0.950	
Satd. Flow (prot)	1806	0	0	1883	1789	0
Flt Permitted					0.950	
Satd. Flow (perm)	1806	0	0	1883	1789	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	32.0			67.1	35.3	
Travel Time (s)	2.3			4.8	2.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	12	0	21	34	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	40	0	0	21	34	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	26	11	0	19	31	0
Future Volume (Veh/h)	26	11	0	19	31	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)	28	12	0	21	34	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			40		55	34
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			40		55	34
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		96	100
cM capacity (veh/h)			1570		953	1039

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	40	21	34
Volume Left	0	0	34
Volume Right	12	0	0
cSH	1700	1570	953
Volume to Capacity	0.02	0.00	0.04
Queue Length 95th (m)	0.0	0.0	0.8
Control Delay (s)	0.0	0.0	8.9
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.9
Approach LOS			A

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

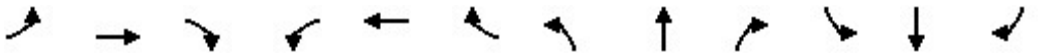
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	11	2	464	5	3	571
Future Volume (vph)	11	2	464	5	3	571
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	25.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.981		0.999			
Flt Protected	0.959				0.950	
Satd. Flow (prot)	1772	0	3575	0	1789	3579
Flt Permitted	0.959				0.950	
Satd. Flow (perm)	1772	0	3575	0	1789	3579
Link Speed (k/h)	48		50			50
Link Distance (m)	33.8		68.8			68.3
Travel Time (s)	2.5		5.0			4.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	2	504	5	3	621
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	0	509	0	3	621
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane			Yes			Yes
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	11	2	464	5	3	571
Future Volume (Veh/h)	11	2	464	5	3	571
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)	12	2	504	5	3	621
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (m)						396
pX, platoon unblocked						
vC, conflicting volume	823	254			509	
vC1, stage 1 conf vol	506					
vC2, stage 2 conf vol	316					
vCu, unblocked vol	823	254			509	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	100			100	
cM capacity (veh/h)	505	745			1052	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	14	336	173	3	310	310
Volume Left	12	0	0	3	0	0
Volume Right	2	0	5	0	0	0
cSH	529	1700	1700	1052	1700	1700
Volume to Capacity	0.03	0.20	0.10	0.00	0.18	0.18
Queue Length 95th (m)	0.6	0.0	0.0	0.1	0.0	0.0
Control Delay (s)	12.0	0.0	0.0	8.4	0.0	0.0
Lane LOS	B			A		
Approach Delay (s)	12.0	0.0		0.0		
Approach LOS	B					

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	25.8%	ICU Level of Service	A
Analysis Period (min)	15		

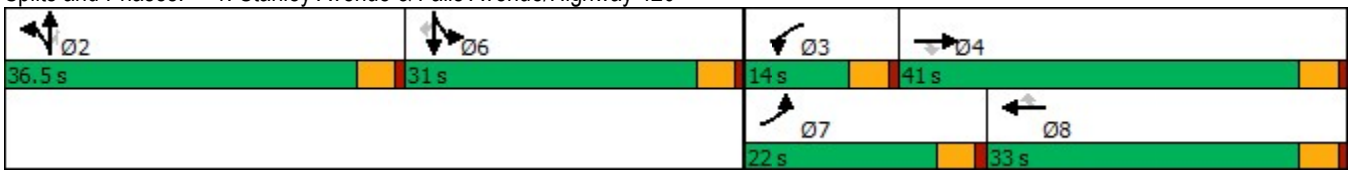


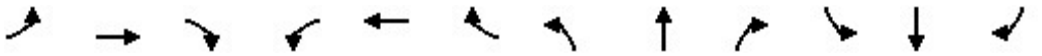
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	361	513	562	79	645	55	494	309	51	48	340	381
Future Volume (vph)	361	513	562	79	645	55	494	309	51	48	340	381
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Ped Bike Factor	0.98		0.97	0.99		0.96	0.97	0.99	0.91	0.96		0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.979		0.950		
Satd. Flow (prot)	3404	5193	1585	1772	3579	1633	1612	3342	1555	1825	3614	1601
Flt Permitted	0.950			0.950			0.950	0.979		0.950		
Satd. Flow (perm)	3349	5193	1541	1758	3579	1574	1570	3304	1421	1761	3614	1514
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			573			134			134			237
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.6			321.9			327.8			140.2	
Travel Time (s)		16.1			19.3			23.6			10.1	
Confl. Peds. (#/hr)	12		8	8		12	21		37	37		21
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	1%	3%	3%	2%	0%	3%	2%	5%	0%	1%	2%
Adj. Flow (vph)	368	523	573	81	658	56	504	315	52	49	347	389
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	368	523	573	81	658	56	267	552	52	49	347	389
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.0	41.0	41.0	14.0	33.0	33.0	36.5	36.5	36.5	31.0	31.0	31.0
Total Split (%)	18.0%	33.5%	33.5%	11.4%	26.9%	26.9%	29.8%	29.8%	29.8%	25.3%	25.3%	25.3%
Maximum Green (s)	17.5	36.5	36.5	9.5	28.5	28.5	32.0	32.0	32.0	26.5	26.5	26.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
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
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	15.7	39.2	39.2	8.7	29.5	29.5	25.1	25.1	25.1	19.4	19.4	19.4
Actuated g/C Ratio	0.15	0.36	0.36	0.08	0.27	0.27	0.23	0.23	0.23	0.18	0.18	0.18
v/c Ratio	0.75	0.28	0.62	0.57	0.67	0.11	0.71	0.71	0.12	0.15	0.54	0.83
Control Delay	56.1	28.1	6.0	67.6	41.5	0.4	50.5	44.2	0.6	39.7	43.9	33.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.1	28.1	6.0	67.6	41.5	0.4	50.5	44.2	0.6	39.7	43.9	33.4
LOS	E	C	A	E	D	A	D	D	A	D	D	C
Approach Delay		26.5			41.3			43.5			38.4	
Approach LOS		C			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 122.5			
Actuated Cycle Length: 108			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 35.7		Intersection LOS: D	
Intersection Capacity Utilization 70.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Stanley Avenue & Falls Avenue/Highway 420





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	368	523	573	81	658	56	267	552	52	49	347	389
v/c Ratio	0.75	0.28	0.62	0.57	0.67	0.11	0.71	0.71	0.12	0.15	0.54	0.83
Control Delay	56.1	28.1	6.0	67.6	41.5	0.4	50.5	44.2	0.6	39.7	43.9	33.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.1	28.1	6.0	67.6	41.5	0.4	50.5	44.2	0.6	39.7	43.9	33.4
Queue Length 50th (m)	38.9	30.4	0.0	17.0	67.7	0.0	58.2	60.1	0.0	8.9	35.7	32.2
Queue Length 95th (m)	60.9	46.2	28.4	#38.2	100.4	0.0	94.8	84.6	0.0	20.1	52.9	73.4
Internal Link Dist (m)		243.6			297.9			303.8			116.2	
Turn Bay Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Base Capacity (vph)	561	1885	924	158	977	527	486	1008	522	456	903	556
Starvation Cap Reductn	0	0	0	0	0	0	0	0	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	0.66	0.28	0.62	0.51	0.67	0.11	0.55	0.55	0.10	0.11	0.38	0.70

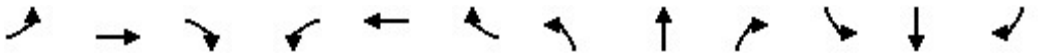
Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	361	513	562	79	645	55	494	309	51	48	340	381
Future Volume (vph)	361	513	562	79	645	55	494	309	51	48	340	381
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.92	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	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	0.98	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3404	5193	1544	1772	3579	1579	1612	3342	1434	1825	3614	1522
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3404	5193	1544	1772	3579	1579	1612	3342	1434	1825	3614	1522
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	368	523	573	81	658	56	504	315	52	49	347	389
RTOR Reduction (vph)	0	0	367	0	0	40	0	0	40	0	0	195
Lane Group Flow (vph)	368	523	206	81	658	16	267	552	12	49	347	194
Confl. Peds. (#/hr)	12		8	8		12	21		37	37		21
Heavy Vehicles (%)	4%	1%	3%	3%	2%	0%	3%	2%	5%	0%	1%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	15.7	39.2	39.2	7.1	30.6	30.6	25.1	25.1	25.1	19.4	19.4	19.4
Effective Green, g (s)	15.7	39.2	39.2	7.1	30.6	30.6	25.1	25.1	25.1	19.4	19.4	19.4
Actuated g/C Ratio	0.14	0.36	0.36	0.07	0.28	0.28	0.23	0.23	0.23	0.18	0.18	0.18
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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)	491	1871	556	115	1006	444	371	770	330	325	644	271
v/s Ratio Prot	c0.11	0.10		0.05	c0.18		c0.17	0.17		0.03	0.10	
v/s Ratio Perm			0.13			0.01			0.01			c0.13
v/c Ratio	0.75	0.28	0.37	0.70	0.65	0.04	0.72	0.72	0.04	0.15	0.54	0.72
Uniform Delay, d1	44.7	24.8	25.7	49.8	34.4	28.4	38.6	38.6	32.5	37.7	40.6	42.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.2	0.4	1.9	17.8	3.3	0.1	6.6	3.2	0.0	0.2	0.9	8.7
Delay (s)	50.9	25.1	27.6	67.6	37.8	28.5	45.2	41.8	32.5	38.0	41.5	50.8
Level of Service	D	C	C	E	D	C	D	D	C	D	D	D
Approach Delay (s)		32.6			40.1			42.3			45.9	
Approach LOS		C			D			D			D	

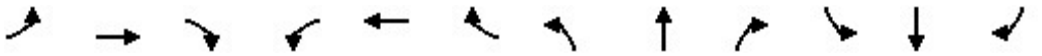
Intersection Summary			
HCM 2000 Control Delay	38.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	108.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	8	27	7	3	69	15	708	8	50	836	39
Future Volume (vph)	35	8	27	7	3	69	15	708	8	50	836	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.948			0.881			0.998			0.993	
Flt Protected		0.976			0.996		0.950			0.950		
Satd. Flow (prot)	0	1726	0	0	1666	0	1825	3538	0	1772	3544	0
Flt Permitted		0.976			0.996		0.950			0.950		
Satd. Flow (perm)	0	1726	0	0	1666	0	1825	3538	0	1772	3544	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		267.3			32.0			68.3			327.8	
Travel Time (s)		19.2			2.3			4.9			23.6	
Confl. Peds. (#/hr)	2		1	1		2	9		29	29		9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	6%	0%	0%	14%	0%	0%	0%	3%	0%	3%	2%	8%
Adj. Flow (vph)	37	9	29	7	3	73	16	753	9	53	889	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	75	0	0	83	0	16	762	0	53	930	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

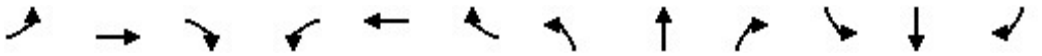
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	8	27	7	3	69	15	708	8	50	836	39
Future Volume (Veh/h)	35	8	27	7	3	69	15	708	8	50	836	39
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	37	9	29	7	3	73	16	753	9	53	889	41
Pedestrians		9			29			1			2	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			3			0			0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)											328	
pX, platoon unblocked	0.95	0.95	0.95	0.95	0.95		0.95					
vC, conflicting volume	1510	1848	475	1404	1864	412	939			791		
vC1, stage 1 conf vol	1024	1024		818	818							
vC2, stage 2 conf vol	485	823		585	1045							
vCu, unblocked vol	1431	1787	343	1320	1804	412	831			791		
tC, single (s)	7.6	6.5	6.9	7.8	6.5	6.9	4.1			4.2		
tC, 2 stage (s)	6.6	5.5		6.8	5.5							
tF (s)	3.6	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	83	96	95	97	99	87	98			93		
cM capacity (veh/h)	213	227	620	246	230	577	763			795		

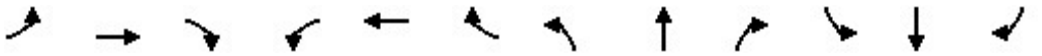
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	75	83	16	502	260	53	593	337
Volume Left	37	7	16	0	0	53	0	0
Volume Right	29	73	0	0	9	0	0	41
cSH	288	494	763	1700	1700	795	1700	1700
Volume to Capacity	0.26	0.17	0.02	0.30	0.15	0.07	0.35	0.20
Queue Length 95th (m)	7.7	4.6	0.5	0.0	0.0	1.6	0.0	0.0
Control Delay (s)	21.8	13.8	9.8	0.0	0.0	9.8	0.0	0.0
Lane LOS	C	B	A			A		
Approach Delay (s)	21.8	13.8	0.2			0.5		
Approach LOS	C	B						

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	48.5%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	26	12	1	27	1	9	8	3	2	18	3
Future Volume (vph)	6	26	12	1	27	1	9	8	3	2	18	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.964			0.997			0.980			0.983	
Flt Protected		0.993			0.999			0.978			0.995	
Satd. Flow (prot)	0	1796	0	0	1799	0	0	1749	0	0	1879	0
Flt Permitted		0.993			0.999			0.978			0.995	
Satd. Flow (perm)	0	1796	0	0	1799	0	0	1749	0	0	1879	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		67.1			164.6			117.1			111.1	
Travel Time (s)		4.8			11.9			8.4			8.0	
Confl. Peds. (#/hr)	8		4	4		8	8		2	2		8
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Heavy Vehicles (%)	0%	4%	0%	0%	4%	100%	0%	13%	0%	0%	0%	0%
Adj. Flow (vph)	8	36	16	1	37	1	12	11	4	3	25	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	60	0	0	39	0	0	27	0	0	32	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	26	12	1	27	1	9	8	3	2	18	3
Future Volume (Veh/h)	6	26	12	1	27	1	9	8	3	2	18	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	8	36	16	1	37	1	12	11	4	3	25	4
Pedestrians		8			2			4			8	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			0			0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	46			56			128	112	50	119	120	54
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	46			56			128	112	50	119	120	54
tC, single (s)	4.1			4.1			7.1	6.6	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.1	3.3	3.5	4.0	3.3
p0 queue free %	99			100			99	99	100	100	97	100
cM capacity (veh/h)	1562			1556			805	745	1018	829	761	1004

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	60	39	27	32
Volume Left	8	1	12	3
Volume Right	16	1	4	4
cSH	1562	1556	803	791
Volume to Capacity	0.01	0.00	0.03	0.04
Queue Length 95th (m)	0.1	0.0	0.8	1.0
Control Delay (s)	1.0	0.2	9.6	9.7
Lane LOS	A	A	A	A
Approach Delay (s)	1.0	0.2	9.6	9.7
Approach LOS			A	A

Intersection Summary				
Average Delay	4.1			
Intersection Capacity Utilization	18.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	54	13	0	50	29	0
Future Volume (vph)	54	13	0	50	29	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.974					
Flt Protected					0.950	
Satd. Flow (prot)	1834	0	0	1883	1789	0
Flt Permitted					0.950	
Satd. Flow (perm)	1834	0	0	1883	1789	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	32.0			67.1	35.3	
Travel Time (s)	2.3			4.8	2.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	59	14	0	54	32	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	73	0	0	54	32	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.6%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	54	13	0	50	29	0
Future Volume (Veh/h)	54	13	0	50	29	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)	59	14	0	54	32	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			73		120	66
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			73		120	66
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		96	100
cM capacity (veh/h)			1527		876	998

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	73	54	32
Volume Left	0	0	32
Volume Right	14	0	0
cSH	1700	1527	876
Volume to Capacity	0.04	0.00	0.04
Queue Length 95th (m)	0.0	0.0	0.9
Control Delay (s)	0.0	0.0	9.3
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.3
Approach LOS			A

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	13.6%	ICU Level of Service	A
Analysis Period (min)	15		

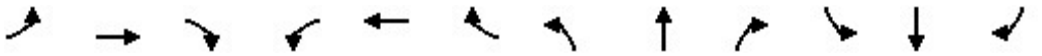
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	13	2	730	3	3	867
Future Volume (vph)	13	2	730	3	3	867
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	25.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.983		0.999			
Flt Protected	0.958				0.950	
Satd. Flow (prot)	1774	0	3575	0	1789	3579
Flt Permitted	0.958				0.950	
Satd. Flow (perm)	1774	0	3575	0	1789	3579
Link Speed (k/h)	48		50			50
Link Distance (m)	33.8		68.8			68.3
Travel Time (s)	2.5		5.0			4.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	2	793	3	3	942
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	796	0	3	942
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane			Yes			Yes
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.0%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	2	730	3	3	867
Future Volume (Veh/h)	13	2	730	3	3	867
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)	14	2	793	3	3	942
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (m)						396
pX, platoon unblocked	0.97					
vC, conflicting volume	1272	398			796	
vC1, stage 1 conf vol	794					
vC2, stage 2 conf vol	477					
vCu, unblocked vol	1226	398			796	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	100			100	
cM capacity (veh/h)	360	601			822	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	16	529	267	3	471	471
Volume Left	14	0	0	3	0	0
Volume Right	2	0	3	0	0	0
cSH	379	1700	1700	822	1700	1700
Volume to Capacity	0.04	0.31	0.16	0.00	0.28	0.28
Queue Length 95th (m)	1.0	0.0	0.0	0.1	0.0	0.0
Control Delay (s)	14.9	0.0	0.0	9.4	0.0	0.0
Lane LOS	B			A		
Approach Delay (s)	14.9	0.0		0.0		
Approach LOS	B					

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		

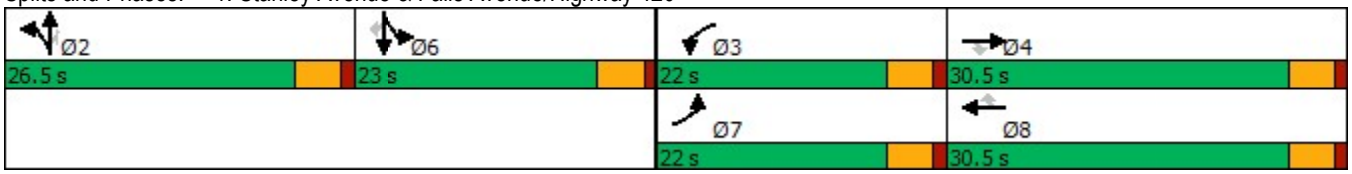


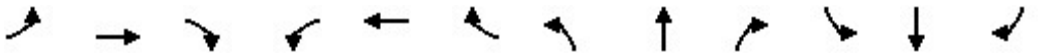
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	400	553	508	40	258	35	277	229	49	34	246	269
Future Volume (vph)	400	553	508	40	258	35	277	229	49	34	246	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.98	1.00		0.98	0.98	0.99	0.95	0.97		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.984		0.950		
Satd. Flow (prot)	3404	5142	1570	1772	3510	1526	1552	3215	1484	1825	3510	1585
Flt Permitted	0.950			0.950			0.950	0.984		0.950		
Satd. Flow (perm)	3366	5142	1536	1764	3510	1493	1518	3192	1405	1779	3510	1516
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			564			112			112			266
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.6			321.9			327.8			140.2	
Travel Time (s)		16.1			19.3			23.6			10.1	
Confl. Peds. (#/hr)	6		6	6		6	19		25	25		19
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	2%	4%	3%	4%	7%	7%	7%	10%	0%	4%	3%
Adj. Flow (vph)	444	614	564	44	287	39	308	254	54	38	273	299
Shared Lane Traffic (%)							40%					
Lane Group Flow (vph)	444	614	564	44	287	39	185	377	54	38	273	299
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	15.0	15.0	15.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.0	30.5	30.5	22.0	30.5	30.5	26.5	26.5	26.5	23.0	23.0	23.0
Total Split (%)	21.6%	29.9%	29.9%	21.6%	29.9%	29.9%	26.0%	26.0%	26.0%	22.5%	22.5%	22.5%
Maximum Green (s)	17.5	26.0	26.0	17.5	26.0	26.0	22.0	22.0	22.0	18.5	18.5	18.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
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
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	15.8	38.9	38.9	7.8	26.2	26.2	17.9	17.9	17.9	13.5	13.5	13.5
Actuated g/C Ratio	0.17	0.42	0.42	0.09	0.29	0.29	0.20	0.20	0.20	0.15	0.15	0.15
v/c Ratio	0.76	0.28	0.58	0.29	0.29	0.08	0.61	0.60	0.15	0.14	0.53	0.67
Control Delay	46.1	20.2	5.0	46.4	28.0	0.3	44.0	38.6	0.9	36.3	40.5	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.1	20.2	5.0	46.4	28.0	0.3	44.0	38.6	0.9	36.3	40.5	15.0
LOS	D	C	A	D	C	A	D	D	A	D	D	B
Approach Delay		22.0			27.3			36.9			27.7	
Approach LOS		C			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 102			
Actuated Cycle Length: 91.6			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 26.5		Intersection LOS: C	
Intersection Capacity Utilization 66.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Stanley Avenue & Falls Avenue/Highway 420

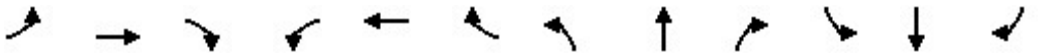




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	444	614	564	44	287	39	185	377	54	38	273	299
v/c Ratio	0.76	0.28	0.58	0.29	0.29	0.08	0.61	0.60	0.15	0.14	0.53	0.67
Control Delay	46.1	20.2	5.0	46.4	28.0	0.3	44.0	38.6	0.9	36.3	40.5	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.1	20.2	5.0	46.4	28.0	0.3	44.0	38.6	0.9	36.3	40.5	15.0
Queue Length 50th (m)	37.9	26.9	0.0	7.4	20.7	0.0	33.4	34.0	0.0	5.9	23.7	5.2
Queue Length 95th (m)	#60.5	44.3	24.7	18.7	35.8	0.0	60.2	52.0	0.2	15.2	37.8	30.5
Internal Link Dist (m)		243.6			297.9			303.8			116.2	
Turn Bay Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Base Capacity (vph)	656	2181	976	341	1005	507	375	779	425	371	714	520
Starvation Cap Reductn	0	0	0	0	0	0	0	0	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	0.68	0.28	0.58	0.13	0.29	0.08	0.49	0.48	0.13	0.10	0.38	0.57

Intersection Summary

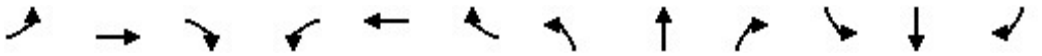
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	400	553	508	40	258	35	277	229	49	34	246	269
Future Volume (vph)	400	553	508	40	258	35	277	229	49	34	246	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.95	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	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	0.98	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3404	5142	1537	1772	3510	1494	1552	3215	1410	1825	3510	1520
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3404	5142	1537	1772	3510	1494	1552	3215	1410	1825	3510	1520
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	444	614	564	44	287	39	308	254	54	38	273	299
RTOR Reduction (vph)	0	0	329	0	0	27	0	0	44	0	0	228
Lane Group Flow (vph)	444	614	235	44	287	12	185	377	10	38	273	71
Confl. Peds. (#/hr)	6		6	6		6	19		25	25		19
Heavy Vehicles (%)	4%	2%	4%	3%	4%	7%	7%	7%	10%	0%	4%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	15.8	38.9	38.9	5.1	28.2	28.2	17.9	17.9	17.9	13.5	13.5	13.5
Effective Green, g (s)	15.8	38.9	38.9	5.1	28.2	28.2	17.9	17.9	17.9	13.5	13.5	13.5
Actuated g/C Ratio	0.17	0.42	0.42	0.05	0.30	0.30	0.19	0.19	0.19	0.14	0.14	0.14
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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)	575	2141	640	96	1059	451	297	616	270	263	507	219
v/s Ratio Prot	c0.13	0.12		0.02	0.08		c0.12	0.12		0.02	c0.08	
v/s Ratio Perm			c0.15			0.01			0.01			0.05
v/c Ratio	0.77	0.29	0.37	0.46	0.27	0.03	0.62	0.61	0.04	0.14	0.54	0.33
Uniform Delay, d1	37.1	18.1	18.8	42.8	24.8	22.9	34.7	34.6	30.7	34.9	37.1	35.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.4	0.3	1.6	3.4	0.6	0.1	4.0	1.8	0.1	0.3	1.1	0.9
Delay (s)	43.5	18.4	20.4	46.3	25.4	23.0	38.7	36.4	30.8	35.2	38.2	36.7
Level of Service	D	B	C	D	C	C	D	D	C	D	D	D
Approach Delay (s)		25.9			27.6			36.6			37.3	
Approach LOS		C			C			D			D	

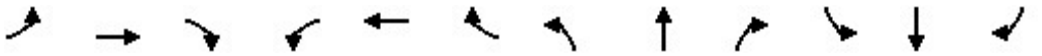
Intersection Summary			
HCM 2000 Control Delay	30.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	93.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	0	17	2	4	14	16	481	14	13	611	96
Future Volume (vph)	27	0	17	2	4	14	16	481	14	13	611	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.948			0.902			0.996			0.980	
Flt Protected		0.970			0.995		0.950			0.950		
Satd. Flow (prot)	0	1600	0	0	1724	0	1706	3421	0	1690	3449	0
Flt Permitted		0.970			0.995		0.950			0.950		
Satd. Flow (perm)	0	1600	0	0	1724	0	1706	3421	0	1690	3449	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		267.3			32.0			68.3			327.8	
Travel Time (s)		19.2			2.3			4.9			23.6	
Confl. Peds. (#/hr)	2		7	7		2	3		27	27		3
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	17%	0%	0%	0%	0%	0%	7%	6%	15%	8%	4%	2%
Adj. Flow (vph)	30	0	19	2	4	16	18	540	16	15	687	108
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	49	0	0	22	0	18	556	0	15	795	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

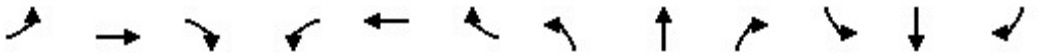
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	0	17	2	4	14	16	481	14	13	611	96
Future Volume (Veh/h)	27	0	17	2	4	14	16	481	14	13	611	96
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	30	0	19	2	4	16	18	540	16	15	687	108
Pedestrians		3			27			7			2	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			3			1			0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)											328	
pX, platoon unblocked	1.00	1.00	1.00	1.00	1.00		1.00					
vC, conflicting volume	1100	1393	408	1010	1439	307	798			583		
vC1, stage 1 conf vol	774	774		611	611							
vC2, stage 2 conf vol	326	619		400	828							
vCu, unblocked vol	1095	1389	401	1005	1435	307	792			583		
tC, single (s)	7.8	6.5	6.9	7.5	6.5	6.9	4.2			4.3		
tC, 2 stage (s)	6.8	5.5		6.5	5.5							
tF (s)	3.7	4.0	3.3	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	90	100	97	99	99	98	98			98		
cM capacity (veh/h)	293	319	597	368	303	675	788			922		

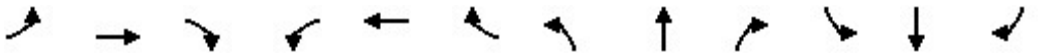
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	49	22	18	360	196	15	458	337
Volume Left	30	2	18	0	0	15	0	0
Volume Right	19	16	0	0	16	0	0	108
cSH	366	520	788	1700	1700	922	1700	1700
Volume to Capacity	0.13	0.04	0.02	0.21	0.12	0.02	0.27	0.20
Queue Length 95th (m)	3.5	1.0	0.5	0.0	0.0	0.4	0.0	0.0
Control Delay (s)	16.4	12.2	9.7	0.0	0.0	9.0	0.0	0.0
Lane LOS	C	B	A			A		
Approach Delay (s)	16.4	12.2	0.3			0.2		
Approach LOS	C	B						

Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	36.9%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	8	9	1	17	0	2	1	2	0	5	2
Future Volume (vph)	5	8	9	1	17	0	2	1	2	0	5	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.945						0.942			0.959	
Flt Protected		0.989			0.998			0.979				
Satd. Flow (prot)	0	1555	0	0	1796	0	0	1772	0	0	1616	0
Flt Permitted		0.989			0.998			0.979				
Satd. Flow (perm)	0	1555	0	0	1796	0	0	1772	0	0	1616	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		67.1			164.6			117.1			111.1	
Travel Time (s)		4.8			11.9			8.4			8.0	
Confl. Peds. (#/hr)	5					5	5		5	5		5
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles (%)	0%	0%	38%	0%	7%	0%	0%	0%	0%	0%	20%	0%
Adj. Flow (vph)	7	12	13	1	25	0	3	1	3	0	7	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	0	26	0	0	7	0	0	10	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

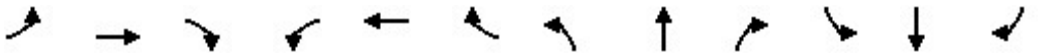
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	8	9	1	17	0	2	1	2	0	5	2
Future Volume (Veh/h)	5	8	9	1	17	0	2	1	2	0	5	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Hourly flow rate (vph)	7	12	13	1	25	0	3	1	3	0	7	3
Pedestrians		5			5						5	
Lane Width (m)		3.7			3.7						3.7	
Walking Speed (m/s)		1.1			1.1						1.1	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	30			25			71	64	24	73	71	35
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	30			25			71	64	24	73	71	35
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.2	3.3
p0 queue free %	100			100			100	100	100	100	99	100
cM capacity (veh/h)	1588			1603			905	822	1054	903	778	1033

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	32	26	7	10
Volume Left	7	1	3	0
Volume Right	13	0	3	3
cSH	1588	1603	949	841
Volume to Capacity	0.00	0.00	0.01	0.01
Queue Length 95th (m)	0.1	0.0	0.2	0.3
Control Delay (s)	1.6	0.3	8.8	9.3
Lane LOS	A	A	A	A
Approach Delay (s)	1.6	0.3	8.8	9.3
Approach LOS			A	A

Intersection Summary				
Average Delay	2.9			
Intersection Capacity Utilization	16.4%	ICU Level of Service	A	
Analysis Period (min)	15			

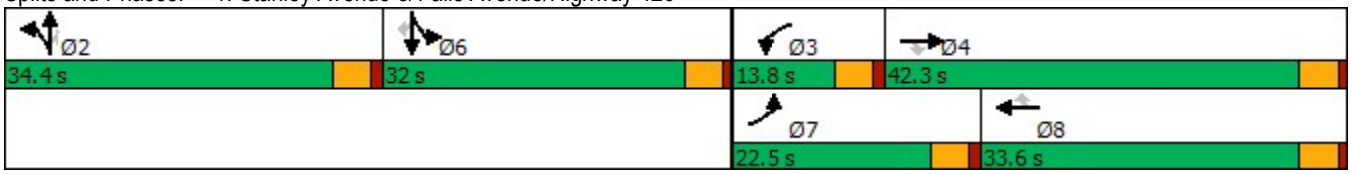


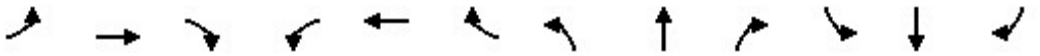
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	398	567	612	86	712	60	528	329	50	53	360	421
Future Volume (vph)	398	567	612	86	712	60	528	329	50	53	360	421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.97	0.99		0.96	0.97	0.99	0.91	0.97		0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.979		0.950		
Satd. Flow (prot)	3404	5193	1585	1772	3579	1633	1612	3342	1555	1825	3614	1601
Flt Permitted	0.950			0.950			0.950	0.979		0.950		
Satd. Flow (perm)	3354	5193	1541	1759	3579	1574	1571	3305	1421	1764	3614	1514
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			562			134			134			232
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.6			321.9			327.8			140.2	
Travel Time (s)		16.1			19.3			23.6			10.1	
Confl. Peds. (#/hr)	12		8	8		12	21		37	37		21
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	1%	3%	3%	2%	0%	3%	2%	5%	0%	1%	2%
Adj. Flow (vph)	406	579	624	88	727	61	539	336	51	54	367	430
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	406	579	624	88	727	61	286	589	51	54	367	430
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	42.3	42.3	13.8	33.6	33.6	34.4	34.4	34.4	32.0	32.0	32.0
Total Split (%)	18.4%	34.5%	34.5%	11.3%	27.4%	27.4%	28.1%	28.1%	28.1%	26.1%	26.1%	26.1%
Maximum Green (s)	18.0	37.8	37.8	9.3	29.1	29.1	29.9	29.9	29.9	27.5	27.5	27.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
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
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	16.7	38.2	38.2	8.8	30.4	30.4	26.0	26.0	26.0	22.6	22.6	22.6
Actuated g/C Ratio	0.15	0.34	0.34	0.08	0.27	0.27	0.23	0.23	0.23	0.20	0.20	0.20
v/c Ratio	0.81	0.33	0.70	0.64	0.76	0.12	0.78	0.77	0.12	0.15	0.51	0.88
Control Delay	62.0	30.6	9.6	75.2	46.6	0.5	57.5	49.3	0.6	39.2	43.5	41.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.0	30.6	9.6	75.2	46.6	0.5	57.5	49.3	0.6	39.2	43.5	41.2
LOS	E	C	A	E	D	A	E	D	A	D	D	D
Approach Delay		30.4			46.3			49.2			42.1	
Approach LOS		C			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 122.5			
Actuated Cycle Length: 113.9			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 40.1		Intersection LOS: D	
Intersection Capacity Utilization 75.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Stanley Avenue & Falls Avenue/Highway 420

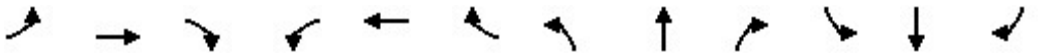




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	406	579	624	88	727	61	286	589	51	54	367	430
v/c Ratio	0.81	0.33	0.70	0.64	0.76	0.12	0.78	0.77	0.12	0.15	0.51	0.88
Control Delay	62.0	30.6	9.6	75.2	46.6	0.5	57.5	49.3	0.6	39.2	43.5	41.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.0	30.6	9.6	75.2	46.6	0.5	57.5	49.3	0.6	39.2	43.5	41.2
Queue Length 50th (m)	49.4	39.7	10.7	21.0	88.6	0.0	69.8	71.8	0.0	10.5	40.3	47.9
Queue Length 95th (m)	#71.4	50.5	51.8	#43.9	#117.2	0.0	104.3	93.0	0.0	21.6	55.2	#101.0
Internal Link Dist (m)		243.6			297.9			303.8			116.2	
Turn Bay Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Base Capacity (vph)	544	1743	890	146	953	518	428	887	476	445	882	545
Starvation Cap Reductn	0	0	0	0	0	0	0	0	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	0.75	0.33	0.70	0.60	0.76	0.12	0.67	0.66	0.11	0.12	0.42	0.79

Intersection Summary

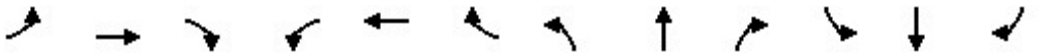
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	398	567	612	86	712	60	528	329	50	53	360	421
Future Volume (vph)	398	567	612	86	712	60	528	329	50	53	360	421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.92	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	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	0.98	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3404	5193	1543	1772	3579	1577	1612	3342	1430	1825	3614	1519
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3404	5193	1543	1772	3579	1577	1612	3342	1430	1825	3614	1519
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	406	579	624	88	727	61	539	336	51	54	367	430
RTOR Reduction (vph)	0	0	373	0	0	45	0	0	39	0	0	186
Lane Group Flow (vph)	406	579	251	88	727	16	286	589	12	54	367	244
Confl. Peds. (#/hr)	12		8	8		12	21		37	37		21
Heavy Vehicles (%)	4%	1%	3%	3%	2%	0%	3%	2%	5%	0%	1%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	16.7	38.3	38.3	8.8	30.4	30.4	26.0	26.0	26.0	22.6	22.6	22.6
Effective Green, g (s)	16.7	38.3	38.3	8.8	30.4	30.4	26.0	26.0	26.0	22.6	22.6	22.6
Actuated g/C Ratio	0.15	0.34	0.34	0.08	0.27	0.27	0.23	0.23	0.23	0.20	0.20	0.20
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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)	499	1749	519	137	956	421	368	764	327	362	718	301
v/s Ratio Prot	c0.12	0.11		0.05	c0.20		c0.18	0.18		0.03	0.10	
v/s Ratio Perm			0.16			0.01			0.01			c0.16
v/c Ratio	0.81	0.33	0.48	0.64	0.76	0.04	0.78	0.77	0.04	0.15	0.51	0.81
Uniform Delay, d1	47.0	28.1	29.9	50.9	38.3	30.8	41.1	41.1	34.1	37.6	40.6	43.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.8	0.5	3.2	9.9	5.7	0.2	9.9	4.8	0.0	0.2	0.6	15.2
Delay (s)	56.8	28.6	33.1	60.8	44.0	31.0	51.0	45.9	34.1	37.8	41.2	58.7
Level of Service	E	C	C	E	D	C	D	D	C	D	D	E
Approach Delay (s)		37.5			44.8			46.8			49.8	
Approach LOS		D			D			D			D	

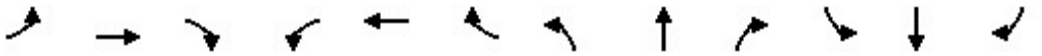
Intersection Summary			
HCM 2000 Control Delay	43.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	113.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	9	29	8	3	44	17	779	9	41	920	43
Future Volume (vph)	39	9	29	8	3	44	17	779	9	41	920	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.949			0.892			0.998			0.993	
Flt Protected		0.976			0.992		0.950			0.950		
Satd. Flow (prot)	0	1728	0	0	1664	0	1825	3538	0	1772	3544	0
Flt Permitted		0.976			0.992		0.950			0.950		
Satd. Flow (perm)	0	1728	0	0	1664	0	1825	3538	0	1772	3544	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		267.3			32.0			68.3			327.8	
Travel Time (s)		19.2			2.3			4.9			23.6	
Confl. Peds. (#/hr)	2		1	1		2	9		29	29		9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	6%	0%	0%	14%	0%	0%	0%	3%	0%	3%	2%	8%
Adj. Flow (vph)	41	10	31	9	3	47	18	829	10	44	979	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	82	0	0	59	0	18	839	0	44	1025	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

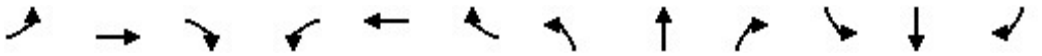
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	9	29	8	3	44	17	779	9	41	920	43
Future Volume (Veh/h)	39	9	29	8	3	44	17	779	9	41	920	43
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	41	10	31	9	3	47	18	829	10	44	979	46
Pedestrians		9			29			1			2	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			3			0			0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)											328	
pX, platoon unblocked	0.94	0.94	0.94	0.94	0.94		0.94					
vC, conflicting volume	1600	2003	522	1514	2021	450	1034			868		
vC1, stage 1 conf vol	1099	1099		899	899							
vC2, stage 2 conf vol	501	904		614	1122							
vCu, unblocked vol	1510	1939	363	1418	1958	450	907			868		
tC, single (s)	7.6	6.5	6.9	7.8	6.5	6.9	4.1			4.2		
tC, 2 stage (s)	6.6	5.5		6.8	5.5							
tF (s)	3.6	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	80	95	95	96	99	91	97			94		
cM capacity (veh/h)	201	209	595	222	210	545	706			744		

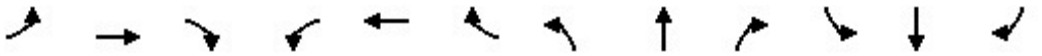
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	82	59	18	553	286	44	653	372
Volume Left	41	9	18	0	0	44	0	0
Volume Right	31	47	0	0	10	0	0	46
cSH	270	418	706	1700	1700	744	1700	1700
Volume to Capacity	0.30	0.14	0.03	0.33	0.17	0.06	0.38	0.22
Queue Length 95th (m)	9.4	3.7	0.6	0.0	0.0	1.4	0.0	0.0
Control Delay (s)	24.1	15.0	10.2	0.0	0.0	10.1	0.0	0.0
Lane LOS	C	C	B			B		
Approach Delay (s)	24.1	15.0	0.2			0.4		
Approach LOS	C	C						

Intersection Summary				
Average Delay	1.7			
Intersection Capacity Utilization	51.4%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	28	13	1	29	1	10	9	3	2	20	3
Future Volume (vph)	6	28	13	1	29	1	10	9	3	2	20	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.962			0.997			0.982			0.984	
Flt Protected		0.994			0.999			0.977			0.996	
Satd. Flow (prot)	0	1794	0	0	1802	0	0	1752	0	0	1883	0
Flt Permitted		0.994			0.999			0.977			0.996	
Satd. Flow (perm)	0	1794	0	0	1802	0	0	1752	0	0	1883	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		67.1			164.6			117.1			111.1	
Travel Time (s)		4.8			11.9			8.4			8.0	
Confl. Peds. (#/hr)	8		4	4		8	8		2	2		8
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Heavy Vehicles (%)	0%	4%	0%	0%	4%	100%	0%	13%	0%	0%	0%	0%
Adj. Flow (vph)	8	38	18	1	40	1	14	12	4	3	27	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	64	0	0	42	0	0	30	0	0	34	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

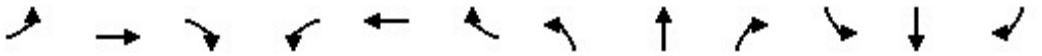
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.6%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	28	13	1	29	1	10	9	3	2	20	3
Future Volume (Veh/h)	6	28	13	1	29	1	10	9	3	2	20	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	8	38	18	1	40	1	14	12	4	3	27	4
Pedestrians		8			2			4			8	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			0			0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	49			60			135	118	53	126	126	56
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	49			60			135	118	53	126	126	56
tC, single (s)	4.1			4.1			7.1	6.6	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.1	3.3	3.5	4.0	3.3
p0 queue free %	99			100			98	98	100	100	96	100
cM capacity (veh/h)	1559			1550			795	739	1014	820	754	1000

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	64	42	30	34
Volume Left	8	1	14	3
Volume Right	18	1	4	4
cSH	1559	1550	794	782
Volume to Capacity	0.01	0.00	0.04	0.04
Queue Length 95th (m)	0.1	0.0	0.9	1.0
Control Delay (s)	0.9	0.2	9.7	9.8
Lane LOS	A	A	A	A
Approach Delay (s)	0.9	0.2	9.7	9.8
Approach LOS			A	A

Intersection Summary				
Average Delay	4.1			
Intersection Capacity Utilization	18.6%	ICU Level of Service	A	
Analysis Period (min)	15			

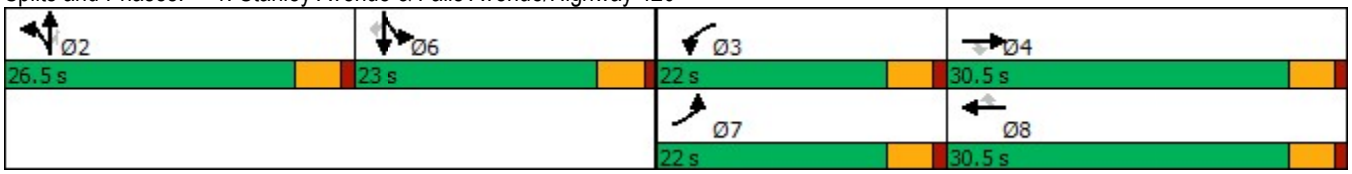


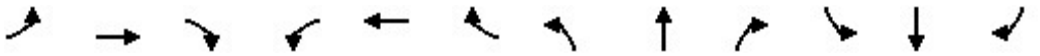
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	400	553	515	41	258	35	295	239	55	34	252	269
Future Volume (vph)	400	553	515	41	258	35	295	239	55	34	252	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.98	1.00		0.98	0.98	0.99	0.95	0.98		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.984		0.950		
Satd. Flow (prot)	3404	5142	1570	1772	3510	1526	1552	3215	1484	1825	3510	1585
Flt Permitted	0.950			0.950			0.950	0.984		0.950		
Satd. Flow (perm)	3366	5142	1536	1764	3510	1493	1518	3192	1405	1781	3510	1516
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			572			112			112			261
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.6			321.9			327.8			140.2	
Travel Time (s)		16.1			19.3			23.6			10.1	
Confl. Peds. (#/hr)	6		6	6		6	19		25	25		19
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	2%	4%	3%	4%	7%	7%	7%	10%	0%	4%	3%
Adj. Flow (vph)	444	614	572	46	287	39	328	266	61	38	280	299
Shared Lane Traffic (%)							41%					
Lane Group Flow (vph)	444	614	572	46	287	39	194	400	61	38	280	299
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	15.0	15.0	15.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.0	30.5	30.5	22.0	30.5	30.5	26.5	26.5	26.5	23.0	23.0	23.0
Total Split (%)	21.6%	29.9%	29.9%	21.6%	29.9%	29.9%	26.0%	26.0%	26.0%	22.5%	22.5%	22.5%
Maximum Green (s)	17.5	26.0	26.0	17.5	26.0	26.0	22.0	22.0	22.0	18.5	18.5	18.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
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
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	15.9	38.9	38.9	7.9	26.2	26.2	18.5	18.5	18.5	13.7	13.7	13.7
Actuated g/C Ratio	0.17	0.42	0.42	0.09	0.28	0.28	0.20	0.20	0.20	0.15	0.15	0.15
v/c Ratio	0.76	0.28	0.59	0.30	0.29	0.08	0.63	0.62	0.16	0.14	0.54	0.67
Control Delay	46.6	20.6	5.1	47.0	28.4	0.3	44.6	39.1	1.8	36.5	41.0	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.6	20.6	5.1	47.0	28.4	0.3	44.6	39.1	1.8	36.5	41.0	15.6
LOS	D	C	A	D	C	A	D	D	A	D	D	B
Approach Delay		22.2			27.8			37.3			28.4	
Approach LOS		C			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 102			
Actuated Cycle Length: 92.4			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 27.0		Intersection LOS: C	
Intersection Capacity Utilization 66.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Stanley Avenue & Falls Avenue/Highway 420

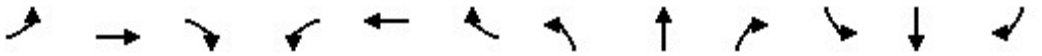




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	444	614	572	46	287	39	194	400	61	38	280	299
v/c Ratio	0.76	0.28	0.59	0.30	0.29	0.08	0.63	0.62	0.16	0.14	0.54	0.67
Control Delay	46.6	20.6	5.1	47.0	28.4	0.3	44.6	39.1	1.8	36.5	41.0	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.6	20.6	5.1	47.0	28.4	0.3	44.6	39.1	1.8	36.5	41.0	15.6
Queue Length 50th (m)	39.0	28.0	0.0	8.0	21.4	0.0	35.6	36.7	0.0	6.1	25.0	6.1
Queue Length 95th (m)	#60.5	44.5	25.3	19.2	35.8	0.0	63.0	55.2	1.7	15.2	38.8	31.7
Internal Link Dist (m)		243.6			297.9			303.8			116.2	
Turn Bay Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Base Capacity (vph)	650	2164	977	338	996	503	372	772	422	368	708	514
Starvation Cap Reductn	0	0	0	0	0	0	0	0	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	0.68	0.28	0.59	0.14	0.29	0.08	0.52	0.52	0.14	0.10	0.40	0.58

Intersection Summary

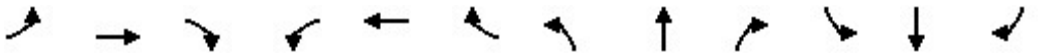
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	400	553	515	41	258	35	295	239	55	34	252	269
Future Volume (vph)	400	553	515	41	258	35	295	239	55	34	252	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.95	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	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	0.98	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3404	5142	1537	1772	3510	1494	1552	3214	1410	1825	3510	1520
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3404	5142	1537	1772	3510	1494	1552	3214	1410	1825	3510	1520
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	444	614	572	46	287	39	328	266	61	38	280	299
RTOR Reduction (vph)	0	0	336	0	0	27	0	0	49	0	0	223
Lane Group Flow (vph)	444	614	236	46	287	12	194	400	12	38	280	76
Confl. Peds. (#/hr)	6		6	6		6	19		25	25		19
Heavy Vehicles (%)	4%	2%	4%	3%	4%	7%	7%	7%	10%	0%	4%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	15.9	38.9	38.9	5.2	28.2	28.2	18.4	18.4	18.4	13.7	13.7	13.7
Effective Green, g (s)	15.9	38.9	38.9	5.2	28.2	28.2	18.4	18.4	18.4	13.7	13.7	13.7
Actuated g/C Ratio	0.17	0.41	0.41	0.06	0.30	0.30	0.20	0.20	0.20	0.15	0.15	0.15
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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)	574	2123	634	97	1050	447	303	627	275	265	510	221
v/s Ratio Prot	c0.13	0.12		0.03	0.08		c0.12	0.12		0.02	c0.08	
v/s Ratio Perm			c0.15			0.01			0.01			0.05
v/c Ratio	0.77	0.29	0.37	0.47	0.27	0.03	0.64	0.64	0.04	0.14	0.55	0.34
Uniform Delay, d1	37.4	18.4	19.2	43.2	25.2	23.3	34.9	34.8	30.8	35.1	37.4	36.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.4	0.3	1.7	3.6	0.6	0.1	4.6	2.1	0.1	0.2	1.2	0.9
Delay (s)	43.9	18.8	20.9	46.8	25.8	23.4	39.4	37.0	30.8	35.4	38.6	37.1
Level of Service	D	B	C	D	C	C	D	D	C	D	D	D
Approach Delay (s)		26.3			28.2			37.1			37.7	
Approach LOS		C			C			D			D	

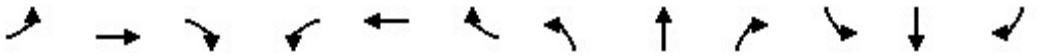
Intersection Summary			
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	94.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	0	17	2	4	45	16	483	14	24	614	96
Future Volume (vph)	27	0	17	2	4	45	16	483	14	24	614	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.948			0.879			0.996			0.980	
Flt Protected		0.970			0.998		0.950			0.950		
Satd. Flow (prot)	0	1600	0	0	1685	0	1706	3421	0	1690	3449	0
Flt Permitted		0.970			0.998		0.950			0.950		
Satd. Flow (perm)	0	1600	0	0	1685	0	1706	3421	0	1690	3449	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		267.3			32.0			68.3			327.8	
Travel Time (s)		19.2			2.3			4.9			23.6	
Confl. Peds. (#/hr)	2		7	7		2	3		27	27		3
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	17%	0%	0%	0%	0%	0%	7%	6%	15%	8%	4%	2%
Adj. Flow (vph)	30	0	19	2	4	51	18	543	16	27	690	108
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	49	0	0	57	0	18	559	0	27	798	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

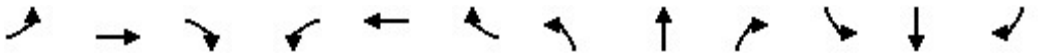
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.0%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	0	17	2	4	45	16	483	14	24	614	96
Future Volume (Veh/h)	27	0	17	2	4	45	16	483	14	24	614	96
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	30	0	19	2	4	51	18	543	16	27	690	108
Pedestrians		3			27			7			2	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			3			1			0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)											328	
pX, platoon unblocked	1.00	1.00	1.00	1.00	1.00		1.00					
vC, conflicting volume	1164	1423	409	1039	1469	308	801			586		
vC1, stage 1 conf vol	801	801		614	614							
vC2, stage 2 conf vol	362	622		425	855							
vCu, unblocked vol	1157	1417	400	1032	1464	308	793			586		
tC, single (s)	7.8	6.5	6.9	7.5	6.5	6.9	4.2			4.3		
tC, 2 stage (s)	6.8	5.5		6.5	5.5							
tF (s)	3.7	4.0	3.3	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	89	100	97	99	99	92	98			97		
cM capacity (veh/h)	272	307	598	359	293	674	787			920		

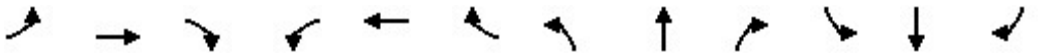
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	49	57	18	362	197	27	460	338
Volume Left	30	2	18	0	0	27	0	0
Volume Right	19	51	0	0	16	0	0	108
cSH	345	601	787	1700	1700	920	1700	1700
Volume to Capacity	0.14	0.09	0.02	0.21	0.12	0.03	0.27	0.20
Queue Length 95th (m)	3.7	2.4	0.5	0.0	0.0	0.7	0.0	0.0
Control Delay (s)	17.2	11.6	9.7	0.0	0.0	9.0	0.0	0.0
Lane LOS	C	B	A			A		
Approach Delay (s)	17.2	11.6	0.3			0.3		
Approach LOS	C	B						

Intersection Summary				
Average Delay	1.3			
Intersection Capacity Utilization	37.0%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	8	9	1	17	0	2	1	2	0	5	2
Future Volume (vph)	5	8	9	1	17	0	2	1	2	0	5	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.945						0.942			0.959	
Flt Protected		0.989			0.998			0.979				
Satd. Flow (prot)	0	1555	0	0	1796	0	0	1772	0	0	1616	0
Flt Permitted		0.989			0.998			0.979				
Satd. Flow (perm)	0	1555	0	0	1796	0	0	1772	0	0	1616	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		67.1			164.6			117.1			111.1	
Travel Time (s)		4.8			11.9			8.4			8.0	
Confl. Peds. (#/hr)	5					5	5		5	5		5
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles (%)	0%	0%	38%	0%	7%	0%	0%	0%	0%	0%	20%	0%
Adj. Flow (vph)	7	12	13	1	25	0	3	1	3	0	7	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	0	26	0	0	7	0	0	10	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	8	9	1	17	0	2	1	2	0	5	2
Future Volume (Veh/h)	5	8	9	1	17	0	2	1	2	0	5	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Hourly flow rate (vph)	7	12	13	1	25	0	3	1	3	0	7	3
Pedestrians		5			5						5	
Lane Width (m)		3.7			3.7						3.7	
Walking Speed (m/s)		1.1			1.1						1.1	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	30			25			71	64	24	73	71	35
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	30			25			71	64	24	73	71	35
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.2	3.3
p0 queue free %	100			100			100	100	100	100	99	100
cM capacity (veh/h)	1588			1603			905	822	1054	903	778	1033

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	32	26	7	10
Volume Left	7	1	3	0
Volume Right	13	0	3	3
cSH	1588	1603	949	841
Volume to Capacity	0.00	0.00	0.01	0.01
Queue Length 95th (m)	0.1	0.0	0.2	0.3
Control Delay (s)	1.6	0.3	8.8	9.3
Lane LOS	A	A	A	A
Approach Delay (s)	1.6	0.3	8.8	9.3
Approach LOS			A	A

Intersection Summary				
Average Delay	2.9			
Intersection Capacity Utilization	16.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	28	11	0	21	31	0
Future Volume (vph)	28	11	0	21	31	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.961					
Flt Protected					0.950	
Satd. Flow (prot)	1810	0	0	1883	1789	0
Flt Permitted					0.950	
Satd. Flow (perm)	1810	0	0	1883	1789	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	32.0			67.1	35.3	
Travel Time (s)	2.3			4.8	2.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	12	0	23	34	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	42	0	0	23	34	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	28	11	0	21	31	0
Future Volume (Veh/h)	28	11	0	21	31	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)	30	12	0	23	34	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			42		59	36
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			42		59	36
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		96	100
cM capacity (veh/h)			1567		948	1037

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	42	23	34
Volume Left	0	0	34
Volume Right	12	0	0
cSH	1700	1567	948
Volume to Capacity	0.02	0.00	0.04
Queue Length 95th (m)	0.0	0.0	0.8
Control Delay (s)	0.0	0.0	8.9
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.9
Approach LOS			A

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

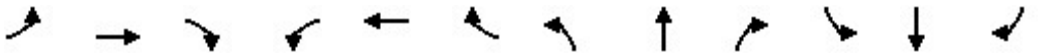
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	11	2	512	5	3	630
Future Volume (vph)	11	2	512	5	3	630
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	25.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.981		0.999			
Flt Protected	0.959				0.950	
Satd. Flow (prot)	1772	0	3575	0	1789	3579
Flt Permitted	0.959				0.950	
Satd. Flow (perm)	1772	0	3575	0	1789	3579
Link Speed (k/h)	48		50			50
Link Distance (m)	33.8		68.8			68.3
Travel Time (s)	2.5		5.0			4.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	2	557	5	3	685
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	0	562	0	3	685
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane			Yes			Yes
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.4%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	11	2	512	5	3	630
Future Volume (Veh/h)	11	2	512	5	3	630
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)	12	2	557	5	3	685
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (m)						396
pX, platoon unblocked						
vC, conflicting volume	908	281			562	
vC1, stage 1 conf vol	560					
vC2, stage 2 conf vol	348					
vCu, unblocked vol	908	281			562	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	100			100	
cM capacity (veh/h)	472	716			1005	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	14	371	191	3	342	342
Volume Left	12	0	0	3	0	0
Volume Right	2	0	5	0	0	0
cSH	496	1700	1700	1005	1700	1700
Volume to Capacity	0.03	0.22	0.11	0.00	0.20	0.20
Queue Length 95th (m)	0.7	0.0	0.0	0.1	0.0	0.0
Control Delay (s)	12.5	0.0	0.0	8.6	0.0	0.0
Lane LOS	B			A		
Approach Delay (s)	12.5	0.0		0.0		
Approach LOS	B					

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	27.4%	ICU Level of Service	A
Analysis Period (min)	15		

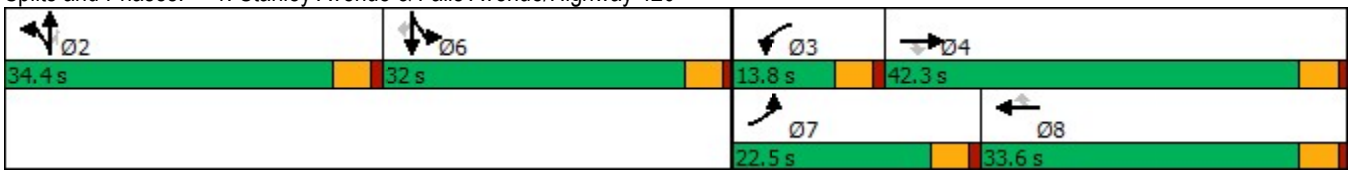


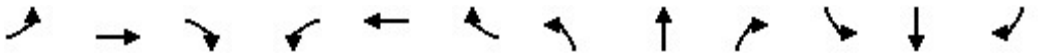
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	398	567	620	87	712	60	544	340	56	53	374	421
Future Volume (vph)	398	567	620	87	712	60	544	340	56	53	374	421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.97	0.99		0.96	0.97	0.99	0.91	0.97		0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.979		0.950		
Satd. Flow (prot)	3404	5193	1585	1772	3579	1633	1612	3342	1555	1825	3614	1601
Flt Permitted	0.950			0.950			0.950	0.979		0.950		
Satd. Flow (perm)	3354	5193	1541	1759	3579	1574	1572	3306	1421	1766	3614	1514
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			558			134			134			230
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.6			321.9			327.8			140.2	
Travel Time (s)		16.1			19.3			23.6			10.1	
Confl. Peds. (#/hr)	12		8	8		12	21		37	37		21
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	1%	3%	3%	2%	0%	3%	2%	5%	0%	1%	2%
Adj. Flow (vph)	406	579	633	89	727	61	555	347	57	54	382	430
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	406	579	633	89	727	61	294	608	57	54	382	430
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	42.3	42.3	13.8	33.6	33.6	34.4	34.4	34.4	32.0	32.0	32.0
Total Split (%)	18.4%	34.5%	34.5%	11.3%	27.4%	27.4%	28.1%	28.1%	28.1%	26.1%	26.1%	26.1%
Maximum Green (s)	18.0	37.8	37.8	9.3	29.1	29.1	29.9	29.9	29.9	27.5	27.5	27.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
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
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	16.8	38.2	38.2	8.8	30.2	30.2	26.5	26.5	26.5	22.8	22.8	22.8
Actuated g/C Ratio	0.15	0.33	0.33	0.08	0.26	0.26	0.23	0.23	0.23	0.20	0.20	0.20
v/c Ratio	0.81	0.33	0.71	0.65	0.77	0.12	0.79	0.79	0.13	0.15	0.53	0.89
Control Delay	62.3	30.8	10.4	76.4	47.2	0.5	58.3	50.0	0.6	39.3	44.1	41.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.3	30.8	10.4	76.4	47.2	0.5	58.3	50.0	0.6	39.3	44.1	41.6
LOS	E	C	B	E	D	A	E	D	A	D	D	D
Approach Delay		30.7			46.9			49.6			42.6	
Approach LOS		C			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 122.5			
Actuated Cycle Length: 114.5			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 40.6		Intersection LOS: D	
Intersection Capacity Utilization 75.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Stanley Avenue & Falls Avenue/Highway 420

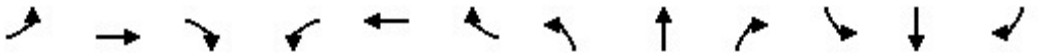




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	406	579	633	89	727	61	294	608	57	54	382	430
v/c Ratio	0.81	0.33	0.71	0.65	0.77	0.12	0.79	0.79	0.13	0.15	0.53	0.89
Control Delay	62.3	30.8	10.4	76.4	47.2	0.5	58.3	50.0	0.6	39.3	44.1	41.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.3	30.8	10.4	76.4	47.2	0.5	58.3	50.0	0.6	39.3	44.1	41.6
Queue Length 50th (m)	49.4	39.7	13.1	21.2	88.6	0.0	72.3	74.6	0.0	10.5	42.2	48.5
Queue Length 95th (m)	#71.4	50.5	56.7	#44.4	#117.2	0.0	#112.8	96.3	0.0	21.6	57.3	#101.8
Internal Link Dist (m)		243.6			297.9			303.8			116.2	
Turn Bay Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Base Capacity (vph)	540	1732	886	145	945	514	425	881	473	442	877	541
Starvation Cap Reductn	0	0	0	0	0	0	0	0	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	0.75	0.33	0.71	0.61	0.77	0.12	0.69	0.69	0.12	0.12	0.44	0.79

Intersection Summary

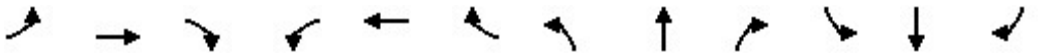
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	398	567	620	87	712	60	544	340	56	53	374	421
Future Volume (vph)	398	567	620	87	712	60	544	340	56	53	374	421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.92	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	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	0.98	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3404	5193	1543	1772	3579	1577	1612	3342	1429	1825	3614	1519
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3404	5193	1543	1772	3579	1577	1612	3342	1429	1825	3614	1519
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	406	579	633	89	727	61	555	347	57	54	382	430
RTOR Reduction (vph)	0	0	371	0	0	45	0	0	44	0	0	184
Lane Group Flow (vph)	406	579	262	89	727	16	294	608	13	54	382	246
Confl. Peds. (#/hr)	12		8	8		12	21		37	37		21
Heavy Vehicles (%)	4%	1%	3%	3%	2%	0%	3%	2%	5%	0%	1%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	16.8	38.3	38.3	8.8	30.3	30.3	26.5	26.5	26.5	22.8	22.8	22.8
Effective Green, g (s)	16.8	38.3	38.3	8.8	30.3	30.3	26.5	26.5	26.5	22.8	22.8	22.8
Actuated g/C Ratio	0.15	0.33	0.33	0.08	0.26	0.26	0.23	0.23	0.23	0.20	0.20	0.20
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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)	499	1738	516	136	947	417	373	774	331	363	720	302
v/s Ratio Prot	c0.12	0.11		0.05	c0.20		c0.18	0.18		0.03	0.11	
v/s Ratio Perm			0.17			0.01			0.01			c0.16
v/c Ratio	0.81	0.33	0.51	0.65	0.77	0.04	0.79	0.79	0.04	0.15	0.53	0.81
Uniform Delay, d1	47.3	28.5	30.5	51.3	38.8	31.2	41.3	41.3	34.1	37.8	41.0	43.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.8	0.5	3.5	10.8	5.9	0.2	10.5	5.3	0.0	0.2	0.8	15.3
Delay (s)	57.1	29.0	34.0	62.1	44.7	31.4	51.9	46.5	34.1	38.0	41.8	59.1
Level of Service	E	C	C	E	D	C	D	D	C	D	D	E
Approach Delay (s)		38.0			45.6			47.4			50.1	
Approach LOS		D			D			D			D	

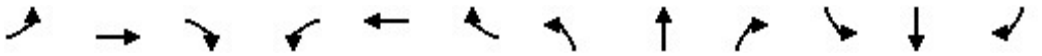
Intersection Summary			
HCM 2000 Control Delay	44.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	114.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	9	29	8	3	73	17	781	9	54	923	43
Future Volume (vph)	39	9	29	8	3	73	17	781	9	54	923	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.949			0.883			0.998			0.993	
Flt Protected		0.976			0.995		0.950			0.950		
Satd. Flow (prot)	0	1728	0	0	1665	0	1825	3538	0	1772	3544	0
Flt Permitted		0.976			0.995		0.950			0.950		
Satd. Flow (perm)	0	1728	0	0	1665	0	1825	3538	0	1772	3544	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		267.3			32.0			68.3			327.8	
Travel Time (s)		19.2			2.3			4.9			23.6	
Confl. Peds. (#/hr)	2		1	1		2	9		29	29		9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	6%	0%	0%	14%	0%	0%	0%	3%	0%	3%	2%	8%
Adj. Flow (vph)	41	10	31	9	3	78	18	831	10	57	982	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	82	0	0	90	0	18	841	0	57	1028	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

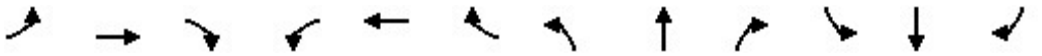
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	9	29	8	3	73	17	781	9	54	923	43
Future Volume (Veh/h)	39	9	29	8	3	73	17	781	9	54	923	43
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	41	10	31	9	3	78	18	831	10	57	982	46
Pedestrians		9			29			1			2	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			3			0			0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)											328	
pX, platoon unblocked	0.94	0.94	0.94	0.94	0.94		0.94					
vC, conflicting volume	1661	2034	524	1543	2052	452	1037			870		
vC1, stage 1 conf vol	1128	1128		901	901							
vC2, stage 2 conf vol	533	906		642	1151							
vCu, unblocked vol	1571	1969	357	1445	1988	452	904			870		
tC, single (s)	7.6	6.5	6.9	7.8	6.5	6.9	4.1			4.2		
tC, 2 stage (s)	6.6	5.5		6.8	5.5							
tF (s)	3.6	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	78	95	95	96	99	86	97			92		
cM capacity (veh/h)	184	198	599	217	202	544	706			742		

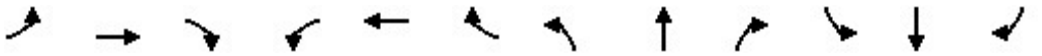
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	82	90	18	554	287	57	655	373
Volume Left	41	9	18	0	0	57	0	0
Volume Right	31	78	0	0	10	0	0	46
cSH	252	451	706	1700	1700	742	1700	1700
Volume to Capacity	0.32	0.20	0.03	0.33	0.17	0.08	0.39	0.22
Queue Length 95th (m)	10.3	5.6	0.6	0.0	0.0	1.9	0.0	0.0
Control Delay (s)	26.0	15.0	10.2	0.0	0.0	10.3	0.0	0.0
Lane LOS	D	B	B			B		
Approach Delay (s)	26.0	15.0	0.2			0.5		
Approach LOS	D	B						

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	51.4%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	28	13	1	29	1	10	9	3	2	20	3
Future Volume (vph)	6	28	13	1	29	1	10	9	3	2	20	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.962			0.997			0.982			0.984	
Flt Protected		0.994			0.999			0.977			0.996	
Satd. Flow (prot)	0	1794	0	0	1802	0	0	1752	0	0	1883	0
Flt Permitted		0.994			0.999			0.977			0.996	
Satd. Flow (perm)	0	1794	0	0	1802	0	0	1752	0	0	1883	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		67.1			164.6			117.1			111.1	
Travel Time (s)		4.8			11.9			8.4			8.0	
Confl. Peds. (#/hr)	8		4	4		8	8		2	2		8
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Heavy Vehicles (%)	0%	4%	0%	0%	4%	100%	0%	13%	0%	0%	0%	0%
Adj. Flow (vph)	8	38	18	1	40	1	14	12	4	3	27	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	64	0	0	42	0	0	30	0	0	34	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.6%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	28	13	1	29	1	10	9	3	2	20	3
Future Volume (Veh/h)	6	28	13	1	29	1	10	9	3	2	20	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	8	38	18	1	40	1	14	12	4	3	27	4
Pedestrians		8			2			4			8	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			0			0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	49			60			135	118	53	126	126	56
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	49			60			135	118	53	126	126	56
tC, single (s)	4.1			4.1			7.1	6.6	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.1	3.3	3.5	4.0	3.3
p0 queue free %	99			100			98	98	100	100	96	100
cM capacity (veh/h)	1559			1550			795	739	1014	820	754	1000

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	64	42	30	34
Volume Left	8	1	14	3
Volume Right	18	1	4	4
cSH	1559	1550	794	782
Volume to Capacity	0.01	0.00	0.04	0.04
Queue Length 95th (m)	0.1	0.0	0.9	1.0
Control Delay (s)	0.9	0.2	9.7	9.8
Lane LOS	A	A	A	A
Approach Delay (s)	0.9	0.2	9.7	9.8
Approach LOS			A	A

Intersection Summary				
Average Delay	4.1			
Intersection Capacity Utilization	18.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	59	13	0	56	29	0
Future Volume (vph)	59	13	0	56	29	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.976					
Flt Protected					0.950	
Satd. Flow (prot)	1838	0	0	1883	1789	0
Flt Permitted					0.950	
Satd. Flow (perm)	1838	0	0	1883	1789	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	32.0			67.1	35.3	
Travel Time (s)	2.3			4.8	2.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	14	0	61	32	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	78	0	0	61	32	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.9%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	59	13	0	56	29	0
Future Volume (Veh/h)	59	13	0	56	29	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)	64	14	0	61	32	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			78		132	71
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			78		132	71
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		96	100
cM capacity (veh/h)			1520		862	991

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	78	61	32
Volume Left	0	0	32
Volume Right	14	0	0
cSH	1700	1520	862
Volume to Capacity	0.05	0.00	0.04
Queue Length 95th (m)	0.0	0.0	0.9
Control Delay (s)	0.0	0.0	9.3
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.3
Approach LOS			A

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	13.9%	ICU Level of Service	A
Analysis Period (min)	15		

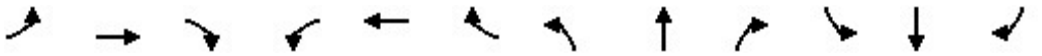
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	13	2	806	3	3	958
Future Volume (vph)	13	2	806	3	3	958
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	25.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.983		0.999			
Flt Protected	0.958				0.950	
Satd. Flow (prot)	1774	0	3575	0	1789	3579
Flt Permitted	0.958				0.950	
Satd. Flow (perm)	1774	0	3575	0	1789	3579
Link Speed (k/h)	48		50			50
Link Distance (m)	33.8		68.8			68.3
Travel Time (s)	2.5		5.0			4.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	2	876	3	3	1041
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	879	0	3	1041
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane			Yes			Yes
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.5%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	2	806	3	3	958
Future Volume (Veh/h)	13	2	806	3	3	958
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)	14	2	876	3	3	1041
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (m)						396
pX, platoon unblocked	0.96					
vC, conflicting volume	1404	440			879	
vC1, stage 1 conf vol	878					
vC2, stage 2 conf vol	526					
vCu, unblocked vol	1334	440			879	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	100			100	
cM capacity (veh/h)	327	565			764	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	16	584	295	3	520	520
Volume Left	14	0	0	3	0	0
Volume Right	2	0	3	0	0	0
cSH	345	1700	1700	764	1700	1700
Volume to Capacity	0.05	0.34	0.17	0.00	0.31	0.31
Queue Length 95th (m)	1.1	0.0	0.0	0.1	0.0	0.0
Control Delay (s)	15.9	0.0	0.0	9.7	0.0	0.0
Lane LOS	C			A		
Approach Delay (s)	15.9	0.0		0.0		
Approach LOS	C					

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	36.5%	ICU Level of Service	A
Analysis Period (min)	15		

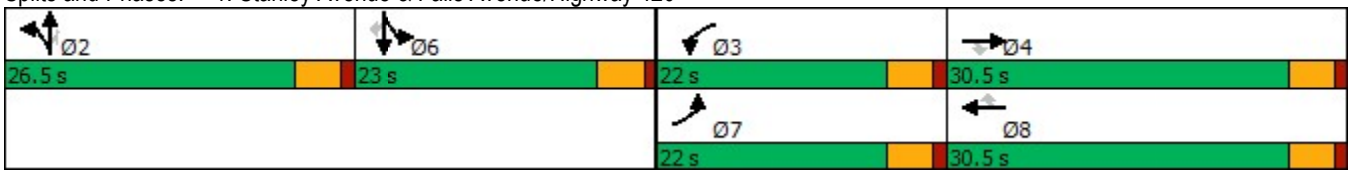


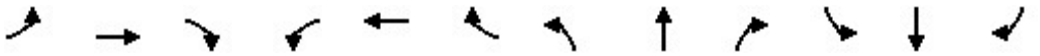
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	442	611	561	44	285	39	306	253	54	38	272	298
Future Volume (vph)	442	611	561	44	285	39	306	253	54	38	272	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.98	1.00		0.98	0.98	0.99	0.95	0.98		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.984		0.950		
Satd. Flow (prot)	3404	5142	1570	1772	3510	1526	1552	3215	1484	1825	3510	1585
Flt Permitted	0.950			0.950			0.950	0.984		0.950		
Satd. Flow (perm)	3367	5142	1536	1765	3510	1493	1519	3193	1405	1782	3510	1516
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			623			112			112			267
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.6			321.9			327.8			140.2	
Travel Time (s)		16.1			19.3			23.6			10.1	
Confl. Peds. (#/hr)	6		6	6		6	19		25	25		19
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	2%	4%	3%	4%	7%	7%	7%	10%	0%	4%	3%
Adj. Flow (vph)	491	679	623	49	317	43	340	281	60	42	302	331
Shared Lane Traffic (%)							40%					
Lane Group Flow (vph)	491	679	623	49	317	43	204	417	60	42	302	331
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	15.0	15.0	15.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.0	30.5	30.5	22.0	30.5	30.5	26.5	26.5	26.5	23.0	23.0	23.0
Total Split (%)	21.6%	29.9%	29.9%	21.6%	29.9%	29.9%	26.0%	26.0%	26.0%	22.5%	22.5%	22.5%
Maximum Green (s)	17.5	26.0	26.0	17.5	26.0	26.0	22.0	22.0	22.0	18.5	18.5	18.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
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
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	16.6	39.4	39.4	8.1	26.2	26.2	18.8	18.8	18.8	14.6	14.6	14.6
Actuated g/C Ratio	0.18	0.42	0.42	0.09	0.28	0.28	0.20	0.20	0.20	0.15	0.15	0.15
v/c Ratio	0.82	0.32	0.62	0.32	0.33	0.09	0.66	0.65	0.16	0.15	0.56	0.72
Control Delay	50.9	21.6	5.4	48.0	29.6	0.3	46.8	40.6	1.7	36.4	41.3	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.9	21.6	5.4	48.0	29.6	0.3	46.8	40.6	1.7	36.4	41.3	18.7
LOS	D	C	A	D	C	A	D	D	A	D	D	B
Approach Delay		24.0			28.7			39.0			29.9	
Approach LOS		C			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 102			
Actuated Cycle Length: 94.3			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 28.5		Intersection LOS: C	
Intersection Capacity Utilization 67.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Stanley Avenue & Falls Avenue/Highway 420

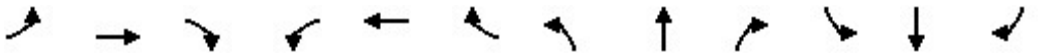




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	491	679	623	49	317	43	204	417	60	42	302	331
v/c Ratio	0.82	0.32	0.62	0.32	0.33	0.09	0.66	0.65	0.16	0.15	0.56	0.72
Control Delay	50.9	21.6	5.4	48.0	29.6	0.3	46.8	40.6	1.7	36.4	41.3	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.9	21.6	5.4	48.0	29.6	0.3	46.8	40.6	1.7	36.4	41.3	18.7
Queue Length 50th (m)	45.4	33.2	0.0	8.7	24.8	0.0	38.5	39.3	0.0	6.8	27.5	10.6
Queue Length 95th (m)	#73.6	49.5	27.0	20.0	39.3	0.0	66.4	57.5	1.6	16.4	41.6	39.9
Internal Link Dist (m)		243.6			297.9			303.8			116.2	
Turn Bay Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Base Capacity (vph)	636	2146	1004	331	974	495	364	755	415	360	693	513
Starvation Cap Reductn	0	0	0	0	0	0	0	0	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	0.77	0.32	0.62	0.15	0.33	0.09	0.56	0.55	0.14	0.12	0.44	0.65

Intersection Summary

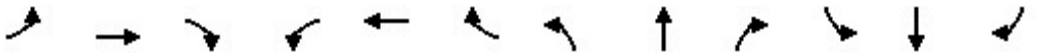
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	442	611	561	44	285	39	306	253	54	38	272	298
Future Volume (vph)	442	611	561	44	285	39	306	253	54	38	272	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.95	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	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	0.98	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3404	5142	1537	1772	3510	1493	1552	3215	1408	1825	3510	1519
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3404	5142	1537	1772	3510	1493	1552	3215	1408	1825	3510	1519
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	491	679	623	49	317	43	340	281	60	42	302	331
RTOR Reduction (vph)	0	0	368	0	0	30	0	0	48	0	0	226
Lane Group Flow (vph)	491	679	255	49	317	13	204	417	12	42	302	105
Confl. Peds. (#/hr)	6		6	6		6	19		25	25		19
Heavy Vehicles (%)	4%	2%	4%	3%	4%	7%	7%	7%	10%	0%	4%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	16.6	39.3	39.3	5.4	28.1	28.1	18.8	18.8	18.8	14.6	14.6	14.6
Effective Green, g (s)	16.6	39.3	39.3	5.4	28.1	28.1	18.8	18.8	18.8	14.6	14.6	14.6
Actuated g/C Ratio	0.17	0.41	0.41	0.06	0.29	0.29	0.20	0.20	0.20	0.15	0.15	0.15
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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)	587	2102	628	99	1026	436	303	628	275	277	533	230
v/s Ratio Prot	c0.14	0.13		0.03	0.09		c0.13	0.13		0.02	c0.09	
v/s Ratio Perm			c0.17			0.01			0.01			0.07
v/c Ratio	0.84	0.32	0.41	0.49	0.31	0.03	0.67	0.66	0.04	0.15	0.57	0.45
Uniform Delay, d1	38.4	19.3	20.1	44.0	26.4	24.3	35.8	35.7	31.4	35.4	37.8	37.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.0	0.4	1.9	3.9	0.8	0.1	5.8	2.6	0.1	0.3	1.4	1.4
Delay (s)	48.5	19.7	22.1	47.9	27.2	24.4	41.6	38.4	31.4	35.6	39.2	38.6
Level of Service	D	B	C	D	C	C	D	D	C	D	D	D
Approach Delay (s)		28.4			29.4			38.7			38.7	
Approach LOS		C			C			D			D	

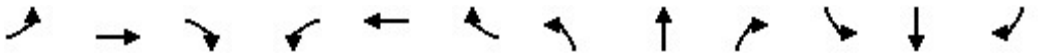
Intersection Summary			
HCM 2000 Control Delay	32.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	96.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	0	19	2	5	16	17	531	16	15	674	106
Future Volume (vph)	30	0	19	2	5	16	17	531	16	15	674	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.948			0.907			0.996			0.980	
Flt Protected		0.970			0.996		0.950			0.950		
Satd. Flow (prot)	0	1599	0	0	1735	0	1706	3421	0	1690	3449	0
Flt Permitted		0.970			0.996		0.950			0.950		
Satd. Flow (perm)	0	1599	0	0	1735	0	1706	3421	0	1690	3449	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		267.3			32.0			68.3			327.8	
Travel Time (s)		19.2			2.3			4.9			23.6	
Confl. Peds. (#/hr)	2		7	7		2	3		27	27		3
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	17%	0%	0%	0%	0%	0%	7%	6%	15%	8%	4%	2%
Adj. Flow (vph)	34	0	21	2	6	18	19	597	18	17	757	119
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	55	0	0	26	0	19	615	0	17	876	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

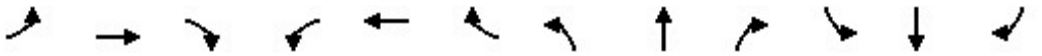
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.2%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	0	19	2	5	16	17	531	16	15	674	106
Future Volume (Veh/h)	30	0	19	2	5	16	17	531	16	15	674	106
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	34	0	21	2	6	18	19	597	18	17	757	119
Pedestrians		3			27			7			2	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			3			1			0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)											328	
pX, platoon unblocked	0.98	0.98	0.98	0.98	0.98		0.98					
vC, conflicting volume	1213	1534	448	1112	1584	336	879			642		
vC1, stage 1 conf vol	854	854		671	671							
vC2, stage 2 conf vol	360	680		440	913							
vCu, unblocked vol	1182	1508	403	1078	1559	336	842			642		
tC, single (s)	7.8	6.5	6.9	7.5	6.5	6.9	4.2			4.3		
tC, 2 stage (s)	6.8	5.5		6.5	5.5							
tF (s)	3.7	4.0	3.3	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	87	100	96	99	98	97	97			98		
cM capacity (veh/h)	267	293	586	340	277	646	743			875		

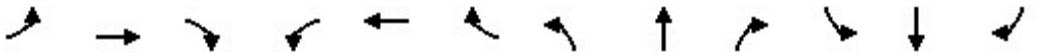
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	55	26	19	398	217	17	505	371
Volume Left	34	2	19	0	0	17	0	0
Volume Right	21	18	0	0	18	0	0	119
cSH	338	469	743	1700	1700	875	1700	1700
Volume to Capacity	0.16	0.06	0.03	0.23	0.13	0.02	0.30	0.22
Queue Length 95th (m)	4.4	1.3	0.6	0.0	0.0	0.5	0.0	0.0
Control Delay (s)	17.7	13.1	10.0	0.0	0.0	9.2	0.0	0.0
Lane LOS	C	B	A			A		
Approach Delay (s)	17.7	13.1	0.3			0.2		
Approach LOS	C	B						

Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	39.2%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	8	10	1	19	0	2	1	2	0	6	2
Future Volume (vph)	6	8	10	1	19	0	2	1	2	0	6	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.944						0.942			0.966	
Flt Protected		0.988			0.998			0.979				
Satd. Flow (prot)	0	1547	0	0	1796	0	0	1772	0	0	1614	0
Flt Permitted		0.988			0.998			0.979				
Satd. Flow (perm)	0	1547	0	0	1796	0	0	1772	0	0	1614	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		67.1			164.6			117.1			111.1	
Travel Time (s)		4.8			11.9			8.4			8.0	
Confl. Peds. (#/hr)	5					5	5		5	5		5
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles (%)	0%	0%	38%	0%	7%	0%	0%	0%	0%	0%	20%	0%
Adj. Flow (vph)	9	12	15	1	28	0	3	1	3	0	9	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	36	0	0	29	0	0	7	0	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

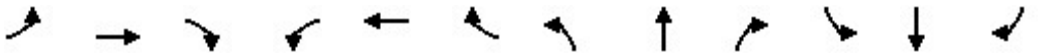
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	8	10	1	19	0	2	1	2	0	6	2
Future Volume (Veh/h)	6	8	10	1	19	0	2	1	2	0	6	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Hourly flow rate (vph)	9	12	15	1	28	0	3	1	3	0	9	3
Pedestrians		5			5						5	
Lane Width (m)		3.7			3.7						3.7	
Walking Speed (m/s)		1.1			1.1						1.1	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	33			27			80	72	24	81	80	38
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	33			27			80	72	24	81	80	38
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.2	3.3
p0 queue free %	99			100			100	100	100	100	99	100
cM capacity (veh/h)	1584			1600			890	813	1052	892	768	1030

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	36	29	7	12
Volume Left	9	1	3	0
Volume Right	15	0	3	3
cSH	1584	1600	939	820
Volume to Capacity	0.01	0.00	0.01	0.01
Queue Length 95th (m)	0.1	0.0	0.2	0.3
Control Delay (s)	1.9	0.3	8.9	9.5
Lane LOS	A	A	A	A
Approach Delay (s)	1.9	0.3	8.9	9.5
Approach LOS			A	A

Intersection Summary				
Average Delay	3.0			
Intersection Capacity Utilization	16.4%	ICU Level of Service	A	
Analysis Period (min)	15			

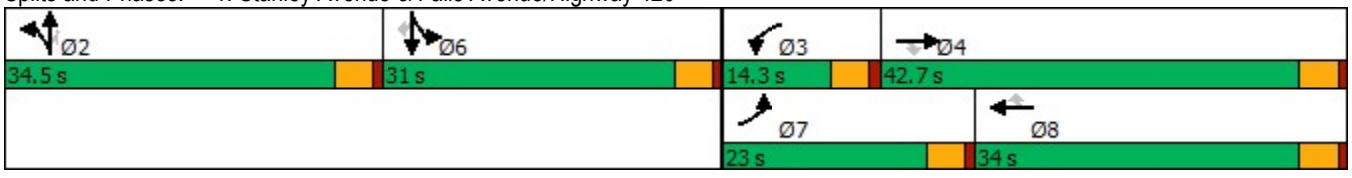


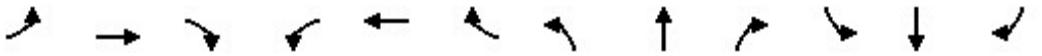
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	398	567	612	86	712	60	528	329	50	53	360	421
Future Volume (vph)	398	567	612	86	712	60	528	329	50	53	360	421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.97	0.99		0.96	0.97	0.99	0.91	0.97		0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.979		0.950		
Satd. Flow (prot)	3404	5193	1585	1772	3579	1633	1612	3342	1555	1825	3614	1601
Flt Permitted	0.950			0.950			0.950	0.979		0.950		
Satd. Flow (perm)	3354	5193	1541	1759	3579	1574	1571	3305	1421	1764	3614	1514
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			567			134			134			237
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.6			321.9			327.8			140.2	
Travel Time (s)		16.1			19.3			23.6			10.1	
Confl. Peds. (#/hr)	12		8	8		12	21		37	37		21
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	1%	3%	3%	2%	0%	3%	2%	5%	0%	1%	2%
Adj. Flow (vph)	406	579	624	88	727	61	539	336	51	54	367	430
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	406	579	624	88	727	61	286	589	51	54	367	430
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	23.0	42.7	42.7	14.3	34.0	34.0	34.5	34.5	34.5	31.0	31.0	31.0
Total Split (%)	18.8%	34.9%	34.9%	11.7%	27.8%	27.8%	28.2%	28.2%	28.2%	25.3%	25.3%	25.3%
Maximum Green (s)	18.5	38.2	38.2	9.8	29.5	29.5	30.0	30.0	30.0	26.5	26.5	26.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
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
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	17.0	40.9	40.9	9.1	30.2	30.2	26.1	26.1	26.1	22.0	22.0	22.0
Actuated g/C Ratio	0.15	0.36	0.36	0.08	0.27	0.27	0.23	0.23	0.23	0.19	0.19	0.19
v/c Ratio	0.80	0.31	0.68	0.62	0.76	0.12	0.77	0.77	0.12	0.15	0.53	0.89
Control Delay	60.3	29.4	8.9	72.8	46.5	0.5	56.9	48.8	0.6	40.1	44.3	41.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.3	29.4	8.9	72.8	46.5	0.5	56.9	48.8	0.6	40.1	44.3	41.4
LOS	E	C	A	E	D	A	E	D	A	D	D	D
Approach Delay		29.2			45.9			48.7			42.5	
Approach LOS		C			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 122.5			
Actuated Cycle Length: 113.5			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 39.5		Intersection LOS: D	
Intersection Capacity Utilization 75.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Stanley Avenue & Falls Avenue/Highway 420

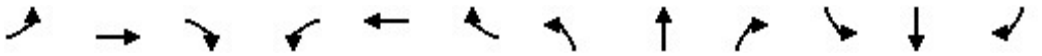




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	406	579	624	88	727	61	286	589	51	54	367	430
v/c Ratio	0.80	0.31	0.68	0.62	0.76	0.12	0.77	0.77	0.12	0.15	0.53	0.89
Control Delay	60.3	29.4	8.9	72.8	46.5	0.5	56.9	48.8	0.6	40.1	44.3	41.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.3	29.4	8.9	72.8	46.5	0.5	56.9	48.8	0.6	40.1	44.3	41.4
Queue Length 50th (m)	49.1	39.4	9.8	20.9	88.2	0.0	69.7	71.7	0.0	10.6	40.8	47.1
Queue Length 95th (m)	#69.6	50.2	49.8	#42.1	#112.5	0.0	104.3	92.9	0.0	21.8	55.8	#101.2
Internal Link Dist (m)		243.6			297.9			303.8			116.2	
Turn Bay Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Base Capacity (vph)	562	1871	917	154	951	516	431	895	479	431	855	539
Starvation Cap Reductn	0	0	0	0	0	0	0	0	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	0.72	0.31	0.68	0.57	0.76	0.12	0.66	0.66	0.11	0.13	0.43	0.80

Intersection Summary

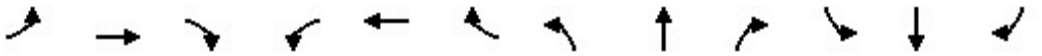
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	398	567	612	86	712	60	528	329	50	53	360	421
Future Volume (vph)	398	567	612	86	712	60	528	329	50	53	360	421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.92	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	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	0.98	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3404	5193	1543	1772	3579	1577	1612	3342	1429	1825	3614	1519
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3404	5193	1543	1772	3579	1577	1612	3342	1429	1825	3614	1519
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	406	579	624	88	727	61	539	336	51	54	367	430
RTOR Reduction (vph)	0	0	364	0	0	44	0	0	39	0	0	191
Lane Group Flow (vph)	406	579	260	88	727	17	286	589	12	54	367	239
Confl. Peds. (#/hr)	12		8	8		12	21		37	37		21
Heavy Vehicles (%)	4%	1%	3%	3%	2%	0%	3%	2%	5%	0%	1%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	17.0	40.9	40.9	7.4	31.3	31.3	26.1	26.1	26.1	22.0	22.0	22.0
Effective Green, g (s)	17.0	40.9	40.9	7.4	31.3	31.3	26.1	26.1	26.1	22.0	22.0	22.0
Actuated g/C Ratio	0.15	0.36	0.36	0.06	0.27	0.27	0.23	0.23	0.23	0.19	0.19	0.19
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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)	505	1856	551	114	979	431	367	762	326	350	695	292
v/s Ratio Prot	c0.12	0.11		0.05	c0.20		c0.18	0.18		0.03	0.10	
v/s Ratio Perm			0.17			0.01			0.01			c0.16
v/c Ratio	0.80	0.31	0.47	0.77	0.74	0.04	0.78	0.77	0.04	0.15	0.53	0.82
Uniform Delay, d1	47.1	26.6	28.4	52.7	37.9	30.5	41.4	41.4	34.4	38.5	41.5	44.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.0	0.4	2.9	27.0	5.1	0.2	10.0	4.9	0.0	0.2	0.7	16.0
Delay (s)	56.1	27.0	31.3	79.7	43.0	30.7	51.5	46.3	34.4	38.7	42.3	60.3
Level of Service	E	C	C	E	D	C	D	D	C	D	D	E
Approach Delay (s)		36.0			45.8			47.2			51.2	
Approach LOS		D			D			D			D	

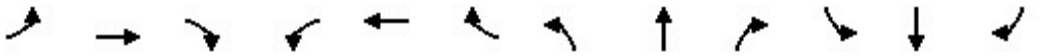
Intersection Summary			
HCM 2000 Control Delay	43.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	114.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	9	29	8	3	44	17	779	9	41	920	43
Future Volume (vph)	39	9	29	8	3	44	17	779	9	41	920	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.949			0.892			0.998			0.993	
Flt Protected		0.976			0.992		0.950			0.950		
Satd. Flow (prot)	0	1728	0	0	1664	0	1825	3538	0	1772	3544	0
Flt Permitted		0.976			0.992		0.950			0.950		
Satd. Flow (perm)	0	1728	0	0	1664	0	1825	3538	0	1772	3544	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		267.3			32.0			68.3			327.8	
Travel Time (s)		19.2			2.3			4.9			23.6	
Confl. Peds. (#/hr)	2		1	1		2	9		29	29		9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	6%	0%	0%	14%	0%	0%	0%	3%	0%	3%	2%	8%
Adj. Flow (vph)	41	10	31	9	3	47	18	829	10	44	979	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	82	0	0	59	0	18	839	0	44	1025	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

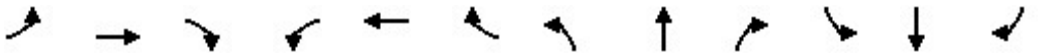
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	9	29	8	3	44	17	779	9	41	920	43
Future Volume (Veh/h)	39	9	29	8	3	44	17	779	9	41	920	43
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	41	10	31	9	3	47	18	829	10	44	979	46
Pedestrians		9			29			1			2	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			3			0			0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)											328	
pX, platoon unblocked	0.94	0.94	0.94	0.94	0.94		0.94					
vC, conflicting volume	1600	2003	522	1514	2021	450	1034			868		
vC1, stage 1 conf vol	1099	1099		899	899							
vC2, stage 2 conf vol	501	904		614	1122							
vCu, unblocked vol	1508	1937	359	1415	1956	450	904			868		
tC, single (s)	7.6	6.5	6.9	7.8	6.5	6.9	4.1			4.2		
tC, 2 stage (s)	6.6	5.5		6.8	5.5							
tF (s)	3.6	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	80	95	95	96	99	91	97			94		
cM capacity (veh/h)	202	209	598	222	210	545	707			744		

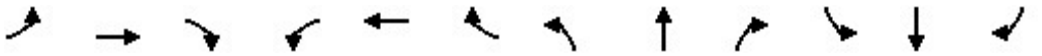
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	82	59	18	553	286	44	653	372
Volume Left	41	9	18	0	0	44	0	0
Volume Right	31	47	0	0	10	0	0	46
cSH	271	418	707	1700	1700	744	1700	1700
Volume to Capacity	0.30	0.14	0.03	0.33	0.17	0.06	0.38	0.22
Queue Length 95th (m)	9.4	3.7	0.6	0.0	0.0	1.4	0.0	0.0
Control Delay (s)	24.0	15.0	10.2	0.0	0.0	10.1	0.0	0.0
Lane LOS	C	C	B			B		
Approach Delay (s)	24.0	15.0	0.2			0.4		
Approach LOS	C	C						

Intersection Summary				
Average Delay	1.7			
Intersection Capacity Utilization	51.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	28	13	1	29	1	10	9	3	2	20	3
Future Volume (vph)	6	28	13	1	29	1	10	9	3	2	20	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.962			0.997			0.982			0.984	
Flt Protected		0.994			0.999			0.977			0.996	
Satd. Flow (prot)	0	1794	0	0	1802	0	0	1752	0	0	1883	0
Flt Permitted		0.994			0.999			0.977			0.996	
Satd. Flow (perm)	0	1794	0	0	1802	0	0	1752	0	0	1883	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		67.1			164.6			117.1			111.1	
Travel Time (s)		4.8			11.9			8.4			8.0	
Confl. Peds. (#/hr)	8		4	4		8	8		2	2		8
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Heavy Vehicles (%)	0%	4%	0%	0%	4%	100%	0%	13%	0%	0%	0%	0%
Adj. Flow (vph)	8	38	18	1	40	1	14	12	4	3	27	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	64	0	0	42	0	0	30	0	0	34	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

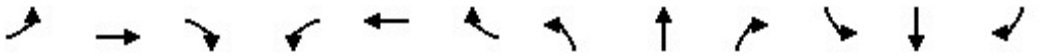
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.6%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	28	13	1	29	1	10	9	3	2	20	3
Future Volume (Veh/h)	6	28	13	1	29	1	10	9	3	2	20	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	8	38	18	1	40	1	14	12	4	3	27	4
Pedestrians		8			2			4			8	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			0			0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	49			60			135	118	53	126	126	56
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	49			60			135	118	53	126	126	56
tC, single (s)	4.1			4.1			7.1	6.6	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.1	3.3	3.5	4.0	3.3
p0 queue free %	99			100			98	98	100	100	96	100
cM capacity (veh/h)	1559			1550			795	739	1014	820	754	1000

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	64	42	30	34
Volume Left	8	1	14	3
Volume Right	18	1	4	4
cSH	1559	1550	794	782
Volume to Capacity	0.01	0.00	0.04	0.04
Queue Length 95th (m)	0.1	0.0	0.9	1.0
Control Delay (s)	0.9	0.2	9.7	9.8
Lane LOS	A	A	A	A
Approach Delay (s)	0.9	0.2	9.7	9.8
Approach LOS			A	A

Intersection Summary				
Average Delay	4.1			
Intersection Capacity Utilization	18.6%	ICU Level of Service	A	
Analysis Period (min)	15			

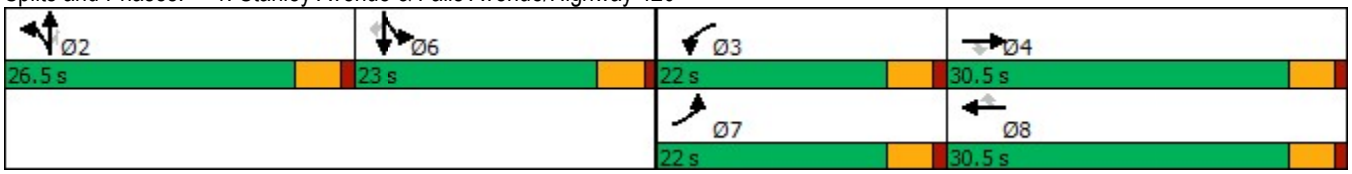


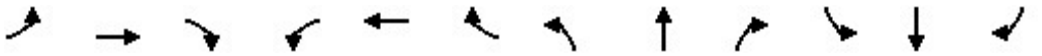
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	442	611	568	45	285	39	324	263	60	38	278	298
Future Volume (vph)	442	611	568	45	285	39	324	263	60	38	278	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.98	1.00		0.98	0.98	0.99	0.95	0.98		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.983		0.950		
Satd. Flow (prot)	3404	5142	1570	1772	3510	1526	1552	3212	1484	1825	3510	1585
Flt Permitted	0.950			0.950			0.950	0.983		0.950		
Satd. Flow (perm)	3367	5142	1536	1765	3510	1493	1520	3189	1405	1783	3510	1516
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			631			112			112			260
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.6			321.9			327.8			140.2	
Travel Time (s)		16.1			19.3			23.6			10.1	
Confl. Peds. (#/hr)	6		6	6		6	19		25	25		19
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	2%	4%	3%	4%	7%	7%	7%	10%	0%	4%	3%
Adj. Flow (vph)	491	679	631	50	317	43	360	292	67	42	309	331
Shared Lane Traffic (%)							41%					
Lane Group Flow (vph)	491	679	631	50	317	43	212	440	67	42	309	331
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	15.0	15.0	15.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.0	30.5	30.5	22.0	30.5	30.5	26.5	26.5	26.5	23.0	23.0	23.0
Total Split (%)	21.6%	29.9%	29.9%	21.6%	29.9%	29.9%	26.0%	26.0%	26.0%	22.5%	22.5%	22.5%
Maximum Green (s)	17.5	26.0	26.0	17.5	26.0	26.0	22.0	22.0	22.0	18.5	18.5	18.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
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
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	16.6	39.3	39.3	8.2	26.2	26.2	19.1	19.1	19.1	14.8	14.8	14.8
Actuated g/C Ratio	0.18	0.41	0.41	0.09	0.28	0.28	0.20	0.20	0.20	0.16	0.16	0.16
v/c Ratio	0.82	0.32	0.63	0.33	0.33	0.09	0.68	0.68	0.18	0.15	0.56	0.73
Control Delay	51.4	21.8	5.4	48.2	29.8	0.4	47.8	41.5	2.7	36.5	41.6	19.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.4	21.8	5.4	48.2	29.8	0.4	47.8	41.5	2.7	36.5	41.6	19.8
LOS	D	C	A	D	C	A	D	D	A	D	D	B
Approach Delay		24.1			29.0			39.7			30.7	
Approach LOS		C			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 102			
Actuated Cycle Length: 94.7			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 29.0		Intersection LOS: C	
Intersection Capacity Utilization 67.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Stanley Avenue & Falls Avenue/Highway 420

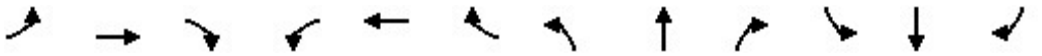




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	491	679	631	50	317	43	212	440	67	42	309	331
v/c Ratio	0.82	0.32	0.63	0.33	0.33	0.09	0.68	0.68	0.18	0.15	0.56	0.73
Control Delay	51.4	21.8	5.4	48.2	29.8	0.4	47.8	41.5	2.7	36.5	41.6	19.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.4	21.8	5.4	48.2	29.8	0.4	47.8	41.5	2.7	36.5	41.6	19.8
Queue Length 50th (m)	46.0	33.7	0.0	9.0	25.2	0.0	40.5	42.0	0.0	6.9	28.4	11.9
Queue Length 95th (m)	#73.6	49.5	27.2	20.4	39.3	0.0	68.9	60.8	3.2	16.4	42.5	41.7
Internal Link Dist (m)		243.6			297.9			303.8			116.2	
Turn Bay Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Base Capacity (vph)	633	2133	1006	329	969	493	363	750	414	359	690	507
Starvation Cap Reductn	0	0	0	0	0	0	0	0	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	0.78	0.32	0.63	0.15	0.33	0.09	0.58	0.59	0.16	0.12	0.45	0.65

Intersection Summary

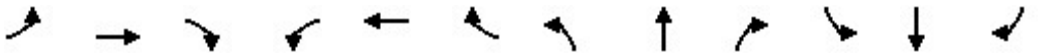
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	442	611	568	45	285	39	324	263	60	38	278	298
Future Volume (vph)	442	611	568	45	285	39	324	263	60	38	278	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.95	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	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	0.98	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3404	5142	1536	1772	3510	1493	1552	3214	1408	1825	3510	1519
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3404	5142	1536	1772	3510	1493	1552	3214	1408	1825	3510	1519
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	491	679	631	50	317	43	360	292	67	42	309	331
RTOR Reduction (vph)	0	0	374	0	0	30	0	0	54	0	0	220
Lane Group Flow (vph)	491	679	257	50	317	13	212	440	13	42	309	111
Confl. Peds. (#/hr)	6		6	6		6	19		25	25		19
Heavy Vehicles (%)	4%	2%	4%	3%	4%	7%	7%	7%	10%	0%	4%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	16.6	39.3	39.3	5.4	28.1	28.1	19.1	19.1	19.1	14.8	14.8	14.8
Effective Green, g (s)	16.6	39.3	39.3	5.4	28.1	28.1	19.1	19.1	19.1	14.8	14.8	14.8
Actuated g/C Ratio	0.17	0.41	0.41	0.06	0.29	0.29	0.20	0.20	0.20	0.15	0.15	0.15
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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)	584	2091	624	99	1021	434	306	635	278	279	537	232
v/s Ratio Prot	c0.14	0.13		0.03	0.09		0.14	c0.14		0.02	c0.09	
v/s Ratio Perm			c0.17			0.01			0.01			0.07
v/c Ratio	0.84	0.32	0.41	0.51	0.31	0.03	0.69	0.69	0.05	0.15	0.58	0.48
Uniform Delay, d1	38.7	19.6	20.4	44.3	26.7	24.5	36.0	36.0	31.4	35.5	38.0	37.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.6	0.4	2.0	4.0	0.8	0.1	6.6	3.3	0.1	0.3	1.5	1.6
Delay (s)	49.3	20.0	22.4	48.3	27.5	24.6	42.7	39.3	31.5	35.7	39.5	38.9
Level of Service	D	B	C	D	C	C	D	D	C	D	D	D
Approach Delay (s)		28.8			29.7			39.6			39.0	
Approach LOS		C			C			D			D	

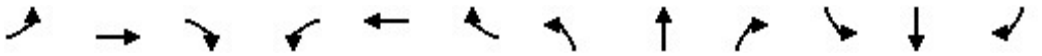
Intersection Summary			
HCM 2000 Control Delay	33.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	96.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	0	19	2	5	47	17	533	16	26	677	106
Future Volume (vph)	30	0	19	2	5	47	17	533	16	26	677	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.948			0.883			0.996			0.980	
Flt Protected		0.970			0.998		0.950			0.950		
Satd. Flow (prot)	0	1599	0	0	1693	0	1706	3421	0	1690	3448	0
Flt Permitted		0.970			0.998		0.950			0.950		
Satd. Flow (perm)	0	1599	0	0	1693	0	1706	3421	0	1690	3448	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		267.3			32.0			68.3			327.8	
Travel Time (s)		19.2			2.3			4.9			23.6	
Confl. Peds. (#/hr)	2		7	7		2	3		27	27		3
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	17%	0%	0%	0%	0%	0%	7%	6%	15%	8%	4%	2%
Adj. Flow (vph)	34	0	21	2	6	53	19	599	18	29	761	119
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	55	0	0	61	0	19	617	0	29	880	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

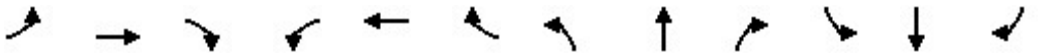
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	0	19	2	5	47	17	533	16	26	677	106
Future Volume (Veh/h)	30	0	19	2	5	47	17	533	16	26	677	106
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	34	0	21	2	6	53	19	599	18	29	761	119
Pedestrians		3			27			7			2	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			3			1			0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)											328	
pX, platoon unblocked	0.98	0.98	0.98	0.98	0.98		0.98					
vC, conflicting volume	1277	1564	450	1140	1614	338	883			644		
vC1, stage 1 conf vol	882	882		673	673							
vC2, stage 2 conf vol	396	682		466	941							
vCu, unblocked vol	1245	1537	402	1105	1588	338	844			644		
tC, single (s)	7.8	6.5	6.9	7.5	6.5	6.9	4.2			4.3		
tC, 2 stage (s)	6.8	5.5		6.5	5.5							
tF (s)	3.7	4.0	3.3	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	86	100	96	99	98	92	97			97		
cM capacity (veh/h)	247	281	586	333	268	645	741			874		

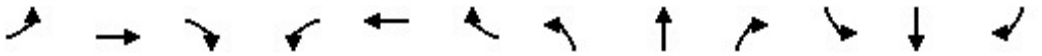
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	55	61	19	399	218	29	507	373
Volume Left	34	2	19	0	0	29	0	0
Volume Right	21	53	0	0	18	0	0	119
cSH	317	552	741	1700	1700	874	1700	1700
Volume to Capacity	0.17	0.11	0.03	0.23	0.13	0.03	0.30	0.22
Queue Length 95th (m)	4.7	2.8	0.6	0.0	0.0	0.8	0.0	0.0
Control Delay (s)	18.7	12.3	10.0	0.0	0.0	9.3	0.0	0.0
Lane LOS	C	B	A			A		
Approach Delay (s)	18.7	12.3	0.3			0.3		
Approach LOS	C	B						

Intersection Summary				
Average Delay	1.3			
Intersection Capacity Utilization	39.3%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	8	10	1	19	0	2	1	2	0	6	2
Future Volume (vph)	6	8	10	1	19	0	2	1	2	0	6	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.944						0.942			0.966	
Flt Protected		0.988			0.998			0.979				
Satd. Flow (prot)	0	1547	0	0	1796	0	0	1772	0	0	1614	0
Flt Permitted		0.988			0.998			0.979				
Satd. Flow (perm)	0	1547	0	0	1796	0	0	1772	0	0	1614	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		67.1			164.6			117.1			111.1	
Travel Time (s)		4.8			11.9			8.4			8.0	
Confl. Peds. (#/hr)	5					5	5		5	5		5
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles (%)	0%	0%	38%	0%	7%	0%	0%	0%	0%	0%	20%	0%
Adj. Flow (vph)	9	12	15	1	28	0	3	1	3	0	9	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	36	0	0	29	0	0	7	0	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	8	10	1	19	0	2	1	2	0	6	2
Future Volume (Veh/h)	6	8	10	1	19	0	2	1	2	0	6	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Hourly flow rate (vph)	9	12	15	1	28	0	3	1	3	0	9	3
Pedestrians		5			5						5	
Lane Width (m)		3.7			3.7						3.7	
Walking Speed (m/s)		1.1			1.1						1.1	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	33			27			80	72	24	81	80	38
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	33			27			80	72	24	81	80	38
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.2	3.3
p0 queue free %	99			100			100	100	100	100	99	100
cM capacity (veh/h)	1584			1600			890	813	1052	892	768	1030

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	36	29	7	12
Volume Left	9	1	3	0
Volume Right	15	0	3	3
cSH	1584	1600	939	820
Volume to Capacity	0.01	0.00	0.01	0.01
Queue Length 95th (m)	0.1	0.0	0.2	0.3
Control Delay (s)	1.9	0.3	8.9	9.5
Lane LOS	A	A	A	A
Approach Delay (s)	1.9	0.3	8.9	9.5
Approach LOS			A	A

Intersection Summary				
Average Delay	3.0			
Intersection Capacity Utilization	16.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	31	11	0	24	31	0
Future Volume (vph)	31	11	0	24	31	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.965					
Flt Protected					0.950	
Satd. Flow (prot)	1818	0	0	1883	1789	0
Flt Permitted					0.950	
Satd. Flow (perm)	1818	0	0	1883	1789	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	32.0			67.1	35.3	
Travel Time (s)	2.3			4.8	2.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	12	0	26	34	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	0	0	26	34	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	31	11	0	24	31	0
Future Volume (Veh/h)	31	11	0	24	31	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)	34	12	0	26	34	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			46		66	40
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			46		66	40
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		96	100
cM capacity (veh/h)			1562		939	1031

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	46	26	34
Volume Left	0	0	34
Volume Right	12	0	0
cSH	1700	1562	939
Volume to Capacity	0.03	0.00	0.04
Queue Length 95th (m)	0.0	0.0	0.9
Control Delay (s)	0.0	0.0	9.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.0
Approach LOS			A

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

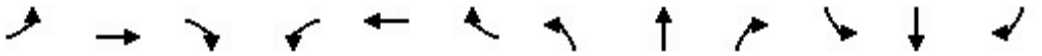
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	11	2	565	5	3	696
Future Volume (vph)	11	2	565	5	3	696
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	25.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.981		0.999			
Flt Protected	0.959				0.950	
Satd. Flow (prot)	1772	0	3575	0	1789	3579
Flt Permitted	0.959				0.950	
Satd. Flow (perm)	1772	0	3575	0	1789	3579
Link Speed (k/h)	48		50			50
Link Distance (m)	33.8		68.8			68.3
Travel Time (s)	2.5		5.0			4.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	2	614	5	3	757
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	0	619	0	3	757
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane			Yes			Yes
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.2%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	11	2	565	5	3	696
Future Volume (Veh/h)	11	2	565	5	3	696
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)	12	2	614	5	3	757
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (m)						396
pX, platoon unblocked						
vC, conflicting volume	1001	310			619	
vC1, stage 1 conf vol	616					
vC2, stage 2 conf vol	384					
vCu, unblocked vol	1001	310			619	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	100			100	
cM capacity (veh/h)	439	686			957	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	14	409	210	3	378	378
Volume Left	12	0	0	3	0	0
Volume Right	2	0	5	0	0	0
cSH	463	1700	1700	957	1700	1700
Volume to Capacity	0.03	0.24	0.12	0.00	0.22	0.22
Queue Length 95th (m)	0.7	0.0	0.0	0.1	0.0	0.0
Control Delay (s)	13.0	0.0	0.0	8.8	0.0	0.0
Lane LOS	B			A		
Approach Delay (s)	13.0	0.0		0.0		
Approach LOS	B					

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	29.2%	ICU Level of Service	A
Analysis Period (min)	15		

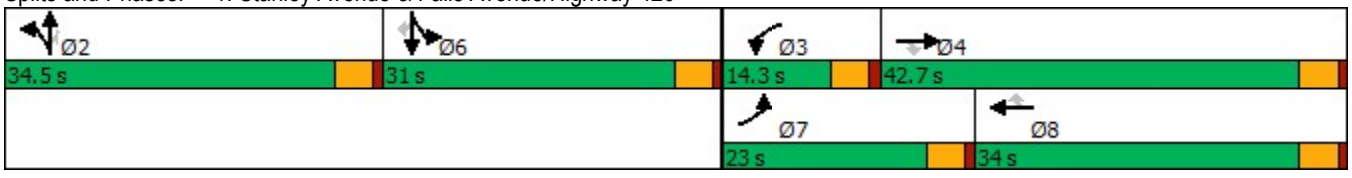


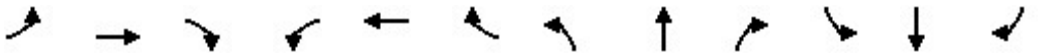
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	440	626	683	96	786	67	599	374	61	59	412	465
Future Volume (vph)	440	626	683	96	786	67	599	374	61	59	412	465
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.97	0.99		0.96	0.98	0.99	0.91	0.97		0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.979		0.950		
Satd. Flow (prot)	3404	5193	1585	1772	3579	1633	1612	3342	1555	1825	3614	1601
Flt Permitted	0.950			0.950			0.950	0.979		0.950		
Satd. Flow (perm)	3359	5193	1541	1760	3579	1574	1574	3308	1421	1771	3614	1514
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			551			134			134			227
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.6			321.9			327.8			140.2	
Travel Time (s)		16.1			19.3			23.6			10.1	
Confl. Peds. (#/hr)	12		8	8		12	21		37	37		21
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	1%	3%	3%	2%	0%	3%	2%	5%	0%	1%	2%
Adj. Flow (vph)	449	639	697	98	802	68	611	382	62	60	420	474
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	449	639	697	98	802	68	324	669	62	60	420	474
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	23.0	42.7	42.7	14.3	34.0	34.0	34.5	34.5	34.5	31.0	31.0	31.0
Total Split (%)	18.8%	34.9%	34.9%	11.7%	27.8%	27.8%	28.2%	28.2%	28.2%	25.3%	25.3%	25.3%
Maximum Green (s)	18.5	38.2	38.2	9.8	29.5	29.5	30.0	30.0	30.0	26.5	26.5	26.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
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
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	17.9	38.3	38.3	9.3	29.7	29.7	28.4	28.4	28.4	25.1	25.1	25.1
Actuated g/C Ratio	0.15	0.32	0.32	0.08	0.25	0.25	0.24	0.24	0.24	0.21	0.21	0.21
v/c Ratio	0.88	0.38	0.80	0.71	0.90	0.14	0.85	0.84	0.14	0.16	0.55	0.95
Control Delay	69.1	32.7	16.3	81.6	58.1	0.6	64.3	54.3	0.7	40.2	45.4	54.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.1	32.7	16.3	81.6	58.1	0.6	64.3	54.3	0.7	40.2	45.4	54.9
LOS	E	C	B	F	E	A	E	D	A	D	D	D
Approach Delay		35.5			56.4			54.2			49.8	
Approach LOS		D			E			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 122.5			
Actuated Cycle Length: 119.2			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 46.7		Intersection LOS: D	
Intersection Capacity Utilization 82.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Stanley Avenue & Falls Avenue/Highway 420

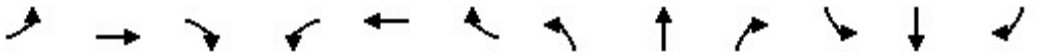




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	449	639	697	98	802	68	324	669	62	60	420	474
v/c Ratio	0.88	0.38	0.80	0.71	0.90	0.14	0.85	0.84	0.14	0.16	0.55	0.95
Control Delay	69.1	32.7	16.3	81.6	58.1	0.6	64.3	54.3	0.7	40.2	45.4	54.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.1	32.7	16.3	81.6	58.1	0.6	64.3	54.3	0.7	40.2	45.4	54.9
Queue Length 50th (m)	55.2	44.1	31.4	23.4	99.9	0.0	81.3	83.9	0.0	11.8	47.5	64.2
Queue Length 95th (m)	#81.8	55.4	89.3	#48.1	#136.7	0.0	#131.7	107.2	0.0	23.6	63.9	#129.1
Internal Link Dist (m)		243.6			297.9			303.8			116.2	
Turn Bay Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Base Capacity (vph)	530	1669	869	146	892	492	406	843	459	406	805	514
Starvation Cap Reductn	0	0	0	0	0	0	0	0	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	0.85	0.38	0.80	0.67	0.90	0.14	0.80	0.79	0.14	0.15	0.52	0.92

Intersection Summary

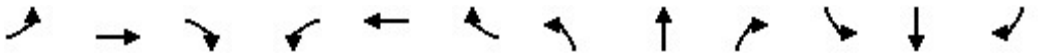
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	440	626	683	96	786	67	599	374	61	59	412	465
Future Volume (vph)	440	626	683	96	786	67	599	374	61	59	412	465
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.96	1.00	1.00	0.92	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	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	0.98	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3404	5193	1542	1772	3579	1575	1612	3342	1425	1825	3614	1516
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3404	5193	1542	1772	3579	1575	1612	3342	1425	1825	3614	1516
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	449	639	697	98	802	68	611	382	62	60	420	474
RTOR Reduction (vph)	0	0	374	0	0	51	0	0	47	0	0	179
Lane Group Flow (vph)	449	639	323	98	802	17	324	669	15	60	420	295
Confl. Peds. (#/hr)	12		8	8		12	21		37	37		21
Heavy Vehicles (%)	4%	1%	3%	3%	2%	0%	3%	2%	5%	0%	1%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	17.9	38.3	38.3	9.3	29.7	29.7	28.4	28.4	28.4	25.1	25.1	25.1
Effective Green, g (s)	17.9	38.3	38.3	9.3	29.7	29.7	28.4	28.4	28.4	25.1	25.1	25.1
Actuated g/C Ratio	0.15	0.32	0.32	0.08	0.25	0.25	0.24	0.24	0.24	0.21	0.21	0.21
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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)	511	1669	495	138	892	392	384	796	339	384	761	319
v/s Ratio Prot	c0.13	0.12		0.06	c0.22		c0.20	0.20		0.03	0.12	
v/s Ratio Perm			0.21			0.01			0.01			c0.19
v/c Ratio	0.88	0.38	0.65	0.71	0.90	0.04	0.84	0.84	0.04	0.16	0.55	0.92
Uniform Delay, d1	49.5	31.3	34.7	53.6	43.3	33.9	43.2	43.2	34.9	38.4	42.0	46.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.7	0.7	6.6	15.8	13.8	0.2	15.4	8.0	0.1	0.2	0.9	31.3
Delay (s)	65.2	31.9	41.3	69.4	57.0	34.1	58.7	51.2	35.0	38.5	42.8	77.4
Level of Service	E	C	D	E	E	C	E	D	C	D	D	E
Approach Delay (s)		43.9			56.7			52.5			59.7	
Approach LOS		D			E			D			E	

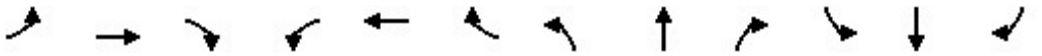
Intersection Summary			
HCM 2000 Control Delay	51.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	119.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	10	32	8	3	78	19	863	10	58	1018	48
Future Volume (vph)	43	10	32	8	3	78	19	863	10	58	1018	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.950			0.882			0.998			0.993	
Flt Protected		0.975			0.995		0.950			0.950		
Satd. Flow (prot)	0	1727	0	0	1664	0	1825	3538	0	1772	3544	0
Flt Permitted		0.975			0.995		0.950			0.950		
Satd. Flow (perm)	0	1727	0	0	1664	0	1825	3538	0	1772	3544	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		267.3			32.0			68.3			327.8	
Travel Time (s)		19.2			2.3			4.9			23.6	
Confl. Peds. (#/hr)	2		1	1		2	9		29	29		9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	6%	0%	0%	14%	0%	0%	0%	3%	0%	3%	2%	8%
Adj. Flow (vph)	46	11	34	9	3	83	20	918	11	62	1083	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	91	0	0	95	0	20	929	0	62	1134	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.7%		ICU Level of Service A	
Analysis Period (min) 15			



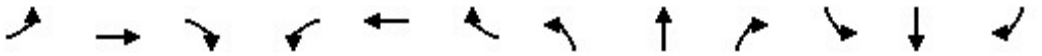
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	10	32	8	3	78	19	863	10	58	1018	48
Future Volume (Veh/h)	43	10	32	8	3	78	19	863	10	58	1018	48
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	46	11	34	9	3	83	20	918	11	62	1083	51
Pedestrians		9			29			1			2	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			3			0			0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)											328	
pX, platoon unblocked	0.92	0.92	0.92	0.92	0.92		0.92					
vC, conflicting volume	1827	2240	577	1698	2260	496	1143			958		
vC1, stage 1 conf vol	1242	1242		992	992							
vC2, stage 2 conf vol	586	998		706	1267							
vCu, unblocked vol	1728	2176	373	1589	2197	496	987			958		
tC, single (s)	7.6	6.5	6.9	7.8	6.5	6.9	4.1			4.2		
tC, 2 stage (s)	6.6	5.5		6.8	5.5							
tF (s)	3.6	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	70	94	94	95	98	84	97			91		
cM capacity (veh/h)	156	170	575	189	174	509	648			687		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	91	95	20	612	317	62	722	412
Volume Left	46	9	20	0	0	62	0	0
Volume Right	34	83	0	0	11	0	0	51
cSH	217	417	648	1700	1700	687	1700	1700
Volume to Capacity	0.42	0.23	0.03	0.36	0.19	0.09	0.42	0.24
Queue Length 95th (m)	14.6	6.6	0.7	0.0	0.0	2.3	0.0	0.0
Control Delay (s)	33.0	16.2	10.7	0.0	0.0	10.8	0.0	0.0
Lane LOS	D	C	B			B		
Approach Delay (s)	33.0	16.2	0.2			0.6		
Approach LOS	D	C						

Intersection Summary				
Average Delay	2.3			
Intersection Capacity Utilization	54.7%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	31	15	1	32	1	11	10	3	2	22	3
Future Volume (vph)	7	31	15	1	32	1	11	10	3	2	22	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.961			0.997			0.984			0.985	
Flt Protected		0.993			0.999			0.978			0.996	
Satd. Flow (prot)	0	1792	0	0	1805	0	0	1752	0	0	1885	0
Flt Permitted		0.993			0.999			0.978			0.996	
Satd. Flow (perm)	0	1792	0	0	1805	0	0	1752	0	0	1885	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		67.1			164.6			117.1			111.1	
Travel Time (s)		4.8			11.9			8.4			8.0	
Confl. Peds. (#/hr)	8		4	4		8	8		2	2		8
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Heavy Vehicles (%)	0%	4%	0%	0%	4%	100%	0%	13%	0%	0%	0%	0%
Adj. Flow (vph)	10	42	21	1	44	1	15	14	4	3	30	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	73	0	0	46	0	0	33	0	0	37	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	31	15	1	32	1	11	10	3	2	22	3
Future Volume (Veh/h)	7	31	15	1	32	1	11	10	3	2	22	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	10	42	21	1	44	1	15	14	4	3	30	4
Pedestrians		8			2			4			8	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			0			0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	53			67			150	132	58	140	142	60
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	53			67			150	132	58	140	142	60
tC, single (s)	4.1			4.1			7.1	6.6	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.1	3.3	3.5	4.0	3.3
p0 queue free %	99			100			98	98	100	100	96	100
cM capacity (veh/h)	1553			1541			773	725	1007	800	739	995

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	73	46	33	37
Volume Left	10	1	15	3
Volume Right	21	1	4	4
cSH	1553	1541	773	765
Volume to Capacity	0.01	0.00	0.04	0.05
Queue Length 95th (m)	0.1	0.0	1.0	1.2
Control Delay (s)	1.0	0.2	9.9	9.9
Lane LOS	A	A	A	A
Approach Delay (s)	1.0	0.2	9.9	9.9
Approach LOS			A	A

Intersection Summary				
Average Delay	4.1			
Intersection Capacity Utilization	19.4%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	65	13	0	62	29	0
Future Volume (vph)	65	13	0	62	29	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.978					
Flt Protected					0.950	
Satd. Flow (prot)	1842	0	0	1883	1789	0
Flt Permitted					0.950	
Satd. Flow (perm)	1842	0	0	1883	1789	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	32.0			67.1	35.3	
Travel Time (s)	2.3			4.8	2.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	14	0	67	32	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	85	0	0	67	32	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 14.2%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	65	13	0	62	29	0
Future Volume (Veh/h)	65	13	0	62	29	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)	71	14	0	67	32	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			85		145	78
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			85		145	78
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		96	100
cM capacity (veh/h)			1512		847	983

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	85	67	32
Volume Left	0	0	32
Volume Right	14	0	0
cSH	1700	1512	847
Volume to Capacity	0.05	0.00	0.04
Queue Length 95th (m)	0.0	0.0	0.9
Control Delay (s)	0.0	0.0	9.4
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.4
Approach LOS			A

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	14.2%	ICU Level of Service	A
Analysis Period (min)	15		

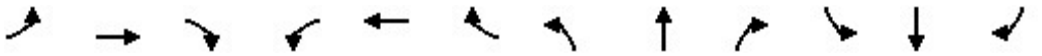
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	13	2	890	3	3	1057
Future Volume (vph)	13	2	890	3	3	1057
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	25.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.983					
Flt Protected	0.958				0.950	
Satd. Flow (prot)	1774	0	3579	0	1789	3579
Flt Permitted	0.958				0.950	
Satd. Flow (perm)	1774	0	3579	0	1789	3579
Link Speed (k/h)	48		50			50
Link Distance (m)	33.8		68.8			68.3
Travel Time (s)	2.5		5.0			4.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	2	967	3	3	1149
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	970	0	3	1149
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane			Yes			Yes
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.2%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	2	890	3	3	1057
Future Volume (Veh/h)	13	2	890	3	3	1057
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)	14	2	967	3	3	1149
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (m)						396
pX, platoon unblocked	0.94					
vC, conflicting volume	1549	485			970	
vC1, stage 1 conf vol	968					
vC2, stage 2 conf vol	580					
vCu, unblocked vol	1459	485			970	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	100			100	
cM capacity (veh/h)	294	528			706	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	16	645	325	3	574	574
Volume Left	14	0	0	3	0	0
Volume Right	2	0	3	0	0	0
cSH	312	1700	1700	706	1700	1700
Volume to Capacity	0.05	0.38	0.19	0.00	0.34	0.34
Queue Length 95th (m)	1.2	0.0	0.0	0.1	0.0	0.0
Control Delay (s)	17.2	0.0	0.0	10.1	0.0	0.0
Lane LOS	C			B		
Approach Delay (s)	17.2	0.0		0.0		
Approach LOS	C					

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		

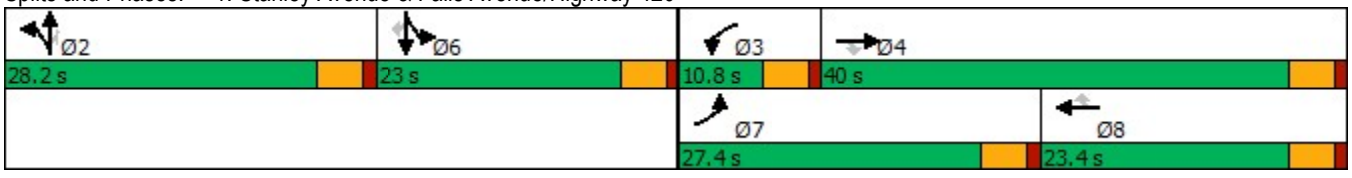


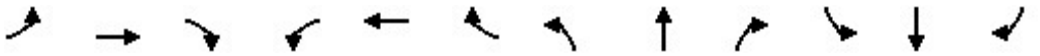
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	464	733	693	54	342	41	378	313	67	39	286	312
Future Volume (vph)	464	733	693	54	342	41	378	313	67	39	286	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.98	1.00		0.98	0.98	0.99	0.95	0.98		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.984		0.950		
Satd. Flow (prot)	3404	5142	1570	1772	3510	1526	1552	3215	1484	1825	3510	1585
Flt Permitted	0.950			0.950			0.950	0.984		0.950		
Satd. Flow (perm)	3370	5142	1536	1766	3510	1493	1520	3194	1405	1787	3510	1516
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			604			160			160			266
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.6			321.9			327.8			140.2	
Travel Time (s)		16.1			19.3			23.6			10.1	
Confl. Peds. (#/hr)	6		6	6		6	19		25	25		19
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	2%	4%	3%	4%	7%	7%	7%	10%	0%	4%	3%
Adj. Flow (vph)	516	814	770	60	380	46	420	348	74	43	318	347
Shared Lane Traffic (%)							40%					
Lane Group Flow (vph)	516	814	770	60	380	46	252	516	74	43	318	347
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	15.0	15.0	15.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	27.4	40.0	40.0	10.8	23.4	23.4	28.2	28.2	28.2	23.0	23.0	23.0
Total Split (%)	26.9%	39.2%	39.2%	10.6%	22.9%	22.9%	27.6%	27.6%	27.6%	22.5%	22.5%	22.5%
Maximum Green (s)	22.9	35.5	35.5	6.3	18.9	18.9	23.7	23.7	23.7	18.5	18.5	18.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
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
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	18.9	36.2	36.2	6.2	20.9	20.9	21.0	21.0	21.0	14.9	14.9	14.9
Actuated g/C Ratio	0.20	0.39	0.39	0.07	0.22	0.22	0.22	0.22	0.22	0.16	0.16	0.16
v/c Ratio	0.75	0.41	0.80	0.51	0.49	0.10	0.73	0.72	0.17	0.15	0.57	0.75
Control Delay	43.7	23.5	14.0	61.9	36.4	0.4	48.3	40.8	0.8	36.7	41.7	21.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.7	23.5	14.0	61.9	36.4	0.4	48.3	40.8	0.8	36.7	41.7	21.3
LOS	D	C	B	E	D	A	D	D	A	D	D	C
Approach Delay		25.0			36.1			39.6			31.4	
Approach LOS		C			D			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 102			
Actuated Cycle Length: 94			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 30.4		Intersection LOS: C	
Intersection Capacity Utilization 70.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Stanley Avenue & Falls Avenue/Highway 420

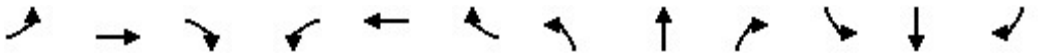




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	516	814	770	60	380	46	252	516	74	43	318	347
v/c Ratio	0.75	0.41	0.80	0.51	0.49	0.10	0.73	0.72	0.17	0.15	0.57	0.75
Control Delay	43.7	23.5	14.0	61.9	36.4	0.4	48.3	40.8	0.8	36.7	41.7	21.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.7	23.5	14.0	61.9	36.4	0.4	48.3	40.8	0.8	36.7	41.7	21.3
Queue Length 50th (m)	48.5	43.4	25.4	11.5	34.0	0.0	48.6	49.7	0.0	7.2	30.1	14.0
Queue Length 95th (m)	65.6	56.9	#94.6	#27.9	51.5	0.0	#81.9	70.1	0.0	16.6	43.6	45.2
Internal Link Dist (m)		243.6			297.9			303.8			116.2	
Turn Bay Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Base Capacity (vph)	841	1980	962	120	782	456	397	822	478	364	701	515
Starvation Cap Reductn	0	0	0	0	0	0	0	0	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	0.61	0.41	0.80	0.50	0.49	0.10	0.63	0.63	0.15	0.12	0.45	0.67

Intersection Summary

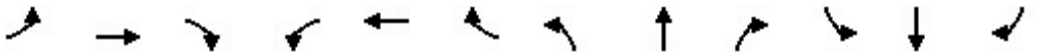
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	464	733	693	54	342	41	378	313	67	39	286	312
Future Volume (vph)	464	733	693	54	342	41	378	313	67	39	286	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.95	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	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	0.98	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3404	5142	1537	1772	3510	1494	1552	3215	1409	1825	3510	1520
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3404	5142	1537	1772	3510	1494	1552	3215	1409	1825	3510	1520
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	516	814	770	60	380	46	420	348	74	43	318	347
RTOR Reduction (vph)	0	0	374	0	0	35	0	0	58	0	0	224
Lane Group Flow (vph)	516	814	396	60	380	11	252	516	16	43	318	123
Confl. Peds. (#/hr)	6		6	6		6	19		25	25		19
Heavy Vehicles (%)	4%	2%	4%	3%	4%	7%	7%	7%	10%	0%	4%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	18.9	36.2	36.2	4.8	22.1	22.1	21.0	21.0	21.0	14.9	14.9	14.9
Effective Green, g (s)	18.9	36.2	36.2	4.8	22.1	22.1	21.0	21.0	21.0	14.9	14.9	14.9
Actuated g/C Ratio	0.20	0.38	0.38	0.05	0.23	0.23	0.22	0.22	0.22	0.16	0.16	0.16
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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)	677	1961	586	89	817	347	343	711	311	286	551	238
v/s Ratio Prot	c0.15	0.16		0.03	0.11		c0.16	0.16		0.02	c0.09	
v/s Ratio Perm			c0.26			0.01			0.01			0.08
v/c Ratio	0.76	0.42	0.68	0.67	0.47	0.03	0.73	0.73	0.05	0.15	0.58	0.52
Uniform Delay, d1	35.9	21.6	24.5	44.3	31.3	28.1	34.4	34.3	29.1	34.5	37.1	36.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1	0.6	6.2	18.3	1.9	0.2	7.9	3.7	0.1	0.2	1.5	1.9
Delay (s)	41.0	22.2	30.6	62.6	33.2	28.3	42.3	38.0	29.2	34.8	38.5	38.6
Level of Service	D	C	C	E	C	C	D	D	C	C	D	D
Approach Delay (s)		29.9			36.4			38.5			38.3	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	33.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	94.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



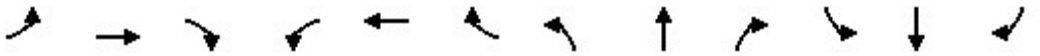
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	0	19	2	5	16	21	655	20	18	832	131
Future Volume (vph)	30	0	19	2	5	16	21	655	20	18	832	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.948			0.907			0.996			0.980	
Flt Protected		0.970			0.996		0.950			0.950		
Satd. Flow (prot)	0	1599	0	0	1735	0	1706	3421	0	1690	3449	0
Flt Permitted		0.970			0.996		0.950			0.950		
Satd. Flow (perm)	0	1599	0	0	1735	0	1706	3421	0	1690	3449	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		267.3			32.0			68.3			327.8	
Travel Time (s)		19.2			2.3			4.9			23.6	
Confl. Peds. (#/hr)	2		7	7		2	3		27	27		3
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	17%	0%	0%	0%	0%	0%	7%	6%	15%	8%	4%	2%
Adj. Flow (vph)	34	0	21	2	6	18	24	736	22	20	935	147
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	55	0	0	26	0	24	758	0	20	1082	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.4%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	0	19	2	5	16	21	655	20	18	832	131
Future Volume (Veh/h)	30	0	19	2	5	16	21	655	20	18	832	131
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	34	0	21	2	6	18	24	736	22	20	935	147
Pedestrians		3			27			7			2	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			3			1			0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)											328	
pX, platoon unblocked	0.97	0.97	0.97	0.97	0.97		0.97					
vC, conflicting volume	1490	1884	551	1358	1947	408	1085			785		
vC1, stage 1 conf vol	1052	1052		822	822							
vC2, stage 2 conf vol	439	833		536	1125							
vCu, unblocked vol	1442	1848	472	1304	1913	408	1023			785		
tC, single (s)	7.8	6.5	6.9	7.5	6.5	6.9	4.2			4.3		
tC, 2 stage (s)	6.8	5.5		6.5	5.5							
tF (s)	3.7	4.0	3.3	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	83	100	96	99	97	97	96			97		
cM capacity (veh/h)	203	232	522	273	214	581	623			771		

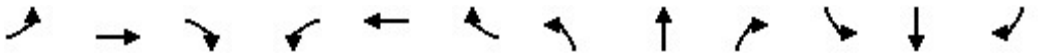
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	55	26	24	491	267	20	623	459
Volume Left	34	2	24	0	0	20	0	0
Volume Right	21	18	0	0	22	0	0	147
cSH	265	392	623	1700	1700	771	1700	1700
Volume to Capacity	0.21	0.07	0.04	0.29	0.16	0.03	0.37	0.27
Queue Length 95th (m)	5.8	1.6	0.9	0.0	0.0	0.6	0.0	0.0
Control Delay (s)	22.1	14.8	11.0	0.0	0.0	9.8	0.0	0.0
Lane LOS	C	B	B			A		
Approach Delay (s)	22.1	14.8	0.3			0.2		
Approach LOS	C	B						

Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	44.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	8	10	1	19	0	2	1	2	0	6	2
Future Volume (vph)	6	8	10	1	19	0	2	1	2	0	6	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.944						0.942			0.966	
Flt Protected		0.988			0.998			0.979				
Satd. Flow (prot)	0	1547	0	0	1796	0	0	1772	0	0	1614	0
Flt Permitted		0.988			0.998			0.979				
Satd. Flow (perm)	0	1547	0	0	1796	0	0	1772	0	0	1614	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		67.1			164.6			117.1			111.1	
Travel Time (s)		4.8			11.9			8.4			8.0	
Confl. Peds. (#/hr)	5					5	5		5	5		5
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles (%)	0%	0%	38%	0%	7%	0%	0%	0%	0%	0%	20%	0%
Adj. Flow (vph)	9	12	15	1	28	0	3	1	3	0	9	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	36	0	0	29	0	0	7	0	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

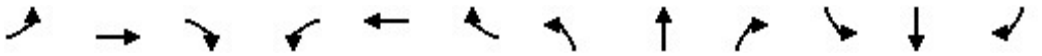
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	8	10	1	19	0	2	1	2	0	6	2
Future Volume (Veh/h)	6	8	10	1	19	0	2	1	2	0	6	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Hourly flow rate (vph)	9	12	15	1	28	0	3	1	3	0	9	3
Pedestrians		5			5						5	
Lane Width (m)		3.7			3.7						3.7	
Walking Speed (m/s)		1.1			1.1						1.1	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	33			27			80	72	24	81	80	38
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	33			27			80	72	24	81	80	38
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.2	3.3
p0 queue free %	99			100			100	100	100	100	99	100
cM capacity (veh/h)	1584			1600			890	813	1052	892	768	1030

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	36	29	7	12
Volume Left	9	1	3	0
Volume Right	15	0	3	3
cSH	1584	1600	939	820
Volume to Capacity	0.01	0.00	0.01	0.01
Queue Length 95th (m)	0.1	0.0	0.2	0.3
Control Delay (s)	1.9	0.3	8.9	9.5
Lane LOS	A	A	A	A
Approach Delay (s)	1.9	0.3	8.9	9.5
Approach LOS			A	A

Intersection Summary				
Average Delay	3.0			
Intersection Capacity Utilization	16.4%	ICU Level of Service	A	
Analysis Period (min)	15			

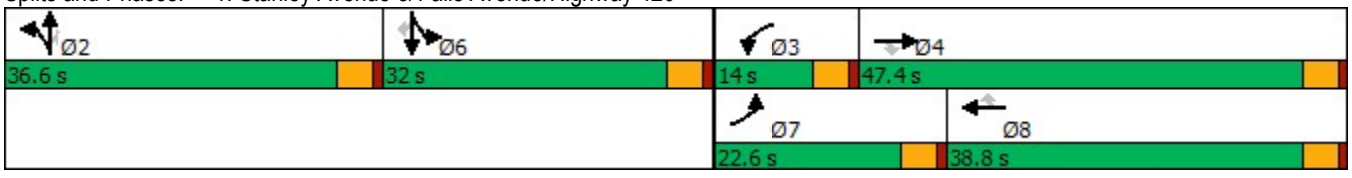


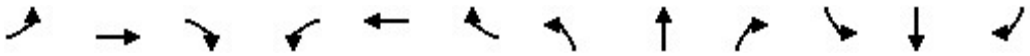
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	461	751	834	117	943	70	719	449	68	62	417	488
Future Volume (vph)	461	751	834	117	943	70	719	449	68	62	417	488
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.97	0.99		0.96	0.97	0.99	0.91	0.97		0.94
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.979		0.950		
Satd. Flow (prot)	3404	5193	1585	1772	3579	1633	1612	3342	1555	1825	3614	1601
Flt Permitted	0.950			0.950			0.950	0.979		0.950		
Satd. Flow (perm)	3366	5193	1539	1761	3579	1572	1572	3306	1414	1777	3614	1510
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			547			126			126			196
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.6			321.9			327.8			140.2	
Travel Time (s)		16.1			19.3			23.6			10.1	
Confl. Peds. (#/hr)	12		8	8		12	21		37	37		21
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	1%	3%	3%	2%	0%	3%	2%	5%	0%	1%	2%
Adj. Flow (vph)	470	766	851	119	962	71	734	458	69	63	426	498
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	470	766	851	119	962	71	389	803	69	63	426	498
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.6	47.4	47.4	14.0	38.8	38.8	36.6	36.6	36.6	32.0	32.0	32.0
Total Split (%)	17.4%	36.5%	36.5%	10.8%	29.8%	29.8%	28.2%	28.2%	28.2%	24.6%	24.6%	24.6%
Maximum Green (s)	18.1	42.9	42.9	9.5	34.3	34.3	32.1	32.1	32.1	27.5	27.5	27.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
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
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	18.1	42.9	42.9	9.5	34.3	34.3	32.1	32.1	32.1	27.5	27.5	27.5
Actuated g/C Ratio	0.14	0.33	0.33	0.07	0.26	0.26	0.25	0.25	0.25	0.21	0.21	0.21
v/c Ratio	0.99	0.45	0.97	0.92	1.02	0.14	0.98	0.97	0.16	0.16	0.56	1.05
Control Delay	95.5	35.2	40.5	120.3	81.2	0.8	88.5	74.0	0.8	43.3	49.1	86.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.5	35.2	40.5	120.3	81.2	0.8	88.5	74.0	0.8	43.3	49.1	86.0
LOS	F	D	D	F	F	A	F	E	A	D	D	F
Approach Delay		50.9			80.3			74.5			67.3	
Approach LOS		D			F			E			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Natural Cycle: 120			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.05			
Intersection Signal Delay: 65.5		Intersection LOS: E	
Intersection Capacity Utilization 91.8%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Stanley Avenue & Falls Avenue/Highway 420



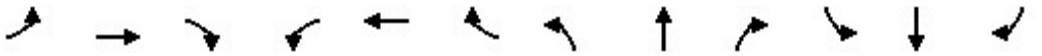


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	470	766	851	119	962	71	389	803	69	63	426	498
v/c Ratio	0.99	0.45	0.97	0.92	1.02	0.14	0.98	0.97	0.16	0.16	0.56	1.05
Control Delay	95.5	35.2	40.5	120.3	81.2	0.8	88.5	74.0	0.8	43.3	49.1	86.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.5	35.2	40.5	120.3	81.2	0.8	88.5	74.0	0.8	43.3	49.1	86.0
Queue Length 50th (m)	62.8	56.3	101.1	30.8	~137.2	0.0	109.3	112.6	0.0	13.3	51.7	~96.7
Queue Length 95th (m)	#97.4	68.7	#196.8	#67.7	#177.8	0.8	#178.3	#155.1	0.2	25.9	68.8	#163.7
Internal Link Dist (m)		243.6			297.9			303.8			116.2	
Turn Bay Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Base Capacity (vph)	473	1713	874	129	944	507	398	825	444	386	764	473
Starvation Cap Reductn	0	0	0	0	0	0	0	0	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	0.99	0.45	0.97	0.92	1.02	0.14	0.98	0.97	0.16	0.16	0.56	1.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

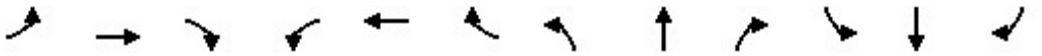
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	461	751	834	117	943	70	719	449	68	62	417	488
Future Volume (vph)	461	751	834	117	943	70	719	449	68	62	417	488
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.96	1.00	1.00	0.91	1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	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	0.98	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3404	5193	1539	1772	3579	1572	1612	3342	1414	1825	3614	1510
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3404	5193	1539	1772	3579	1572	1612	3342	1414	1825	3614	1510
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	470	766	851	119	962	71	734	458	69	63	426	498
RTOR Reduction (vph)	0	0	366	0	0	52	0	0	52	0	0	155
Lane Group Flow (vph)	470	766	485	119	962	19	389	803	17	63	426	343
Confl. Peds. (#/hr)	12		8	8		12	21		37	37		21
Heavy Vehicles (%)	4%	1%	3%	3%	2%	0%	3%	2%	5%	0%	1%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	18.1	42.9	42.9	9.5	34.3	34.3	32.1	32.1	32.1	27.5	27.5	27.5
Effective Green, g (s)	18.1	42.9	42.9	9.5	34.3	34.3	32.1	32.1	32.1	27.5	27.5	27.5
Actuated g/C Ratio	0.14	0.33	0.33	0.07	0.26	0.26	0.25	0.25	0.25	0.21	0.21	0.21
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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)	473	1713	507	129	944	414	398	825	349	386	764	319
v/s Ratio Prot	c0.14	0.15		0.07	0.27		c0.24	0.24		0.03	0.12	
v/s Ratio Perm			c0.31			0.01			0.01			c0.23
v/c Ratio	0.99	0.45	0.96	0.92	1.02	0.05	0.98	0.97	0.05	0.16	0.56	1.08
Uniform Delay, d1	55.9	34.2	42.6	59.9	47.9	35.7	48.6	48.5	37.3	41.9	45.8	51.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	39.5	0.8	30.3	55.7	34.2	0.2	38.7	24.8	0.1	0.2	0.9	72.3
Delay (s)	95.4	35.1	73.0	115.6	82.0	35.9	87.3	73.3	37.4	42.1	46.7	123.6
Level of Service	F	D	E	F	F	D	F	E	D	D	D	F
Approach Delay (s)		64.1			82.6			75.6			85.2	
Approach LOS		E			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	74.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



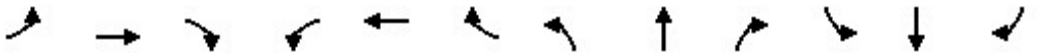
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	10	32	8	3	49	23	1062	12	56	1253	59
Future Volume (vph)	43	10	32	8	3	49	23	1062	12	56	1253	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.950			0.890			0.998			0.993	
Flt Protected		0.975			0.993		0.950			0.950		
Satd. Flow (prot)	0	1727	0	0	1665	0	1825	3538	0	1772	3544	0
Flt Permitted		0.975			0.993		0.950			0.950		
Satd. Flow (perm)	0	1727	0	0	1665	0	1825	3538	0	1772	3544	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		267.3			32.0			68.3			327.8	
Travel Time (s)		19.2			2.3			4.9			23.6	
Confl. Peds. (#/hr)	2		1	1		2	9		29	29		9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	6%	0%	0%	14%	0%	0%	0%	3%	0%	3%	2%	8%
Adj. Flow (vph)	46	11	34	9	3	52	24	1130	13	60	1333	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	91	0	0	64	0	24	1143	0	60	1396	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 61.5%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	10	32	8	3	49	23	1062	12	56	1253	59
Future Volume (Veh/h)	43	10	32	8	3	49	23	1062	12	56	1253	59
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	46	11	34	9	3	52	24	1130	13	60	1333	63
Pedestrians		9			29			1			2	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			3			0			0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)											328	
pX, platoon unblocked	0.91	0.91	0.91	0.91	0.91		0.91					
vC, conflicting volume	2162	2714	708	2040	2738	602	1405			1172		
vC1, stage 1 conf vol	1494	1494		1214	1214							
vC2, stage 2 conf vol	668	1220		827	1525							
vCu, unblocked vol	2082	2686	490	1949	2714	602	1253			1172		
tC, single (s)	7.6	6.5	6.9	7.8	6.5	6.9	4.1			4.2		
tC, 2 stage (s)	6.6	5.5		6.8	5.5							
tF (s)	3.6	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	58	91	93	93	98	88	95			89		
cM capacity (veh/h)	110	121	479	135	121	434	509			569		

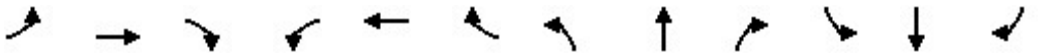
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	91	64	24	753	390	60	889	507
Volume Left	46	9	24	0	0	60	0	0
Volume Right	34	52	0	0	13	0	0	63
cSH	157	303	509	1700	1700	569	1700	1700
Volume to Capacity	0.58	0.21	0.05	0.44	0.23	0.11	0.52	0.30
Queue Length 95th (m)	23.0	6.0	1.1	0.0	0.0	2.7	0.0	0.0
Control Delay (s)	55.5	20.0	12.4	0.0	0.0	12.1	0.0	0.0
Lane LOS	F	C	B			B		
Approach Delay (s)	55.5	20.0	0.3			0.5		
Approach LOS	F	C						

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	61.5%	ICU Level of Service		B
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	31	15	1	32	1	11	10	3	2	22	3
Future Volume (vph)	7	31	15	1	32	1	11	10	3	2	22	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.961			0.997			0.984			0.985	
Flt Protected		0.993			0.999			0.978			0.996	
Satd. Flow (prot)	0	1792	0	0	1805	0	0	1752	0	0	1885	0
Flt Permitted		0.993			0.999			0.978			0.996	
Satd. Flow (perm)	0	1792	0	0	1805	0	0	1752	0	0	1885	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		67.1			164.6			117.1			111.1	
Travel Time (s)		4.8			11.9			8.4			8.0	
Confl. Peds. (#/hr)	8		4	4		8	8		2	2		8
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Heavy Vehicles (%)	0%	4%	0%	0%	4%	100%	0%	13%	0%	0%	0%	0%
Adj. Flow (vph)	10	42	21	1	44	1	15	14	4	3	30	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	73	0	0	46	0	0	33	0	0	37	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

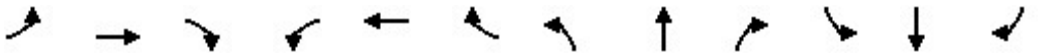
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	31	15	1	32	1	11	10	3	2	22	3
Future Volume (Veh/h)	7	31	15	1	32	1	11	10	3	2	22	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	10	42	21	1	44	1	15	14	4	3	30	4
Pedestrians		8			2			4			8	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			0			0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	53			67			150	132	58	140	142	60
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	53			67			150	132	58	140	142	60
tC, single (s)	4.1			4.1			7.1	6.6	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.1	3.3	3.5	4.0	3.3
p0 queue free %	99			100			98	98	100	100	96	100
cM capacity (veh/h)	1553			1541			773	725	1007	800	739	995

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	73	46	33	37
Volume Left	10	1	15	3
Volume Right	21	1	4	4
cSH	1553	1541	773	765
Volume to Capacity	0.01	0.00	0.04	0.05
Queue Length 95th (m)	0.1	0.0	1.0	1.2
Control Delay (s)	1.0	0.2	9.9	9.9
Lane LOS	A	A	A	A
Approach Delay (s)	1.0	0.2	9.9	9.9
Approach LOS			A	A

Intersection Summary				
Average Delay	4.1			
Intersection Capacity Utilization	19.4%	ICU Level of Service	A	
Analysis Period (min)	15			

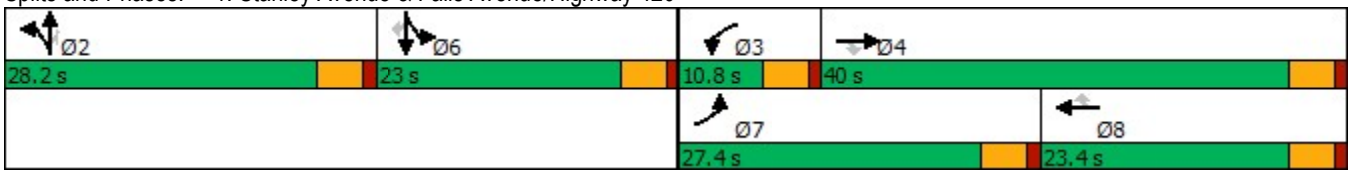


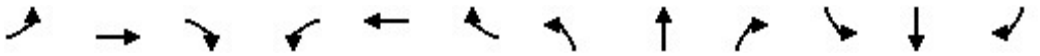
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	464	733	700	55	342	41	396	323	73	39	292	312
Future Volume (vph)	464	733	700	55	342	41	396	323	73	39	292	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.98	1.00		0.98	0.98	0.99	0.95	0.98		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.984		0.950		
Satd. Flow (prot)	3404	5142	1570	1772	3510	1526	1552	3215	1484	1825	3510	1585
Flt Permitted	0.950			0.950			0.950	0.984		0.950		
Satd. Flow (perm)	3370	5142	1536	1766	3510	1493	1520	3193	1405	1788	3510	1516
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			601			160			160			260
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.6			321.9			327.8			140.2	
Travel Time (s)		16.1			19.3			23.6			10.1	
Confl. Peds. (#/hr)	6		6	6		6	19		25	25		19
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	2%	4%	3%	4%	7%	7%	7%	10%	0%	4%	3%
Adj. Flow (vph)	516	814	778	61	380	46	440	359	81	43	324	347
Shared Lane Traffic (%)							41%					
Lane Group Flow (vph)	516	814	778	61	380	46	260	539	81	43	324	347
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	15.0	15.0	15.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	27.4	40.0	40.0	10.8	23.4	23.4	28.2	28.2	28.2	23.0	23.0	23.0
Total Split (%)	26.9%	39.2%	39.2%	10.6%	22.9%	22.9%	27.6%	27.6%	27.6%	22.5%	22.5%	22.5%
Maximum Green (s)	22.9	35.5	35.5	6.3	18.9	18.9	23.7	23.7	23.7	18.5	18.5	18.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
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
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	19.0	36.2	36.2	6.2	20.9	20.9	21.2	21.2	21.2	15.0	15.0	15.0
Actuated g/C Ratio	0.20	0.38	0.38	0.07	0.22	0.22	0.22	0.22	0.22	0.16	0.16	0.16
v/c Ratio	0.75	0.41	0.81	0.52	0.49	0.10	0.75	0.75	0.18	0.15	0.58	0.76
Control Delay	43.7	23.7	14.9	62.5	36.6	0.4	49.7	42.0	0.9	36.7	41.9	22.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.7	23.7	14.9	62.5	36.6	0.4	49.7	42.0	0.9	36.7	41.9	22.3
LOS	D	C	B	E	D	A	D	D	A	D	D	C
Approach Delay		25.3			36.4			40.5			32.1	
Approach LOS		C			D			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 102			
Actuated Cycle Length: 94.3			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 31.0		Intersection LOS: C	
Intersection Capacity Utilization 70.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Stanley Avenue & Falls Avenue/Highway 420

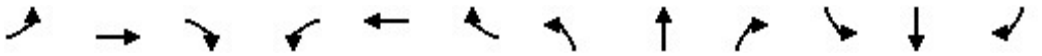




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	516	814	778	61	380	46	260	539	81	43	324	347
v/c Ratio	0.75	0.41	0.81	0.52	0.49	0.10	0.75	0.75	0.18	0.15	0.58	0.76
Control Delay	43.7	23.7	14.9	62.5	36.6	0.4	49.7	42.0	0.9	36.7	41.9	22.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.7	23.7	14.9	62.5	36.6	0.4	49.7	42.0	0.9	36.7	41.9	22.3
Queue Length 50th (m)	48.7	43.5	28.8	11.7	34.1	0.0	50.7	52.6	0.0	7.2	30.7	15.1
Queue Length 95th (m)	65.6	56.9	#115.7	#28.3	51.5	0.0	#89.0	73.5	0.0	16.6	44.4	46.8
Internal Link Dist (m)		243.6			297.9			303.8			116.2	
Turn Bay Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Base Capacity (vph)	838	1975	960	120	777	455	395	820	477	363	698	510
Starvation Cap Reductn	0	0	0	0	0	0	0	0	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	0.62	0.41	0.81	0.51	0.49	0.10	0.66	0.66	0.17	0.12	0.46	0.68

Intersection Summary

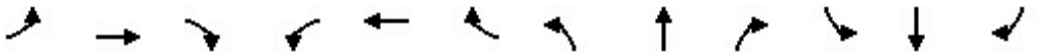
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	464	733	700	55	342	41	396	323	73	39	292	312
Future Volume (vph)	464	733	700	55	342	41	396	323	73	39	292	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.95	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	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	0.98	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3404	5142	1537	1772	3510	1494	1552	3214	1409	1825	3510	1520
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3404	5142	1537	1772	3510	1494	1552	3214	1409	1825	3510	1520
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	516	814	778	61	380	46	440	359	81	43	324	347
RTOR Reduction (vph)	0	0	372	0	0	35	0	0	63	0	0	219
Lane Group Flow (vph)	516	814	406	61	380	11	260	539	18	43	324	128
Confl. Peds. (#/hr)	6		6	6		6	19		25	25		19
Heavy Vehicles (%)	4%	2%	4%	3%	4%	7%	7%	7%	10%	0%	4%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	19.0	36.2	36.2	4.8	22.0	22.0	21.2	21.2	21.2	15.0	15.0	15.0
Effective Green, g (s)	19.0	36.2	36.2	4.8	22.0	22.0	21.2	21.2	21.2	15.0	15.0	15.0
Actuated g/C Ratio	0.20	0.38	0.38	0.05	0.23	0.23	0.22	0.22	0.22	0.16	0.16	0.16
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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)	679	1955	584	89	811	345	345	715	313	287	553	239
v/s Ratio Prot	c0.15	0.16		0.03	0.11		0.17	c0.17		0.02	c0.09	
v/s Ratio Perm			c0.26			0.01			0.01			0.08
v/c Ratio	0.76	0.42	0.69	0.69	0.47	0.03	0.75	0.75	0.06	0.15	0.59	0.54
Uniform Delay, d1	35.9	21.7	24.8	44.5	31.6	28.3	34.6	34.6	29.1	34.6	37.2	36.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.9	0.7	6.7	19.7	1.9	0.2	9.0	4.5	0.1	0.2	1.6	2.3
Delay (s)	40.8	22.4	31.5	64.1	33.5	28.5	43.6	39.1	29.2	34.8	38.8	39.2
Level of Service	D	C	C	E	C	C	D	D	C	C	D	D
Approach Delay (s)		30.3			36.9			39.5			38.8	
Approach LOS		C			D			D			D	

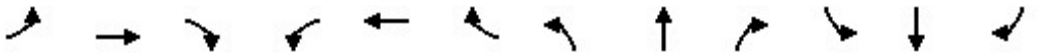
Intersection Summary			
HCM 2000 Control Delay	34.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	95.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	0	19	2	5	47	21	657	20	29	835	131
Future Volume (vph)	30	0	19	2	5	47	21	657	20	29	835	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.948			0.883			0.996			0.980	
Flt Protected		0.970			0.998		0.950			0.950		
Satd. Flow (prot)	0	1599	0	0	1693	0	1706	3421	0	1690	3449	0
Flt Permitted		0.970			0.998		0.950			0.950		
Satd. Flow (perm)	0	1599	0	0	1693	0	1706	3421	0	1690	3449	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		267.3			32.0			68.3			327.8	
Travel Time (s)		19.2			2.3			4.9			23.6	
Confl. Peds. (#/hr)	2		7	7		2	3		27	27		3
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	17%	0%	0%	0%	0%	0%	7%	6%	15%	8%	4%	2%
Adj. Flow (vph)	34	0	21	2	6	53	24	738	22	33	938	147
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	55	0	0	61	0	24	760	0	33	1085	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

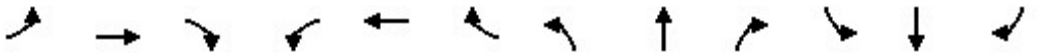
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	0	19	2	5	47	21	657	20	29	835	131
Future Volume (Veh/h)	30	0	19	2	5	47	21	657	20	29	835	131
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	34	0	21	2	6	53	24	738	22	33	938	147
Pedestrians		3			27			7			2	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			3			1			0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)											328	
pX, platoon unblocked	0.97	0.97	0.97	0.97	0.97		0.97					
vC, conflicting volume	1556	1916	552	1387	1978	409	1088			787		
vC1, stage 1 conf vol	1080	1080		824	824							
vC2, stage 2 conf vol	475	835		563	1154							
vCu, unblocked vol	1507	1879	471	1333	1944	409	1024			787		
tC, single (s)	7.8	6.5	6.9	7.5	6.5	6.9	4.2			4.3		
tC, 2 stage (s)	6.8	5.5		6.5	5.5							
tF (s)	3.7	4.0	3.3	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	82	100	96	99	97	91	96			96		
cM capacity (veh/h)	187	221	522	267	205	580	622			769		

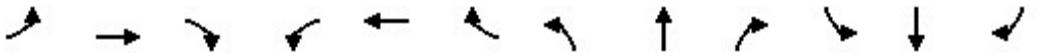
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	55	61	24	492	268	33	625	460
Volume Left	34	2	24	0	0	33	0	0
Volume Right	21	53	0	0	22	0	0	147
cSH	248	477	622	1700	1700	769	1700	1700
Volume to Capacity	0.22	0.13	0.04	0.29	0.16	0.04	0.37	0.27
Queue Length 95th (m)	6.3	3.3	0.9	0.0	0.0	1.0	0.0	0.0
Control Delay (s)	23.6	13.7	11.0	0.0	0.0	9.9	0.0	0.0
Lane LOS	C	B	B			A		
Approach Delay (s)	23.6	13.7	0.3			0.3		
Approach LOS	C	B						

Intersection Summary				
Average Delay	1.3			
Intersection Capacity Utilization	44.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	8	10	1	19	0	2	1	2	0	6	2
Future Volume (vph)	6	8	10	1	19	0	2	1	2	0	6	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.944						0.942			0.966	
Flt Protected		0.988			0.998			0.979				
Satd. Flow (prot)	0	1547	0	0	1796	0	0	1772	0	0	1614	0
Flt Permitted		0.988			0.998			0.979				
Satd. Flow (perm)	0	1547	0	0	1796	0	0	1772	0	0	1614	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		67.1			164.6			117.1			111.1	
Travel Time (s)		4.8			11.9			8.4			8.0	
Confl. Peds. (#/hr)	5					5	5		5	5		5
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles (%)	0%	0%	38%	0%	7%	0%	0%	0%	0%	0%	20%	0%
Adj. Flow (vph)	9	12	15	1	28	0	3	1	3	0	9	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	36	0	0	29	0	0	7	0	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	8	10	1	19	0	2	1	2	0	6	2
Future Volume (Veh/h)	6	8	10	1	19	0	2	1	2	0	6	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Hourly flow rate (vph)	9	12	15	1	28	0	3	1	3	0	9	3
Pedestrians		5			5						5	
Lane Width (m)		3.7			3.7						3.7	
Walking Speed (m/s)		1.1			1.1						1.1	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	33			27			80	72	24	81	80	38
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	33			27			80	72	24	81	80	38
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.2	3.3
p0 queue free %	99			100			100	100	100	100	99	100
cM capacity (veh/h)	1584			1600			890	813	1052	892	768	1030

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	36	29	7	12
Volume Left	9	1	3	0
Volume Right	15	0	3	3
cSH	1584	1600	939	820
Volume to Capacity	0.01	0.00	0.01	0.01
Queue Length 95th (m)	0.1	0.0	0.2	0.3
Control Delay (s)	1.9	0.3	8.9	9.5
Lane LOS	A	A	A	A
Approach Delay (s)	1.9	0.3	8.9	9.5
Approach LOS			A	A

Intersection Summary				
Average Delay	3.0			
Intersection Capacity Utilization	16.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	31	11	0	24	31	0
Future Volume (vph)	31	11	0	24	31	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.965					
Flt Protected					0.950	
Satd. Flow (prot)	1818	0	0	1883	1789	0
Flt Permitted					0.950	
Satd. Flow (perm)	1818	0	0	1883	1789	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	32.0			67.1	35.3	
Travel Time (s)	2.3			4.8	2.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	12	0	26	34	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	0	0	26	34	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	31	11	0	24	31	0
Future Volume (Veh/h)	31	11	0	24	31	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)	34	12	0	26	34	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			46		66	40
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			46		66	40
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		96	100
cM capacity (veh/h)			1562		939	1031

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	46	26	34
Volume Left	0	0	34
Volume Right	12	0	0
cSH	1700	1562	939
Volume to Capacity	0.03	0.00	0.04
Queue Length 95th (m)	0.0	0.0	0.9
Control Delay (s)	0.0	0.0	9.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.0
Approach LOS			A

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	11	2	698	5	3	859
Future Volume (vph)	11	2	698	5	3	859
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	25.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.981		0.999			
Flt Protected	0.959				0.950	
Satd. Flow (prot)	1772	0	3575	0	1789	3579
Flt Permitted	0.959				0.950	
Satd. Flow (perm)	1772	0	3575	0	1789	3579
Link Speed (k/h)	48		50			50
Link Distance (m)	33.8		68.8			68.3
Travel Time (s)	2.5		5.0			4.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	2	759	5	3	934
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	0	764	0	3	934
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane			Yes			Yes
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	11	2	698	5	3	859
Future Volume (Veh/h)	11	2	698	5	3	859
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)	12	2	759	5	3	934
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (m)						396
pX, platoon unblocked						
vC, conflicting volume	1234	382			764	
vC1, stage 1 conf vol	762					
vC2, stage 2 conf vol	473					
vCu, unblocked vol	1234	382			764	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	100			100	
cM capacity (veh/h)	366	616			845	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	14	506	258	3	467	467
Volume Left	12	0	0	3	0	0
Volume Right	2	0	5	0	0	0
cSH	389	1700	1700	845	1700	1700
Volume to Capacity	0.04	0.30	0.15	0.00	0.27	0.27
Queue Length 95th (m)	0.8	0.0	0.0	0.1	0.0	0.0
Control Delay (s)	14.6	0.0	0.0	9.3	0.0	0.0
Lane LOS	B			A		
Approach Delay (s)	14.6	0.0		0.0		
Approach LOS	B					

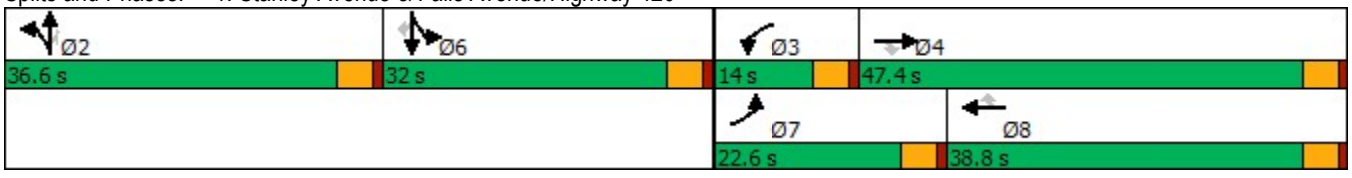
Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	33.7%	ICU Level of Service	A
Analysis Period (min)	15		

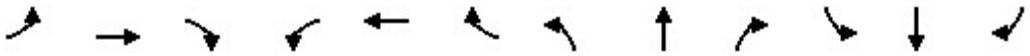
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	461	751	842	118	943	70	735	460	74	62	431	488
Future Volume (vph)	461	751	842	118	943	70	735	460	74	62	431	488
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.97	0.99		0.96	0.98	0.99	0.91	0.97		0.94
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.979		0.950		
Satd. Flow (prot)	3404	5193	1585	1772	3579	1633	1612	3342	1555	1825	3614	1601
Flt Permitted	0.950			0.950			0.950	0.979		0.950		
Satd. Flow (perm)	3366	5193	1539	1761	3579	1572	1573	3306	1414	1778	3614	1510
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			544			126			126			195
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		267.6			321.9			327.8			140.2	
Travel Time (s)		16.1			19.3			23.6			10.1	
Confl. Peds. (#/hr)	12		8	8		12	21		37	37		21
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	1%	3%	3%	2%	0%	3%	2%	5%	0%	1%	2%
Adj. Flow (vph)	470	766	859	120	962	71	750	469	76	63	440	498
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	470	766	859	120	962	71	397	822	76	63	440	498
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.6	47.4	47.4	14.0	38.8	38.8	36.6	36.6	36.6	32.0	32.0	32.0
Total Split (%)	17.4%	36.5%	36.5%	10.8%	29.8%	29.8%	28.2%	28.2%	28.2%	24.6%	24.6%	24.6%
Maximum Green (s)	18.1	42.9	42.9	9.5	34.3	34.3	32.1	32.1	32.1	27.5	27.5	27.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
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
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	18.1	42.9	42.9	9.5	34.3	34.3	32.1	32.1	32.1	27.5	27.5	27.5
Actuated g/C Ratio	0.14	0.33	0.33	0.07	0.26	0.26	0.25	0.25	0.25	0.21	0.21	0.21
v/c Ratio	0.99	0.45	0.99	0.93	1.02	0.14	1.00	1.00	0.17	0.16	0.58	1.05
Control Delay	95.5	35.2	43.4	122.0	81.2	0.8	93.4	79.3	1.7	43.3	49.5	86.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.5	35.2	43.4	122.0	81.2	0.8	93.4	79.3	1.7	43.3	49.5	86.1
LOS	F	D	D	F	F	A	F	E	A	D	D	F
Approach Delay		52.1			80.5			79.1			67.3	
Approach LOS		D			F			E			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Natural Cycle: 120			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.05			
Intersection Signal Delay: 67.1		Intersection LOS: E	
Intersection Capacity Utilization 92.3%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Stanley Avenue & Falls Avenue/Highway 420



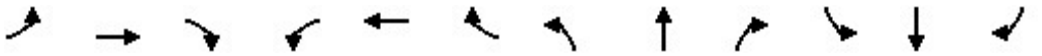


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	470	766	859	120	962	71	397	822	76	63	440	498
v/c Ratio	0.99	0.45	0.99	0.93	1.02	0.14	1.00	1.00	0.17	0.16	0.58	1.05
Control Delay	95.5	35.2	43.4	122.0	81.2	0.8	93.4	79.3	1.7	43.3	49.5	86.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.5	35.2	43.4	122.0	81.2	0.8	93.4	79.3	1.7	43.3	49.5	86.1
Queue Length 50th (m)	62.8	56.3	106.6	31.1	~137.2	0.0	112.1	116.2	0.0	13.3	53.7	~97.2
Queue Length 95th (m)	#97.4	68.7	#202.2	#68.8	#177.8	0.8	#183.0	#160.9	2.0	25.9	71.0	#164.2
Internal Link Dist (m)		243.6			297.9			303.8			116.2	
Turn Bay Length (m)	160.0		55.0	270.0		55.0	30.0		20.0	35.0		15.0
Base Capacity (vph)	473	1713	872	129	944	507	398	825	444	386	764	473
Starvation Cap Reductn	0	0	0	0	0	0	0	0	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	0.99	0.45	0.99	0.93	1.02	0.14	1.00	1.00	0.17	0.16	0.58	1.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

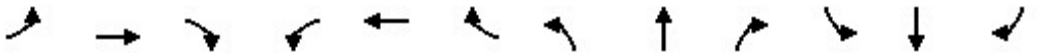
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	461	751	842	118	943	70	735	460	74	62	431	488
Future Volume (vph)	461	751	842	118	943	70	735	460	74	62	431	488
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.96	1.00	1.00	0.91	1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	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	0.98	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3404	5193	1539	1772	3579	1572	1612	3342	1414	1825	3614	1510
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3404	5193	1539	1772	3579	1572	1612	3342	1414	1825	3614	1510
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	470	766	859	120	962	71	750	469	76	63	440	498
RTOR Reduction (vph)	0	0	364	0	0	52	0	0	57	0	0	154
Lane Group Flow (vph)	470	766	495	120	962	19	397	822	19	63	440	344
Confl. Peds. (#/hr)	12		8	8		12	21		37	37		21
Heavy Vehicles (%)	4%	1%	3%	3%	2%	0%	3%	2%	5%	0%	1%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	18.1	42.9	42.9	9.5	34.3	34.3	32.1	32.1	32.1	27.5	27.5	27.5
Effective Green, g (s)	18.1	42.9	42.9	9.5	34.3	34.3	32.1	32.1	32.1	27.5	27.5	27.5
Actuated g/C Ratio	0.14	0.33	0.33	0.07	0.26	0.26	0.25	0.25	0.25	0.21	0.21	0.21
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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)	473	1713	507	129	944	414	398	825	349	386	764	319
v/s Ratio Prot	c0.14	0.15		0.07	0.27		c0.25	0.25		0.03	0.12	
v/s Ratio Perm			c0.32			0.01			0.01			c0.23
v/c Ratio	0.99	0.45	0.98	0.93	1.02	0.05	1.00	1.00	0.05	0.16	0.58	1.08
Uniform Delay, d1	55.9	34.2	43.0	59.9	47.9	35.7	48.9	48.9	37.4	41.9	46.0	51.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	39.5	0.8	34.3	58.0	34.2	0.2	44.1	30.2	0.1	0.2	1.1	73.1
Delay (s)	95.4	35.1	77.4	117.9	82.0	35.9	93.0	79.1	37.4	42.1	47.1	124.4
Level of Service	F	D	E	F	F	D	F	E	D	D	D	F
Approach Delay (s)		65.9			82.9			80.9			85.2	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	76.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	92.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



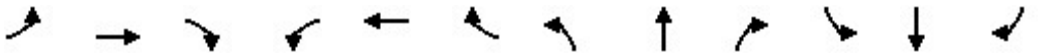
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	10	32	8	3	78	23	1064	12	69	1256	59
Future Volume (vph)	43	10	32	8	3	78	23	1064	12	69	1256	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.950			0.882			0.998			0.993	
Flt Protected		0.975			0.995		0.950			0.950		
Satd. Flow (prot)	0	1727	0	0	1664	0	1825	3538	0	1772	3544	0
Flt Permitted		0.975			0.995		0.950			0.950		
Satd. Flow (perm)	0	1727	0	0	1664	0	1825	3538	0	1772	3544	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		267.3			32.0			68.3			327.8	
Travel Time (s)		19.2			2.3			4.9			23.6	
Confl. Peds. (#/hr)	2		1	1		2	9		29	29		9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	6%	0%	0%	14%	0%	0%	0%	3%	0%	3%	2%	8%
Adj. Flow (vph)	46	11	34	9	3	83	24	1132	13	73	1336	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	91	0	0	95	0	24	1145	0	73	1399	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 61.6%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	10	32	8	3	78	23	1064	12	69	1256	59
Future Volume (Veh/h)	43	10	32	8	3	78	23	1064	12	69	1256	59
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	46	11	34	9	3	83	24	1132	13	73	1336	63
Pedestrians		9			29			1			2	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			3			0			0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)											328	
pX, platoon unblocked	0.91	0.91	0.91	0.91	0.91		0.91					
vC, conflicting volume	2223	2744	710	2070	2770	604	1408			1174		
vC1, stage 1 conf vol	1522	1522		1216	1216							
vC2, stage 2 conf vol	700	1222		854	1554							
vCu, unblocked vol	2146	2719	482	1977	2747	604	1250			1174		
tC, single (s)	7.6	6.5	6.9	7.8	6.5	6.9	4.1			4.2		
tC, 2 stage (s)	6.6	5.5		6.8	5.5							
tF (s)	3.6	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	54	90	93	93	97	81	95			87		
cM capacity (veh/h)	100	113	483	132	115	433	508			568		

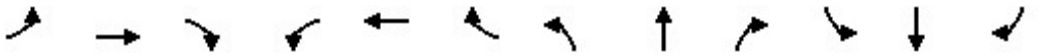
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	91	95	24	755	390	73	891	508
Volume Left	46	9	24	0	0	73	0	0
Volume Right	34	83	0	0	13	0	0	63
cSH	144	332	508	1700	1700	568	1700	1700
Volume to Capacity	0.63	0.29	0.05	0.44	0.23	0.13	0.52	0.30
Queue Length 95th (m)	25.8	8.8	1.1	0.0	0.0	3.3	0.0	0.0
Control Delay (s)	65.0	20.1	12.4	0.0	0.0	12.3	0.0	0.0
Lane LOS	F	C	B			B		
Approach Delay (s)	65.0	20.1	0.3			0.6		
Approach LOS	F	C						

Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	61.6%	ICU Level of Service	B	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	31	15	1	32	1	11	10	3	2	22	3
Future Volume (vph)	7	31	15	1	32	1	11	10	3	2	22	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.961			0.997			0.984			0.985	
Flt Protected		0.993			0.999			0.978			0.996	
Satd. Flow (prot)	0	1792	0	0	1805	0	0	1752	0	0	1885	0
Flt Permitted		0.993			0.999			0.978			0.996	
Satd. Flow (perm)	0	1792	0	0	1805	0	0	1752	0	0	1885	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		67.1			164.6			117.1			111.1	
Travel Time (s)		4.8			11.9			8.4			8.0	
Confl. Peds. (#/hr)	8		4	4		8	8		2	2		8
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Heavy Vehicles (%)	0%	4%	0%	0%	4%	100%	0%	13%	0%	0%	0%	0%
Adj. Flow (vph)	10	42	21	1	44	1	15	14	4	3	30	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	73	0	0	46	0	0	33	0	0	37	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	31	15	1	32	1	11	10	3	2	22	3
Future Volume (Veh/h)	7	31	15	1	32	1	11	10	3	2	22	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	10	42	21	1	44	1	15	14	4	3	30	4
Pedestrians		8			2			4			8	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			0			0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	53			67			150	132	58	140	142	60
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	53			67			150	132	58	140	142	60
tC, single (s)	4.1			4.1			7.1	6.6	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.1	3.3	3.5	4.0	3.3
p0 queue free %	99			100			98	98	100	100	96	100
cM capacity (veh/h)	1553			1541			773	725	1007	800	739	995

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	73	46	33	37
Volume Left	10	1	15	3
Volume Right	21	1	4	4
cSH	1553	1541	773	765
Volume to Capacity	0.01	0.00	0.04	0.05
Queue Length 95th (m)	0.1	0.0	1.0	1.2
Control Delay (s)	1.0	0.2	9.9	9.9
Lane LOS	A	A	A	A
Approach Delay (s)	1.0	0.2	9.9	9.9
Approach LOS			A	A

Intersection Summary				
Average Delay	4.1			
Intersection Capacity Utilization	19.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	65	13	0	62	29	0
Future Volume (vph)	65	13	0	62	29	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.978					
Flt Protected					0.950	
Satd. Flow (prot)	1842	0	0	1883	1789	0
Flt Permitted					0.950	
Satd. Flow (perm)	1842	0	0	1883	1789	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	32.0			67.1	35.3	
Travel Time (s)	2.3			4.8	2.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	14	0	67	32	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	85	0	0	67	32	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	14.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	65	13	0	62	29	0
Future Volume (Veh/h)	65	13	0	62	29	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)	71	14	0	67	32	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			85		145	78
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			85		145	78
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		96	100
cM capacity (veh/h)			1512		847	983

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	85	67	32
Volume Left	0	0	32
Volume Right	14	0	0
cSH	1700	1512	847
Volume to Capacity	0.05	0.00	0.04
Queue Length 95th (m)	0.0	0.0	0.9
Control Delay (s)	0.0	0.0	9.4
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.4
Approach LOS			A

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	14.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	13	2	1098	3	3	1305
Future Volume (vph)	13	2	1098	3	3	1305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	25.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.983					
Flt Protected	0.958				0.950	
Satd. Flow (prot)	1774	0	3579	0	1789	3579
Flt Permitted	0.958				0.950	
Satd. Flow (perm)	1774	0	3579	0	1789	3579
Link Speed (k/h)	48		50			50
Link Distance (m)	33.8		68.8			68.3
Travel Time (s)	2.5		5.0			4.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	2	1193	3	3	1418
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	1196	0	3	1418
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane			Yes			Yes
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.1%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	2	1098	3	3	1305
Future Volume (Veh/h)	13	2	1098	3	3	1305
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)	14	2	1193	3	3	1418
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (m)						396
pX, platoon unblocked	0.93					
vC, conflicting volume	1910	598			1196	
vC1, stage 1 conf vol	1194					
vC2, stage 2 conf vol	715					
vCu, unblocked vol	1821	598			1196	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	100			99	
cM capacity (veh/h)	224	445			579	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	16	795	401	3	709	709
Volume Left	14	0	0	3	0	0
Volume Right	2	0	3	0	0	0
cSH	239	1700	1700	579	1700	1700
Volume to Capacity	0.07	0.47	0.24	0.01	0.42	0.42
Queue Length 95th (m)	1.6	0.0	0.0	0.1	0.0	0.0
Control Delay (s)	21.2	0.0	0.0	11.2	0.0	0.0
Lane LOS	C			B		
Approach Delay (s)	21.2	0.0		0.0		
Approach LOS	C					

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix E

Transportation Tomorrow Survey 2016

AM Inbound
Tue Jun 13 2023 11:57:02 GMT-0400 (Eastern Daylight Time) - Run Time: 2616ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of origin - pd_orig
Column: 2006 GTA zone of destination - gta06_dest

RowG:
ColG:(6207,6208,6216,6217,6218)
TblG:

Filters:
Start time of trip - start_time In 600-900
and
Trip purpose of destination - purp_dest In H,

Trip 2016
Table:

,1	N	S	E	W	N Trips	S Trips	E Trips	W Trips
Niagara Fall	225	0.2	0.2	0.1	0.5	45	45	22.5	112.5
						0	0	0	0
						0	0	0	0
						0	0	0	0
						0	0	0	0
						0	0	0	0
						0	0	0	0
						0	0	0	0
						0	0	0	0
Sum	**225**					**45**	**45**	**22.5**	**112.5**
						20%	20%	10%	50%

Distribution - TTS

		N	S	E	W	
AM	Inbound	20%	20%	10%	50%	100%
	Outbound	20%	21%	14%	45%	100%
PM	Inbound	19%	11%	11%	59%	100%
	Outbound	20%	25%	15%	40%	100%

AM Outbound
Tue Jun 13 2023 12:00:34 GMT-0400 (Eastern Daylight Time) - Run Time: 2628ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of destination - pd_dest
Column: 2006 GTA zone of origin - gta06_orig

RowG:
ColG:(6207,6208,6216,6217,6218)
TblG:

Filters:
Start time of trip - start_time In 600-900
and
Trip purpose of origin - purp_orig In H,

Trip 2016
Table:

,1	N	S	E	W	N Trips	S Trips	E Trips	W Trips
Hamilton	177				1	0	0	0	177
Lincoln	70				1	0	0	0	70
Niagara-on-	159	0.5			0.5	79.5	0	0	79.5
St. Catharin	161				1	0	0	0	161
Thorold	37				1	0	0	0	37
Niagara Fal	1770	0.25	0.25	0.2	0.3	442.5	442.5	354	531
Welland	90		0.5		0.5	0	45	0	45
Port Colbori	5		0.5		0.5	0	2.5	0	2.5
Fort Erie	124		0.5		0.5	0	62	0	62
Sum	**2593**					**522**	**552**	**354**	**1165**
						20%	21%	14%	45%

Distribution - Adjusted

		N	S	E	W	
AM	Inbound	20%	20%	10%	50%	100%
	Outbound	20%	20%	15%	45%	100%
PM	Inbound	20%	10%	10%	60%	100%
	Outbound	20%	25%	15%	40%	100%

PM Inbound

Tue Jun 13 2023 11:59:27 GMT-0400 (Eastern Daylight Time) - Run Time: 2342ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of origin - pd_orig
Column: 2006 GTA zone of destination - gta06_dest

RowG:
ColG:(6207,6208,6216,6217,6218)
TblG:

Filters:
Start time of trip - start_time In 1600-1900
and
Trip purpose of destination - purp_dest In H,

Trip 2016
Table:

,1	N	S	E	W	N Trips	S Trips	E Trips	W Trips
Oshawa	89				1	0	0	0	89
Stoney Cree	69				1	0	0	0	69
Hamilton	167				1	0	0	0	167
Niagara-on-	136	0.5			0.5	68	0	0	68
St. Catharin	358				1	0	0	0	358
Thorold	61				1	0	0	0	61
Niagara Fall	1406	0.2	0.2	0.2	0.4	281.2	281.2	281.2	562.4
Welland	155	0.5			0.5	77.5	0	0	77.5
Fort Erie	109	0.5			0.5	54.5	0	0	54.5
Sum	**2550**					**481.2**	**281.2**	**281.2**	**1506.4**
						19%	11%	11%	59%

PM Outbound

Tue Jun 13 2023 12:00:14 GMT-0400 (Eastern Daylight Time) - Run Time: 2472ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of destination - pd_dest
Column: 2006 GTA zone of origin - gta06_orig

RowG:
ColG:(6207,6208,6216,6217,6218)
TblG:

Filters:
Start time of trip - start_time In 1600-1900
and
Trip purpose of origin - purp_orig In H,

Trip 2016
Table:

,1	N	S	E	W	N Trips	S Trips	E Trips	W Trips
Stoney Cree	69							
Pelham	13							
Niagara-on-	8							
St. Catharin	14							
Thorold	13							
Niagara Fal	906	0.2	0.25	0.15	0.4	181.2	226.5	135.9	362.4
Welland	75							
Port Colbori	14							
External	26							
Sum	**906**					**181.2**	**226.5**	**135.9**	**362.4**
						20%	25%	15%	40%


GHD