Traffic Impact Study

The Kingstonian

9-21 North Front Street

City of Kingston, New York

CM Project No. 118-025

Prepared For:

City of Kingston Planning Board
420 Broadway
Kingston, New York

July 23, 2019

Prepared By:
Creighton Manning
2 Winners Circle
Albany, New York 12205
(518) 446-0396

Table of Contents

List of Tables

List of Figures

List of Appendices

CHAPTER I
INTRODUCTION

This report summarizes the results of a Traffic Impact Study completed for the proposed *Kingstonian Mixed-use Development* located in the City of Kingston, Ulster County, New York. The site is comprised of three parcels located on Fair Street Extension between N. Front Street and Schwenk Drive. A map illustrating the project location is shown on Figure 1.1.

A. Planned Project

The proposed project involves the construction of a mixed-use retail development that includes 131 apartment units above 8,950 SF of retail space, as well as a 32-room hotel located on Fair Street Extension between N. Front Street and Schwenk Drive. The development of the subject property will result in the creation of 420 off-street parking spaces. The residential portion of the proposed project will be served by 131 assigned parking spaces, a 1:1 ratio with respect to the number of units. The remaining 289 spaces will be available to the public and operated by the City of Kingston. This represents an approximately 150-space increase in the area's off-street parking supply when compared to the existing condition and may reduce the amount of driving (i.e., circling the bock) associated with the search for on-street parking in Uptown, which is limited. For residents of the project with more than one vehicle, the applicant plans to designate approximately 50 parking spaces in the Kingston Plaza shopping center for additional capacity. In order to accommodate these residents and to provide for enhanced connectivity between the two properties in general, the Kingstonian project proposes to construct a pedestrian bridge over Schwenk Drive.

Access to and from the site is currently provided via Fair Street Extension, Schwenk Drive, and N. Front Street. Fair Street Extension will be closed to through traffic with development of the site, and provide access to and from the site via a parking garage ramp. It is noted that the segment of Fair Street Extension between the proposed garage and N. Front Street will be used to create a pedestrian plaza. A ramp on Schwenk Drive east of Fair Street Extension will also provide access to and from the

parking garage, as well as access for deliveries. A third ramp on N. Front Street opposite Wall Street will provide ingress to the parking garage.

Based on a review of the proposed land uses, the existing traffic volumes and adjacent roadway network, the following access modifications are proposed at the site:

- Closure of Fair Street Extension to through traffic in order to provide access to and from the parking garage.
- Addition of a fourth leg to the N. Front Street/Wall Street intersection to provide access to the parking garage. This will require relocation of the existing flashing beacon and mast arm.

The "Illustrative Site Plan" prepared by Brinnier & Larios, P.C. Engineers & Land Surveyors dated November, 2018 is included under Appendix A. This traffic impact study provides an assessment of the development assuming full build-out of the site in 2021, with a design year of 2025.

B. Study Area and Methodology

The study area for this analysis includes the following intersections:

- Schwenk Drive/Washington Avenue
- Washington Avenue/North Front Street
- N. Front Street/Frog Alley
- N. Front Street/Wall Street
- N. Front Street/Fair Street
- Schwenk Drive/Fair Street Extension/Plaza Driveway
- Schwenk Drive/Clinton Avenue
- Clinton Avenue/John Street
- Clinton Avenue/Westbrook Avenue
- Clinton Avenue/Main Street

The potential traffic impact of the proposed project was determined by documenting the existing traffic conditions in the area, projecting future traffic volumes, including traffic associated with other developments in the area, adding the peak-hour trip generation of the site, and analyzing the operating conditions of the study area intersections after development of the proposed project. Additionally, a sensitivity analysis considers the impacts of the project as they relate to proposed changes to circulation within the study area resulting from the Downtown Revitalization Initiative (DRI).

PROJECT LOCATION

KINGSTONIAN MIXED-USE DEVELOPMENT
CITY OF KINGSTON
ULSTER COUNTY, NEW YORK

Creighton Manning

PROJECT: 118-025	DATE: 07/2019	FIGURE: 1.1

CHAPTER II

EXISTING CONDITIONS

A. Roadways Serving the Site

- Schwenk Drive – Schwenk Drive is classified as an Urban Local Road that connects Clinton Avenue and Washington Avenue in the City of Kingston. West of Fair Street, Schwenk Drive consists of a two 12-foot-wide travel lanes in each direction with an approximate 15-foot-wide raised median. East of Fair Street, Schwenk Drive narrows considerably, providing a single 12-foot-wide lane in each direction and no median. Traffic volume data provided by NYSDOT indicates that Schwenk Drive carried approximately 12,400 vehicles per day (vpd) in 2013. The posted speed limit on Schwenk Drive is 30-mph. Sidewalks are provided on both sides of Schwenk Drive west of Fair Street. East of Fair Street, a sidewalk is provided on the north side of Schwenk Drive only. Land uses along Schwenk Drive are a primarily commercial.

- N. Front Street – N. Front Street is classified as an Urban Minor Arterial near the project site provides east-west travel between Clinton Avenue and Washington Avenue. N. Front Street provides one 12-foot-wide travel lane in each direction with an approximate nine-foot-wide parking lane on both sides of the roadway. Traffic volume data provided by NYSDOT indicates that approximately 6,600 vpd passed the site in 2016. The posted speed limit on North Front Street is 30-mph. Sidewalks are provided on both sides of the roadway and land uses along Front Street are generally commercial.

- Fair Street Extension – Fair Street Extension is classified as an urban local road that provides north-south travel between Schwenk Drive and North Front Street. Fair Street Extension consists of an approximate 15-foot-wide travel lane in each direction and sidewalks on both side of the roadway. Traffic data collected by Creighton Manning Engineering, LLP (CME) on Fair Street Extension indicates that the roadway currently carries approximately 2,300 vpd. It is noted that south of North Front Street, Fair Street Extension becomes Fair Street which is classified as an Urban Major Collector and provides one-way southbound travel to Henry Street (NY Route 32).

B. Study Area Intersections

- Schwenk Drive/Washington Avenue/Hurley Avenue – This is a four-leg intersection operating under actuated traffic signal control. The eastbound Hurley Avenue approach and northbound Washington Avenue approach each provide an exclusive left-turn lane as well as two through lanes with shared right turns. The southbound Washington Avenue approach and Westbound Schwenk Drive approach each provide a single through lane as well as an exclusive left-turn lane and a separate right-turn lane. Sidewalks and curb ramps are present on all intersection approaches. Likewise, marked

crosswalks, pedestrian push buttons, and countdown timers are present on all intersection crossings.

- Washington Avenue/N. Front Street – This is a four-leg intersection operating under actuated traffic signal control. The eastbound and westbound North Front Street approaches each provide an exclusive left-turn lane and a shared through/right-turn lane. The northbound Washington Avenue approach provides a shared lane for through/left-turn movements as well as a separate right turn lane. The southbound Washington Avenue approach provides an exclusive left-turn lane, a single through lane, and a separate right-turn lane. Sidewalks and curb ramps are present on all intersection approaches. Likewise, marked crosswalks, pedestrian push buttons, and countdown timers are present on all intersection crossings.

- N. Front Street/Frog Alley – This is a four leg intersection operating under stop sign control on the southbound Frog Alley approach. All approaches provide a single lane for shared travel movements. It is noted that exiting the intersection to the south, Frog Alley becomes a one-way street southbound. Sidewalks and marked crosswalks are present on all intersection legs.

- N. Front Street/Wall Street – This is a three-leg intersection operating under all-way stop control with a flashing beacon mounted to a mast arm. The eastbound and westbound North Front Street approaches each provide a single lane for shared travel movements. The northbound Wall Street approach is one-way towards North Front Street and provides separate left- and right-turn lanes. Sidewalks and curb ramps are present on all intersection approaches, and marked crosswalks are provided across all intersection legs.

- N. Front Street/Fair Street/Fair Street Extension – This intersection is a four-leg intersection operating under all-way stop control. The southbound Fair Street Extension approach and the eastbound North Front Street approach each provide a single lane for shared travel movements. The westbound North Front Street approach is one-way westbound and provides an exclusive left-turn lane in addition to a shared lane for through/right-turn movements. It is noted that south of North Front Street, Fair Street is one-way southbound exiting the intersection. Sidewalks and curb ramps are present on all intersection approaches, and marked crosswalks are provided across all intersection legs.

- Schwenk Drive/Fair Street Ext/Kingston Plaza Driveway – This is a four-leg intersection operating under all-way stop sign control with a flashing beacon. The eastbound Schwenk Drive approach and the southbound Kingston Plaza driveway approach each provide an exclusive left-turn lane, single through lane, and separate right-turn lane. The northbound Fair Street Extension approach and westbound Schwenk Drive approach each provide a single

lane for all travel movements. Sidewalks and marked crosswalks are present on all intersection approaches.

- Schwenk Drive/Clinton Avenue – This is a three-leg intersection operating under stop sign control on the westbound Schwenk Drive approach. All approaches provide a single lane for shared travel movements. It is noted that north of Schwenk Drive, Clinton Avenue is a one-way street northbound. Sidewalks are provided on both sides of Clinton Avenue south of Schwenk Drive. North of the intersection, sidewalks are provided on the west side of Clinton Avenue and the east side of Schwenk Drive. There are no marked crosswalks at this intersection.

- Clinton Avenue/John Street – This intersection is a three-leg intersection operating under yield control on the eastbound John Street approach. The eastbound John Street approach provides a single lane for shared travel movements in addition to a parking lane on the north side of the roadway. It is noted that John Street is one-way towards Clinton Avenue entering the intersection. The northbound and southbound Clinton Avenue approaches provide a single lane for through movements. Sidewalks are present on all intersection approaches, and a marked crosswalk is provided across John Street.

- Clinton Avenue/Westbrook Lane – This intersection is a three-leg intersection operating under all way stop sign control. The northbound and southbound Clinton Avenue approaches each provide a single lane for shared travel movements. The westbound Westbrook Lane approach provides separate left- and right-turn lanes. Sidewalks are present on both sides of Clinton Avenue, and on the south side of Westbrook Lane. Curb ramps and a marked crosswalk are provided across the westbound Westbrook Lane approach.

- Clinton Avenue/Main Street – This intersection is a three-leg intersection operating under stop sign control on the southbound Clinton Avenue approach. All approaches provide a single lane for shared travel movements. It is noted that Main Street is one-way westbound exiting the intersection. Sidewalks and marked crosswalks are present on all intersection legs.

C. Existing Conditions

Traffic Volumes

Intersection turning movement counts were conducted at the study area intersections on Thursday, May 9, 2019 from 4:00 to 6:00 p.m. with the exception of the North Front Street/Frog Alley intersection, which was counted on Wednesday June 19, 2019. In addition, traffic associated with the existing driveways on Fair Street Extension was observed. This traffic study focuses on the weekday PM peak period, which

corresponds to peak operations at the proposed site and peak traffic conditions on the surrounding roadway network. The 2019 Existing PM peak hour traffic volumes are shown on Figure 2.1 and form the basis for all traffic forecasts. The raw turning movement count data is included in Appendix B. The following observations are evident based on the existing traffic volume data:

- The PM peak hour generally occurred from 4:30 p.m. to 5:30 p.m.

- The two-way traffic volume on N. Front Street adjacent to the project site was approximately 435 vehicles during the PM peak hour. The two-way traffic volume on Schwenk Drive was 1,255 vehicles during the PM peak hour. Fair Street Extension carried approximately 140 vehicles southbound and 110 vehicles northbound during the PM peak hour.

- Significant pedestrian activity was observed at the study area intersections during the PM peak hour, as would be expected in an urban environment with a robust sidewalk network. Bicycle and pedestrian activity is summarized in Table 2.1 below.

Table 2.1 – Bicycle and Pedestrian Activity Summary

Location	PM Peak Hour	
	Pedestrians	Bicyclists
Schwenk Drive/Washington Avenue	1	0
Washington Avenue/N. Front Street	7	0
Schwenk Drive/Fair Street	60	1
Schwenk Drive/Clinton Avenue	0	0
N. Front Street/Wall Street	125	0
N. Front Street/Fair Street	115	2
Clinton Avenue/John Street	4	1
Clinton Avenue/Westbrook Street	31	1
Clinton Avenue/Main Street	52	3

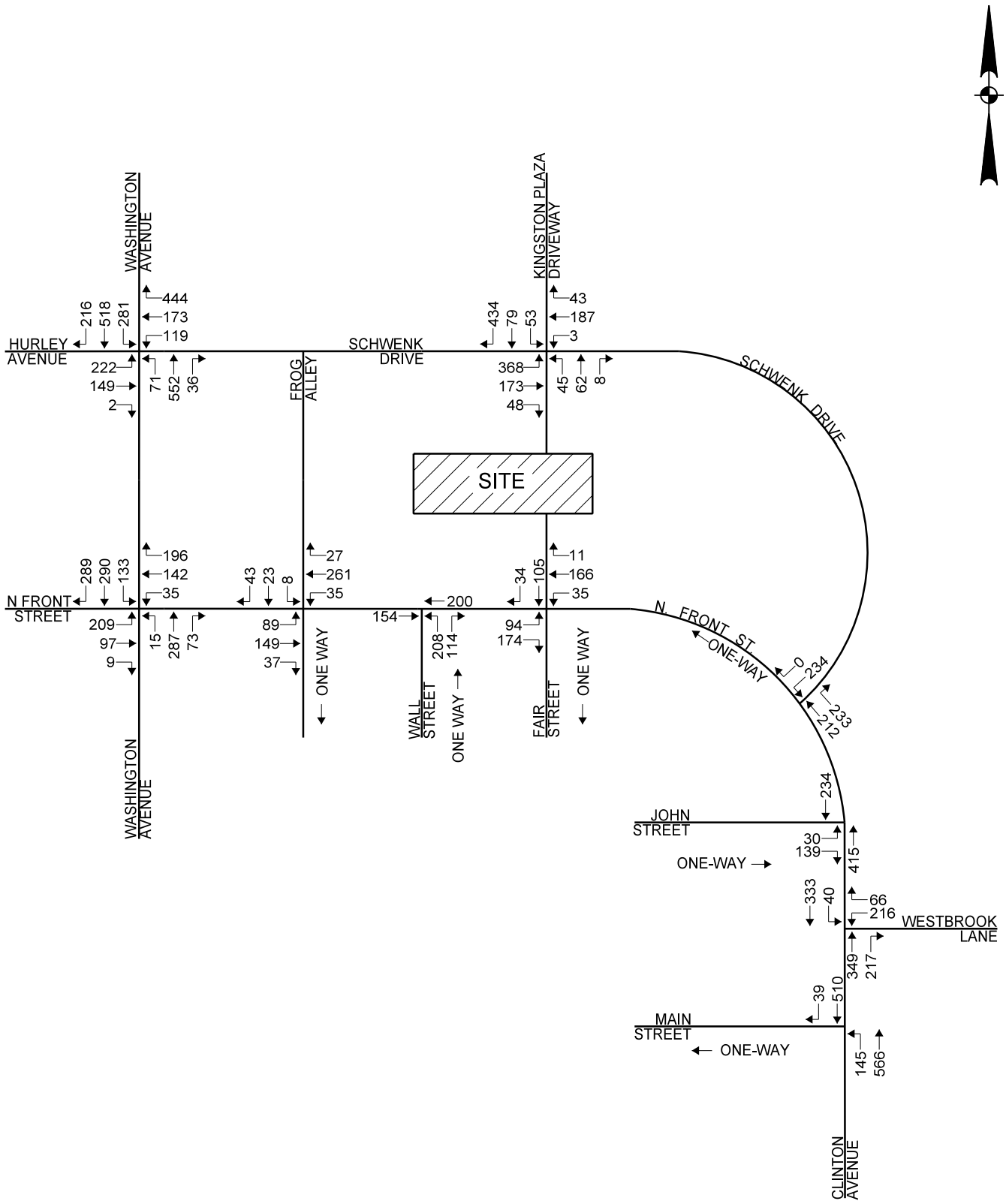
D. Transit

Transit service in the study area is provided by the Ulter County Area Transit (UCAT). Downtown Kingston is one of UCAT's larger activity nodes, and is therefore well served by numerous routes as summarized in Table 2.2.

Table 2.2 – Summary of Existing Transit Service

Route	Weekday		Saturday		Sunday	
	Span	Frequency (minutes)	Span	Frequency (minutes)	Span	Frequency (minutes)
EU	6:15AM – 9:35PM	75	10:30AM – 4:30PM	2 Trips	None	None
KPL	5:15AM – 8:15PM	180	6:45AM – 4:14PM	120	None	None
KS	5:30AM – 8:30PM	60	8:00AM – 6:00PM	120	None	None
R	5:20AM – 5:20PM	30/60	None	None	None	None
Z	5:15AM – 5:30PM	60/120	8:00AM – 2:00PM	2 Trips	None	None
Red	7:00AM – 7:00PM	30	8:30AM – 6:00PM	60	None	None
Blue	7:00AM – 6:30PM	30	None	None	None	None

It is noted that on April 29, 2019 UCAT proposed substantial changes to the existing bus network in order to improve service to, from, and around the City of Kingston. Implementation of these changes would result in fewer bus routes within the service area, although bus frequency would increase.



2019 EXISTING PM PEAK HOUR
TRAFFIC VOLUMES

KINGSTONIAN MIXED-USE DEVELOPMENT
CITY OF KINGSTON, NEW YORK

Creighton Manning

PROJECT: 118-025	DATE: 07/2019	FIGURE: 2.1

N:\Projects\2018\118-025 Bonura - Kingston\Working\CADD\dgn\figures\118-025_fig_traf.dgn

CHAPTER III
TRAFFIC FORECASTS

To evaluate the impact of the proposed development, traffic projections were prepared for a 2025 design year (2021 Build+4) and a comparison was made between the future traffic volumes with and without the project.

A. 2025 No-Build Traffic Volumes

No-Build traffic volumes include trips associated with other development projects in the study area and general background traffic growth. A regression analysis of historic traffic volumes in the study area indicates that traffic volume growth in the vicinity of the site has increased by approximately two percent per year over the last several years; therefore, the Existing 2019 traffic volumes were increased by a two-percent-per-year growth rate for six years to represent general growth in the area. It is noted that this 2% background growth accounts for potential future traffic from four boutique hotels currently under consideration, as well as other projects not known as this time. In addition, the City of Kingston Planning Department indicated that background traffic would increase based on traffic associated with the following other developments for the 2025 No-Build conditions as shown on Figure 3.1:

- *Energy Square* – 57 Apartment units above 11 KSF dedicated to civic space located on Cedar Street.

The 2025 No-Build traffic volumes are illustrated on Figures 3.1 and represent traffic conditions expected at the study area intersections before development of the proposed project.

B. Trip Generation

Trip generation determines the quantity of traffic expected to travel to/from the project site. The Institute of Transportation Engineers (ITE) *Trip Generation*, 10th edition, provides trip generation data for various land uses based on studies of similar existing developments located across the country. Trip Generation for this mixed-use project was estimated using ITE land use code (LUC) 221 – Multi-Family Housing Mid-

Rise, LUC 820 – Shopping Center, and LUC 310 – Hotel. It is noted that LUC 231 – Mid-Rise Residential with First Floor Commercial was considered for this project, but was determined to be an inaccurate representation of trip generation due to small sample size.

In addition to the site-specific uses, trip generation of the expanded municipal parking supply was also estimated since it is possible that a greater public parking supply at the site location will attract more drivers. Data collected by CME indicates that the existing 131-space surface lot generates 36 trips to and from Fair Street Extension, which equates to 0.275 trips per parking space. It is noted that cross access between parking lots allows drivers to also enter and exit the lot via Schwenk Drive, and therefore the 0.275 trips per space could be an underestimate. Local data collected by CME indicates that a municipal parking garage generates 0.34 trips per space, which provides a more conservative trip estimate. Please note that the trip generation rate was applied to the total number of public spaces minus the anticipated number of spaces to be occupied by the project's retail and hotel customers (289-89). Further, no trip generation credit was taken for removal of the existing surface lot.

It is also noted that some trips to the proposed retail uses may originate from traffic that is already passing the site on Schwenk Drive and N. Front Street, or diverting from Washington Avenue or Clinton Avenue. Pass-by trips and diverted-link trips are made by drivers who will stop at the site before continuing on to their primary destination. For example, an eastbound trip on Schwenk Drive may stop at the site and then continue eastbound towards its intended destination. This type of trip would be considered a pass-by trip. In addition, a southbound trip on Washington Avenue that diverts to the site and then leaves the site traveling on N. Front Street onto Washington Avenue southbound would be considered a diverted-link trip. In order to conservatively estimate the trip generation of the site, a pass-by/diverted-link credit was not applied to trips generated by the retail land uses at the site.

There is also the potential for interaction among the land uses within the multi-use site. An internal capture rate is generally defined as a percentage reduction in the trip generation estimates for individual land uses to account for trips internal to the site that are not made on the major street system. In order to conservatively estimate trip

generation of the site, an internal capture credit was not applied. The PM peak hour trip generation estimate is summarized in Table 3.1.

Table 3.1 – Trip Generation Summary

Land Use	LUC	Size	PM Peak Hour		
			Enter	Exit	Total
Multi-Family Housing (Mid-Rise)	221	131 units	35	23	58
Shopping Center	820	8.95 KSF	16	18	34
Hotel	310	32 rooms	11	12	23
Municipal Parking Garage	CME Data	200 Spaces	14	54	68
		Total Trips	**76**	**107**	**183**

The proposed development will generate a total of 183 new vehicle trips during the PM peak hour.

As part of the project, Fair Street Extension will be closed to through traffic. Therefore, the existing trips on Fair Street Extension will be redistributed within the existing street network. The closure of Fair Street Extension will eliminate through traffic between North Front Street and Schwenk Drive and thus the access to the municipal parking lot on the west side of Fair Street Extension between these roadways. However, the additional off-street parking created by the proposed project presents an opportunity to recapture these drivers (and potentially attract others who are currently seeking on-street parking) via the proposed project entrances across from Wall Street and across from Kingston Plaza. The observed 36 vehicles utilizing the driveway on Fair Street Extension as well as through traffic on Fair Street Extension were conservatively redistributed within the roadway network, but it is noted that these drivers could be recaptured in the future once the project is built and the parking is restored and enhanced.

C. Trip Distribution

Trip distribution describes where traffic originates or where traffic is destined. Traffic generated by the proposed project was distributed based on existing travel patterns; locations of major highways, residential areas, and employment areas; and the access management plan of the proposed project. It is expected that 60 percent of the

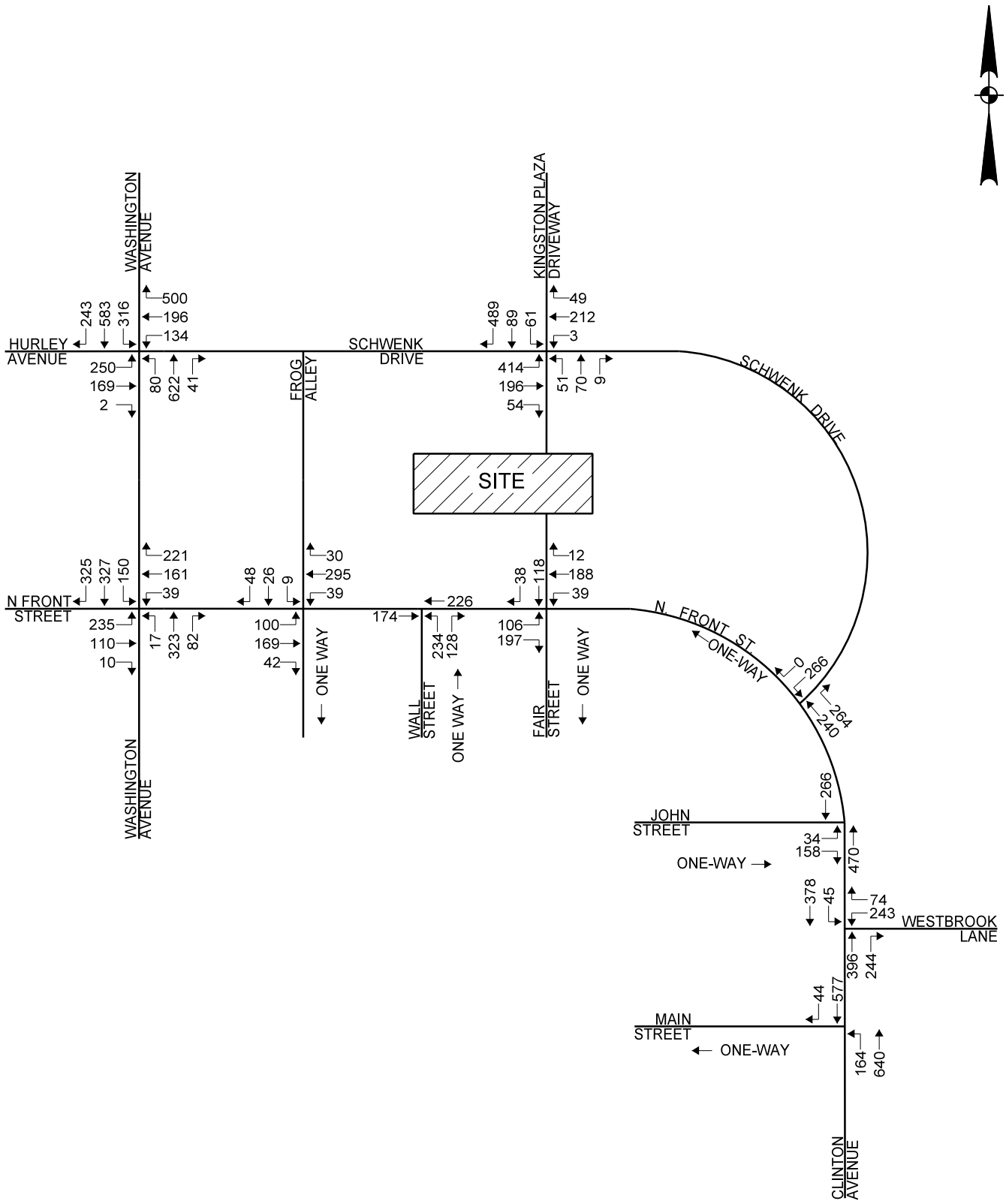
site-generated traffic exiting the site will travel to the west on Schwenk Drive while the remaining 40 percent of exiting traffic will travel to the east on Schwenk Drive. It is expected that 20 percent of vehicles entering the site will travel from the east on N. Front Street, while an additional 20% of vehicles entering the site will travel from the west on N. Front Street. It is anticipated that 20% of the entering traffic will arrive at the site from the east on Schwenk Drive, while 35% of vehicles will enter from the west on Schwenk Drive. The remaining 5 percent of entering traffic is expected to travel from the south on Wall Street. Figure 3.2 illustrates the expected distribution of trips for the proposed development.

D. Trip Assignment

Trip assignment combines the results of the trip generation and trip distribution and determines the specific paths and roadways that will be used between various origin/destination pairs. Figure 3.3 show the resulting trip assignment for the proposed project for the weekday PM peak hour.

E. 2025 Build Traffic Volumes

The results of the site generated traffic assignment were added to the 2025 No-Build traffic volumes to develop the 2025 Build traffic volumes. The 2025 Build traffic volumes are shown on Figure 3.4.



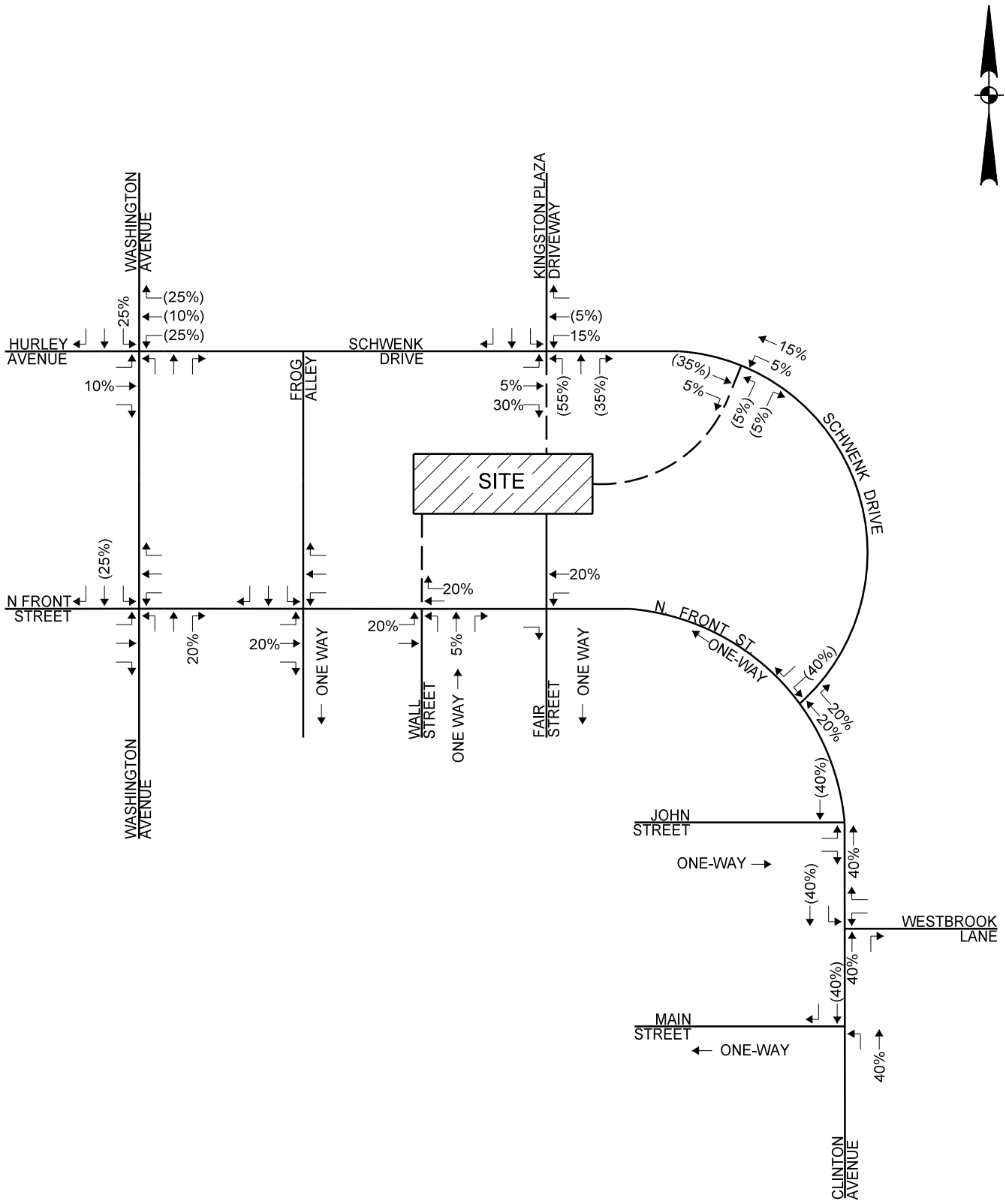
2025 NO-BUILD PM PEAK HOUR
TRAFFIC VOLUMES

KINGSTONIAN MIXED-USE DEVELOPMENT
CITY OF KINGSTON, NEW YORK

Creighton Manning

PROJECT:	118-025	DATE:	07/2019	FIGURE:	3.1

N:\Projects\2018\118-025 Bonura - Kingston\Working\CADD\dgn\figures\118-025_fig_traf.dgn



ENTER (EXIT)

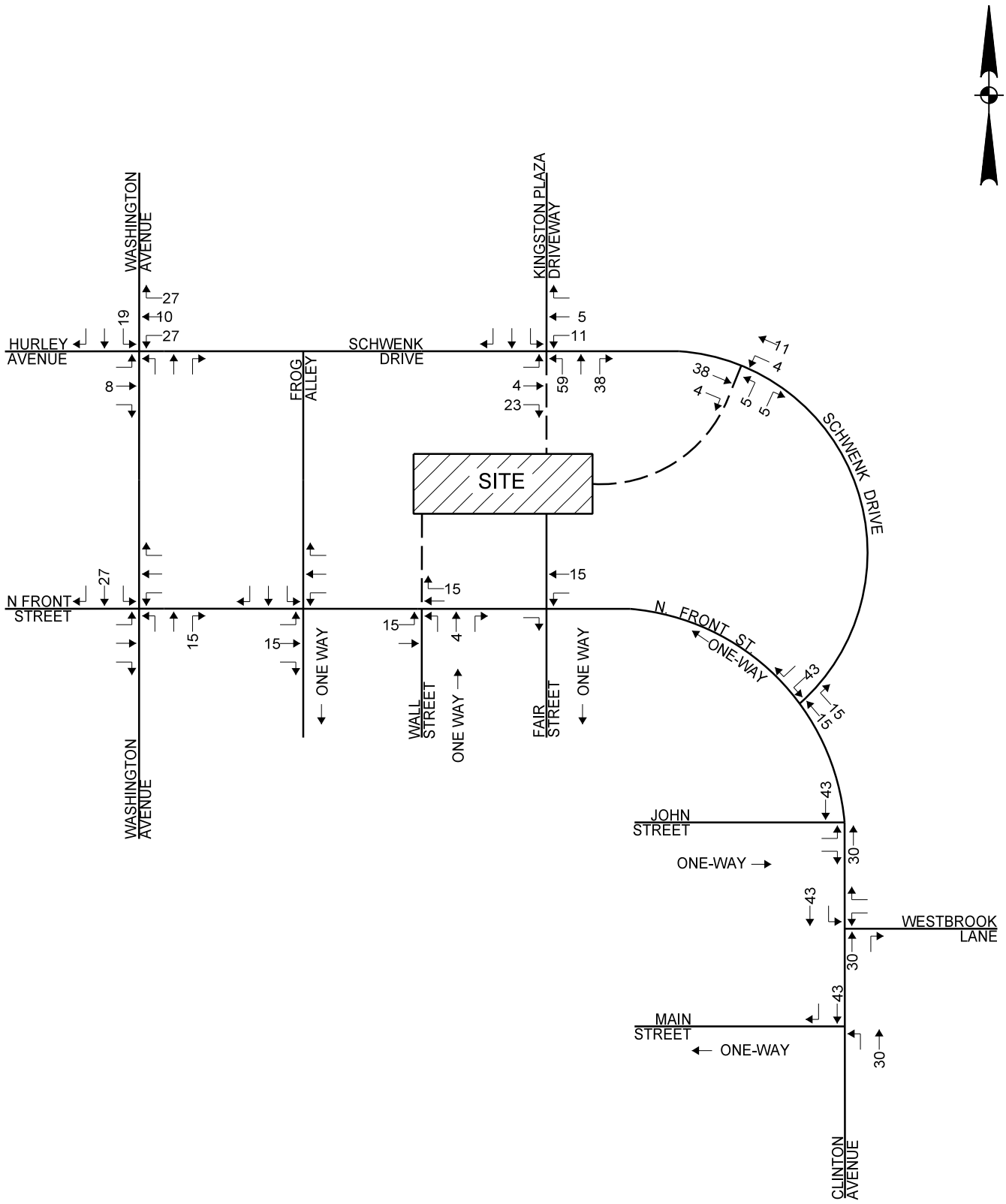
TRIP DISTRIBUTION

KINGSTONIAN MIXED-USE DEVELOPMENT
CITY OF KINGSTON, NEW YORK

Creighton Manning

PROJECT: 118-025	DATE: 07/2019	FIGURE: 3.2

N:\Projects\2018\118-025 Bonura - Kingston\Working\CADD\dgn\figures\118-025_fig_traf.dgn



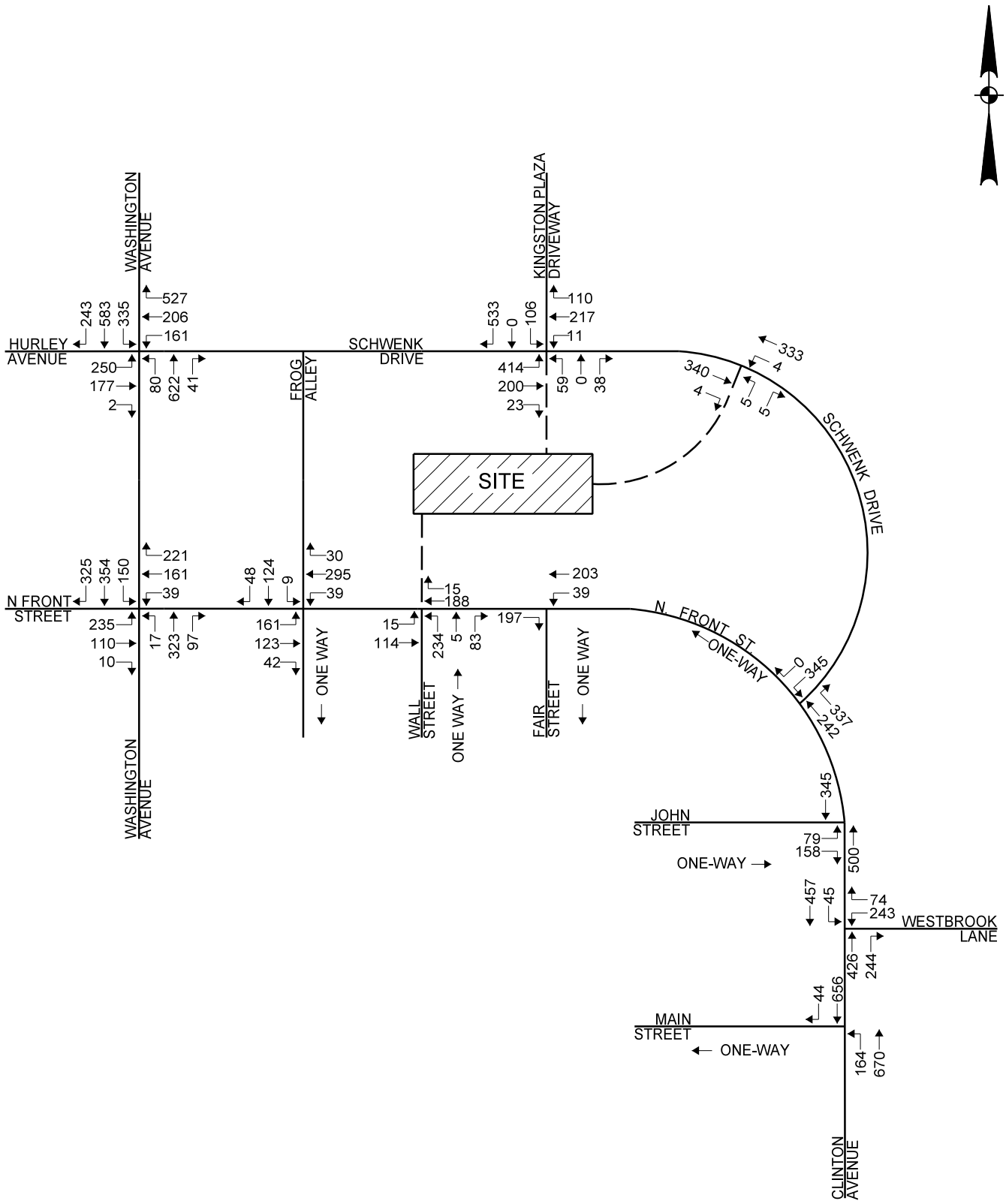
TRIP ASSIGNMENT

KINGSTONIAN MIXED-USE DEVELOPMENT
CITY OF KINGSTON, NEW YORK

Creighton Manning

PROJECT: 118-025	DATE: 07/2019	FIGURE: 3.3

N:\Projects\2018\118-025 Bonura - Kingston\Working\CADD\dgn\figures\118-025_fig_traf.dgn



2025 BUILD PM PEAK HOUR
TRAFFIC VOLUMES

KINGSTONIAN MIXED-USE DEVELOPMENT
CITY OF KINGSTON, NEW YORK

Creighton Manning

PROJECT: 118-025	DATE: 07/2019	FIGURE: 3.4

N:\Projects\2018\118-025 Bonura - Kingston\Working\CADD\dgn\figures\118-025_fig_traf.dgn

CHAPTER IV
ANALYSIS

A. Capacity/Level of Service Analysis

Intersection Level of Service (LOS) and capacity analysis relate traffic volumes to the physical characteristics of an intersection. Intersection evaluations were made using Synchro software which automates the procedures contained in the Highway Capacity Manual. Evaluations were also completed using SimTraffic simulation software. Levels of service range from A to F with level of service A conditions considered excellent with very little delay while level of service F generally represents conditions with very long delays. In general, overall level of service D or better conditions are desirable during peak hour operating conditions on each intersection lane group; however, in some cases, lesser levels of service are accepted by municipalities and NYSDOT during peak operating periods. Appendix C contains further detailed descriptions of LOS criteria for signalized and unsignalized intersections and copies of the detailed level of service reports.

Existing, No-Build, and Build condition operational analyses were conducted for the study area intersections. The results of the analyses describe operating conditions in terms of control delay which is the portion of total delay that includes initial deceleration delay, queue move up time, stopped delay, and final acceleration delay for signalized, roundabout, and unsignalized intersections. The overall existing LOS values for the intersections reflect a weighted average of each of the movements. The signalized and unsignalized LOS values are presented in Table 4.1 for the PM peak hour of adjacent street traffic. The relative impact of the proposed project can be determined by comparing the level of service during the 2025 design year for the No-Build and Build condition. The **bolded** values represent locations where drops in levels of service occur between the No-Build and Build conditions.

Table 4.1 – Peak Hour Level of Service Summary

Intersection		Control	PM Peak Hour			
			2019 Existing	2025 No-Build	2025 Build	2025 Build w/ Imp.
Washington Avenue/Hurley Avenue/Schwenk Drive		S				
Hurley Avenue EB	L		C (20.4)	C (24.9)	C (26.9)	C (34.0)
	T,TR		C (22.0)	C (25.2)	C (26.9)	C (26.3)
Schwenk Drive WB	L		C (21.3)	C (23.9)	C (24.0)	C (22.1)
	T		C (27.1)	C (30.9)	C (31.7)	C (28.6)
	R		B (18.0)	B (20.0)	B (20.1)	B (18.1)
Washington Avenue NB	L		D (41.4)	D (52.4)	D (54.2)	D (49.0)
	T,TR		C (30.8)	D (41.5)	D (44.7)	D (37.1)
Washington Avenue SB	L		D (39.2)	D (53.8)	**E (59.2)**	D (51.9)
	T		C (28.8)	D (36.9)	D (36.3)	C (31.1)
	R		B (12.0)	B (13.0)	B (13.6)	B (13.4)
	Overall		C (26.9)	C (33.9)	**D (35.4)**	C (31.7)
Washington Avenue/N. Front Street		S				
N. Front Street EB	L		B (14.3)	B (15.8)	B (16.6)	
	TR		B (10.5)	B (11.4)	B (11.4)	
N. Front Street WB	LT		C (20.4)	C (22.7)	C (22.8)	
	R		B (15.7)	B (17.7)	B (17.7)	
Washington Avenue NB	LT		C (22.6)	C (23.5)	C (23.4)	
	R		B (18.2)	B (18.4)	B (18.6)	
Washington Avenue SB	L		B (15.4)	B (16.2)	B (16.2)	
	T		B (13.0)	B (13.6)	B (13.9)	
	R		A (8.0)	A (7.8)	A (7.8)	
	Overall		B (15.5)	B (16.5)	B (16.6)	
N. Front Street/Frog Alley		TW				
N. Front Street EB	LTR		A (8.1)	A (8.3)	A (8.5)	
N. Front Street WB	LTR		A (7.7)	A (7.8)	A (7.6)	
Frog Alley SB	LTR		B (11.8)	B (12.7)	**C (16.1)**	
N. Front Street/Wall Street		AW				
N. Front Street EB	[L]TR		A (9.7)	B (10.4)	A (9.4)	
N. Front Street WB	LT[R]		B (10.2)	B (11.1)	A (10.1)	
Wall Street NB	L[T]R		B (11.9)	B (13.9)	B (12.0)	
	Overall		B (10.9)	B (12.3)	B (10.9)	
N. Front Street/Fair Street/Fair Street Extension[1]		AW				
N. Front Street EB	LR		A (9.8)	B (10.7)	--	
	[R]		--	--	A (7.7)	
N. Front Street WB	L,TR		A (8.7)	A (9.2)	--	
	[L,T]		--	--	A (8.1)	
Fair Street Ext SB	TR		A (9.3)	A (9.8)	--	
	Overall		A (9.3)	A (10.0)	A (7.9)	
Schwenk Drive/Fair Street Extension/Kingston Plaza Drwy		AW				
Schwenk Drive EB	L		F (52.6)	F (90.5)	F (92.7)	
	T		C (15.8)	C (18.4)	C (19.2)	
	R		B (10.7)	B (11.5)	B (11.1)	
Schwenk Drive WB	LTR		D (26.2)	E (36.0)	F (56.8)	
Fair Street Extension NB	LTR		C (18.0)	C (20.9)	C (18.9)	
Kingston Plaza Drwy SB	L		B (12.6)	B (13.4)	C (15.2)	
	T		B (12.5)	B (13.4)	B (11.2)	
	R		F (51.3)	F (94.1)	F (127)	
	Overall		E (36.4)	F (60.1)	F (77.5)	
Schwenk Drive EB	L	S			C (35.2)	C (20.1)
	T				B (13.7)	B (11.6)
	R				B (11.9)	B (10.4)
Schwenk Drive WB	LTR				C (29.8)	C (32.1)
Fair Street Extension NB	LTR				C (20.3)	B (19.6)
Kingston Plaza Drwy SB	L				B (19.9)	B (19.2)
	T				B (17.7)	B (17.1)
	R				D (51.8)	B (15.9)
	Overall				C (34.7)	B (20.0)
Clinton Avenue/Schwenk Drive		TW				
Schwenk Drive SB	LR		B (13.6)	C (15.3)	C (20.0)	

Intersection		Control	PM Peak Hour			
			2019 Existing	2025 No-Build	2025 Build	2025 Build w/ Imp.
Clinton Avenue/John Street		Y*				
John Street EB	LR		B (12.4)	B (13.6)	**C (21.3)**	
John Street EB	LR	S				B (14.3)
Clinton Avenue NB	LT					A (2.7)
Clinton Avenue SB	TR					A (6.3)
	Overall					A (6.4)
Clinton Avenue/Westbrook Lane		AW				
Westbrook Lane WB	L,R		B (14.8)	C (17.0)	C (17.7)	
Clinton Avenue NB	TR		E (39.9)	F (85.5)	F (119)	
Clinton Avenue SB	LT		C (19.8)	D (26.9)	**E (44.8)**	
	Overall		D (28.0)	F (51.8)	F (72.5)	
Westbrook Lane WB	L	S				B (16.5)
	R					B (13.1)
Clinton Avenue NB	TR					B (10.3)
Clinton Avenue SB	LT					A (5.6)
	Overall					A (9.9)
Clinton Avenue/Main Street		TW				
Clinton Avenue NB	LT		A (7.6)	A (7.6)	A (7.6)	A (5.2)
Clinton Avenue SB	TR		B (14.4)	C (16.6)	C (20.3)	--
Schwenk Drive/Site Driveway		TW				
Schwenk Drive WB	LT		--	--	A (8.1)	
Site Driveway NB	LR		--	--	B (12.6)	

S, TW, AW, Y = Signalized, Two-Way Stop, All-Way Stop, Yield controlled intersection
*John Street/Clinton Avenue intersection modeled as a Stop Control on eastbound John Street approach
EB, WB, NB, SB = Eastbound, Westbound, Northbound, or Southbound intersection approaches
L, T, R = Left-turn, Through, and/or Right-turn intersection movements
X (Y.Y) = Level of service (Average delay in seconds per vehicle)
LT[R] = LT: Existing geometry, LTR: [Future geometry]
-- = Not Applicable

The following observations are evident from this analysis:

Washington Avenue/Hurley Avenue/Schwenk Drive – The analysis shows that this intersection currently operates at overall LOS C during the PM peak hour. Under No-Build conditions, the intersection will continue to operate similarly with most movements experiencing LOS C/D. Under Build conditions, this intersection is expected to operate at overall LOS D with an average increase in delay of approximately two second. It is noted that under Build conditions, the southbound left turn movement will operate at LOS E. It is recommended that minor adjustments to the traffic signal timing be made to accommodate the fluctuation in traffic.

Washington Avenue/N. Front Street – This intersection currently operates at overall LOS B with all approaches operating at LOS C or better during the PM peak hour. This intersection is expected to operate similarly through build conditions with an average increase in delay of approximately one second.

N. Front Street/Frog Alley – The analysis indicates that the eastbound and westbound left turn movements on N. Front Street currently operate at LOS A and will continue to do so through Build Conditions. The southbound Frog Alley approach currently operates at LOS B and will operate similarly under No-Build conditions. Under Build conditions, the southbound Frog Alley approach will operate at LOS C with approximately four seconds of additional delay.

N. Front Street/Wall Street – The analysis indicates that this intersection currently operates at overall LOS B during the PM peak hour and will continue to do so through Build Conditions.

N. Front Street/Fair Street/Fair Street Extension – This intersection currently operates at overall LOS A during the PM peak hour and will continue to operate similarly through Build conditions. It is noted that closing the southbound Fair Street Extension approach will result in a slight improvement to intersection operations given the reduction in turning movements and volume.

Schwenk Drive/Fair Street Extension/Kingston Plaza – This intersection currently operates at overall LOS E during the PM peak hour. Vehicles turning left into and right out of the Kingston Plaza experience LOS F. Under No-Build conditions, the intersection is expected to operate at overall LOS F with average delays nearly double Existing conditions. It is noted that the westbound Schwenk Drive approach is expected to operate at LOS E under No-Build conditions. Under Build conditions, the intersection will operate similarly with an average increase in delay of four seconds. In order to improve operations at this intersection, it is recommended that the existing traffic signal be reactivated and provide full signal control (i.e., green-yellow-red instead of flashing red). A signal warrants analysis could confirm the need for signalization. The analysis indicates that this will result in overall LOS D and delays similar to Existing conditions. It is noted that the operations of this signal could be further improved by providing vehicle detection and replacing the southbound signal head to allow for a right-turn overlap that could operate concurrently with the eastbound left-turn phase. Should these improvements be pursued, the intersection is expected to operate at overall LOS B with all movements operating at LOS C or better. Since pedestrian accommodations are lacking at this intersection, upgrades to the traffic signal should consider new pedestrian crossing signals, countdown timers, push buttons, and ADA-compliant ramps.

Clinton Avenue/Schwenk Drive – The southbound Schwenk Drive approach currently operates at LOS B during the PM Peak hour. Under No-Build conditions, this approach is expected to operate at LOS C with an additional two seconds of delay. Under Build conditions, this intersection will continue to operate adequately with three additional seconds of delay.

Clinton Avenue/John Street – The eastbound John Street approach currently operates at LOS B and will continue to do so through No-Build conditions. Under build conditions, this approach is expected to operate at LOS C with an additional six seconds of delay. Review of the traffic simulation indicates that under Build conditions, queues from the Clinton Avenue/Westbrook Lane intersection to the south will extend through John Street, impacting eastbound traffic. The City should consider signalization of the Clinton Avenue/John Street intersection in which the signal operates as a pair with the Clinton Avenue/Westbrook Lane intersection to the south. This would result in overall LOS A with delay comparable to No-Build

conditions. The City should also consider coordinating the Clinton Avenue/John Street signal with the Clinton Avenue/Albany Avenue intersection.

Clinton Avenue/Westbrook Lane – This intersection currently operates at overall LOS D, with the northbound Clinton Avenue approach experiencing LOS E. Under No-Build conditions, delays at this intersection are anticipated to nearly double, resulting in overall LOS F with the northbound Clinton Avenue approach experiencing LOS F with more than one minute of delay. Under Build conditions, this intersection will operate similarly with 15 seconds of additional delay. The City should consider signalization of this intersection, which would result in overall LOS A with all approaches operating at LOS B or better. A signal warrants analysis could confirm the need for signalization. Additionally, signalizing this intersection in conjunction with the Clinton Avenue/John Street intersection would provide an added benefit to pedestrians who would be able to cross Clinton Avenue when Clinton Avenue is fully stopped. The City should also consider coordinating the Clinton Avenue/Westbrook Lane signal with the Clinton Avenue/Albany Avenue intersection.

Clinton Avenue/Main Street – Vehicles turning left onto Main Street currently experience LOS A and will continue to do so through Build conditions. The southbound Clinton Avenue approach currently operates at LOS B. Under No-Build conditions, this approach will operate at LOS C with three additional seconds of delay. Under Build conditions, this approach will operate similarly with two additional seconds of delay. A review of the traffic simulation model indicates that queues associated with the southbound stop control on Clinton Avenue sometimes extend through the Clinton Avenue/Westbrook Lane intersection to the north. Further, this stop sign configuration is unconventional in that the northbound approach does not have the same control. Therefore, it is recommended that the City consider removing this stop sign.

B. DRI Sensitivity Level of Service Analysis

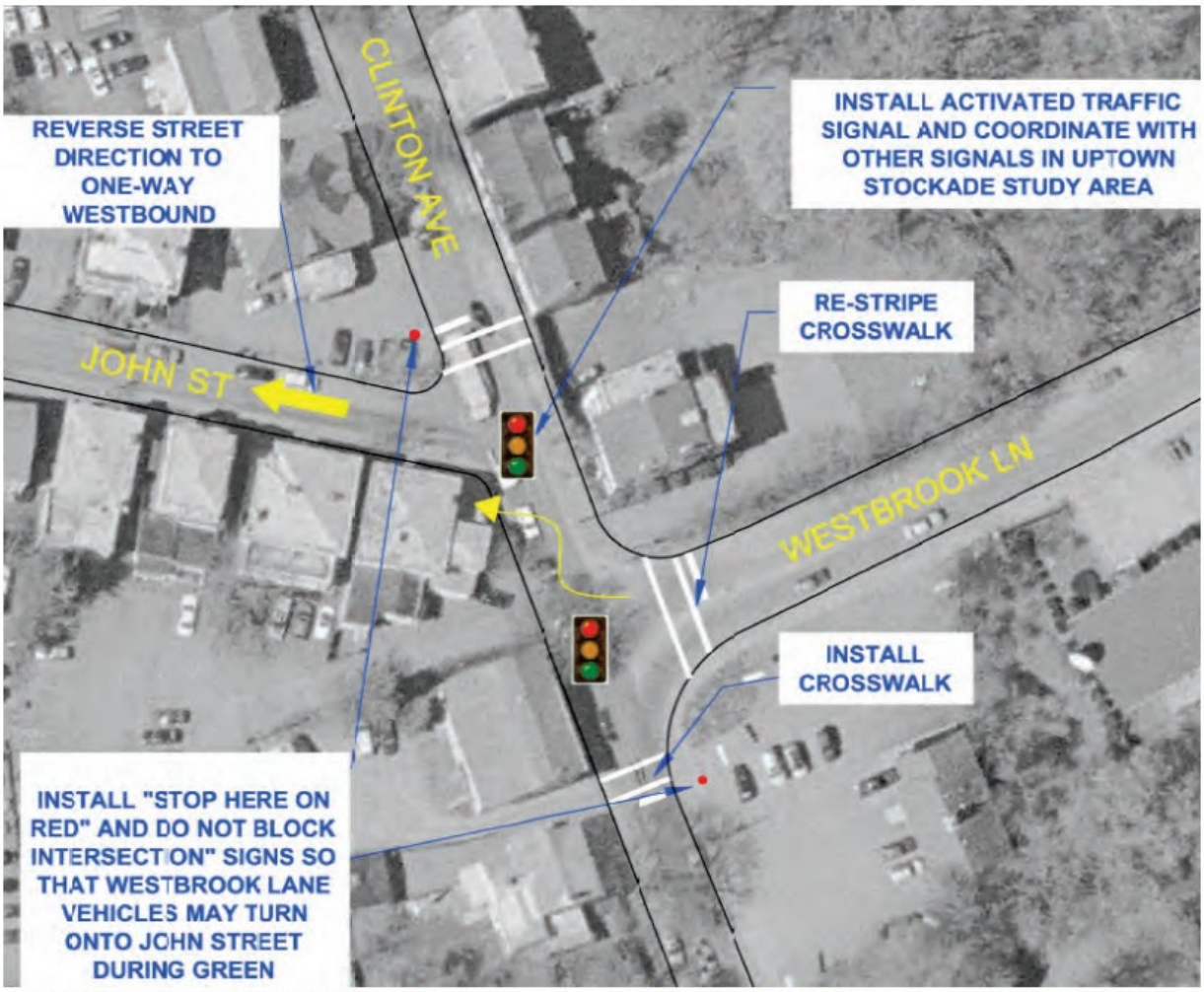
Given the potential for significant changes to the traffic patterns in the study area as a result of the Kingston Downtown Revitalization Initiative (DRI), a sensitivity analysis was performed to determine the impacts of the Kingstonian project, should the changes occur. The New York State DRI Grant for the City of Kingston will allocate $10,000,000 for traffic improvements in the Stockade District, some of which include reversing the direction of traffic flow on some streets. The one-way street changes resulting from the proposed DRI traffic are summarized below and shown on Figure 3.5:

- N. Front Street from Clinton Avenue to Fair Street Extension would be reversed from one-way westbound to one-way eastbound (towards Clinton Avenue).
- John Street from Crown Street to Clinton Avenue would be reversed from one-way eastbound to one-way westbound (away from Clinton Avenue). It is noted that west of Crown Street, John Street would remain open to two-way traffic.
- Main Street from Washington Avenue to Clinton Avenue would be reversed from one-way westbound to one-way eastbound (towards Clinton Avenue)
- Wall Street from N. Front Street to Henry Street would be reversed from one-way southbound to one-way northbound (towards N. Front Street).

Figure 4.1 – DRI One-Way Traffic Pattern

- Fair Street from N. Front Street to Henry Street would be reversed from one-way southbound to one-way northbound (away from N. Front Street).

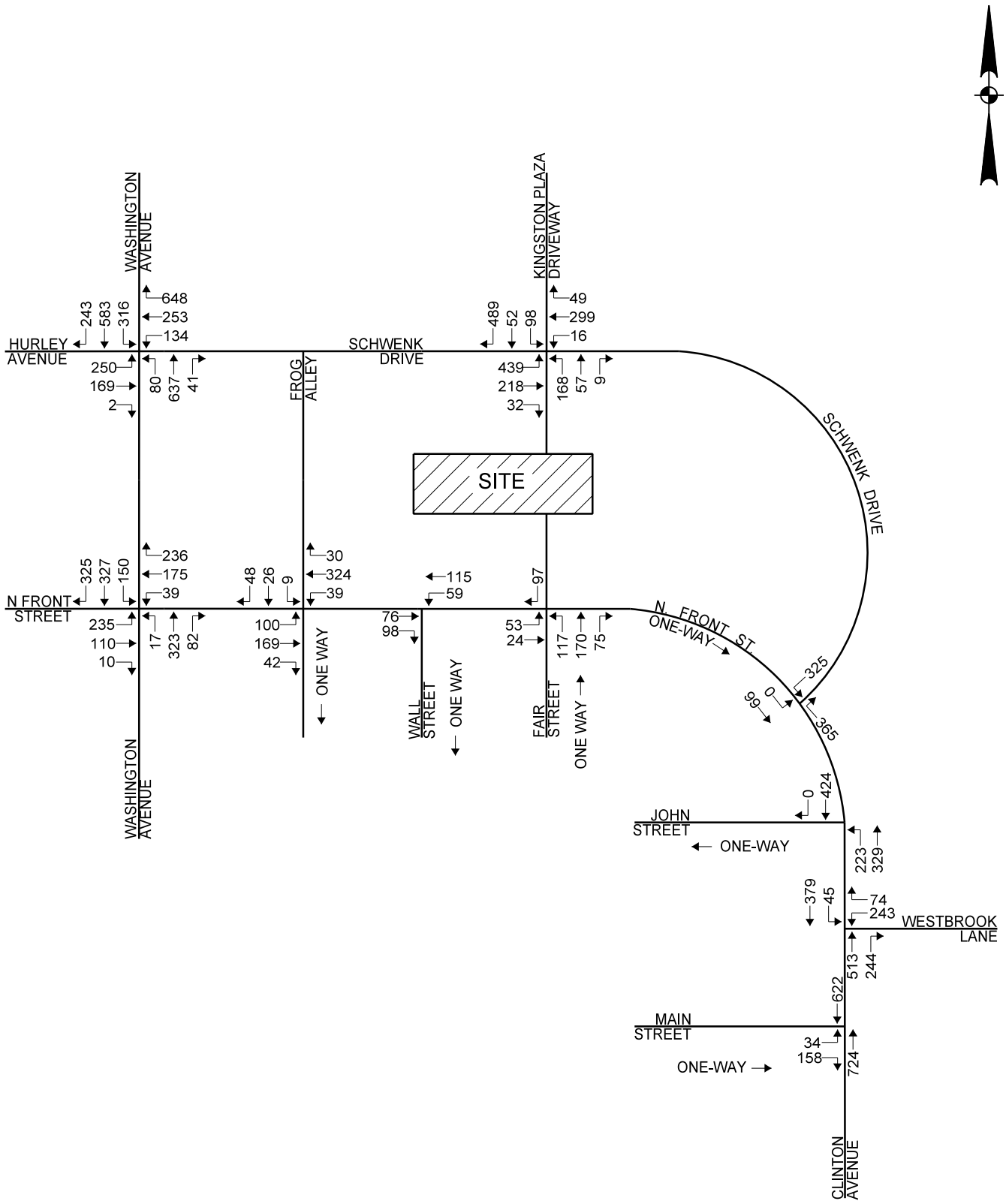
In addition to the one-way street changes, the DRI also proposes to install an actuated traffic signal system with pedestrian signals and push buttons at the Clinton Avenue/Westbrook Lane and Clinton Avenue/John Street intersections as shown in Figure 3.6 below. This recommendation is similar to CME's for the non-DRI scenario discussed previously herein.



Source: City of Kingston Uptown Stockade Area Transportation Plan, Figure 11: Proposed Improvements at Clinton Avenue and John Street / Westbrook Lane, January 2009, The RBA Group

Figure 4.2 – Clinton Avenue/Westbrook Lane/John Street Signalization

Traffic at the study area intersections was redistributed based on the above changes, in order to develop the 2025 No-Build Sensitivity traffic volumes shown on Figure 3.7. Likewise, the proposed trip distribution and resulting assignment were modified to account for the new traffic pattern. The Sensitivity Trip Distribution and Sensitivity Trip Assignment are shown on Figures 3.8 and 3.9. The Sensitivity Trip Assignment was then added to the 2025 No-Build Sensitivity traffic volumes, resulting in the 2025 Build Sensitivity traffic volumes, shown on Figure 3.10. The resulting level of service and delays are described in Table 4.2 below.



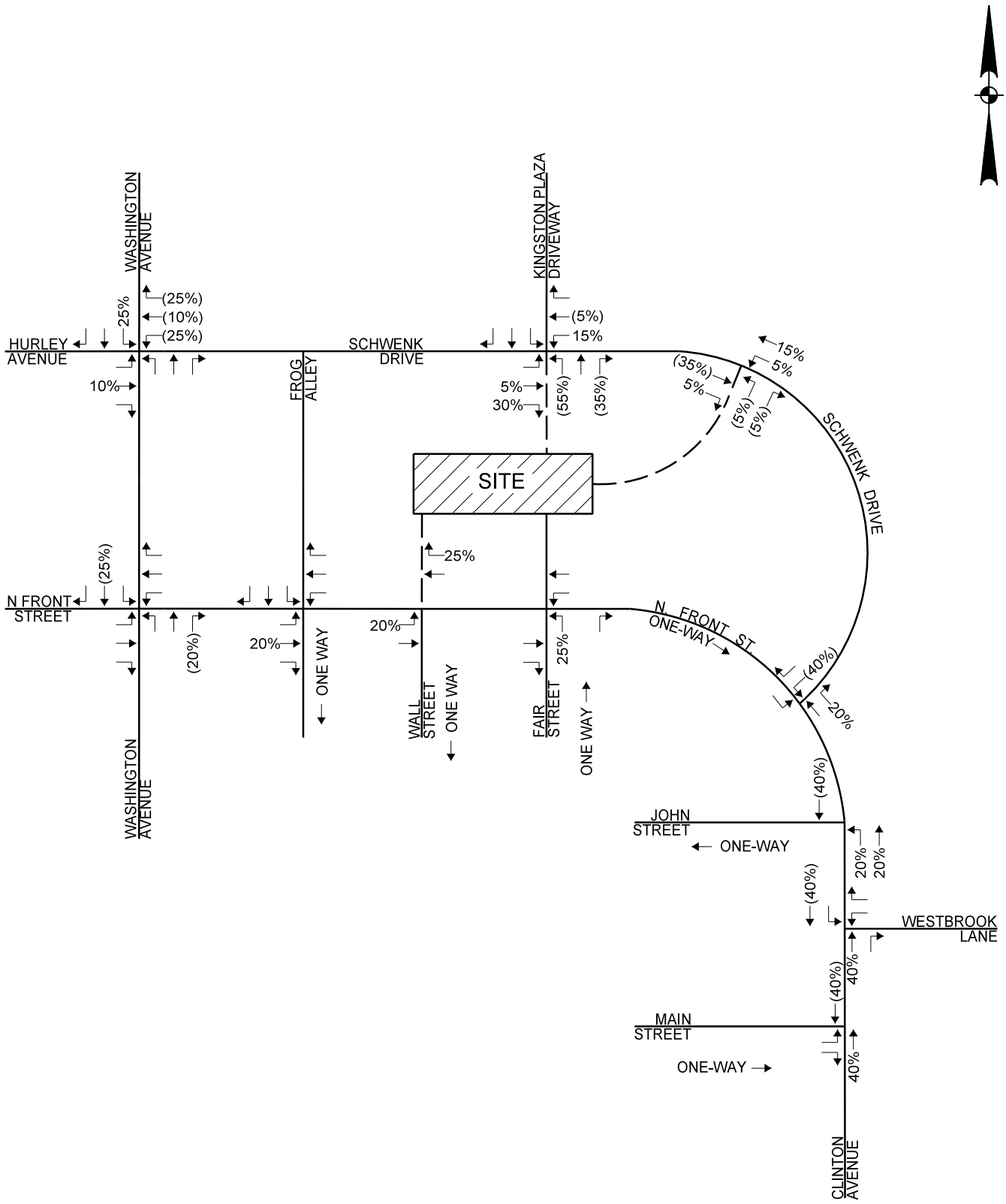
2025 NO-BUILD SENSITIVITY
PM PEAK HOUR TRAFFIC VOLUMES

KINGSTONIAN MIXED-USE DEVELOPMENT
CITY OF KINGSTON, NEW YORK

Creighton Manning

PROJECT: 118-025	DATE: 07/2019	FIGURE: 4.3

N:\Projects\2018\118-025 Bonura - Kingston\Working\CADD\dgn\figures\118-025_fig_traf.dgn



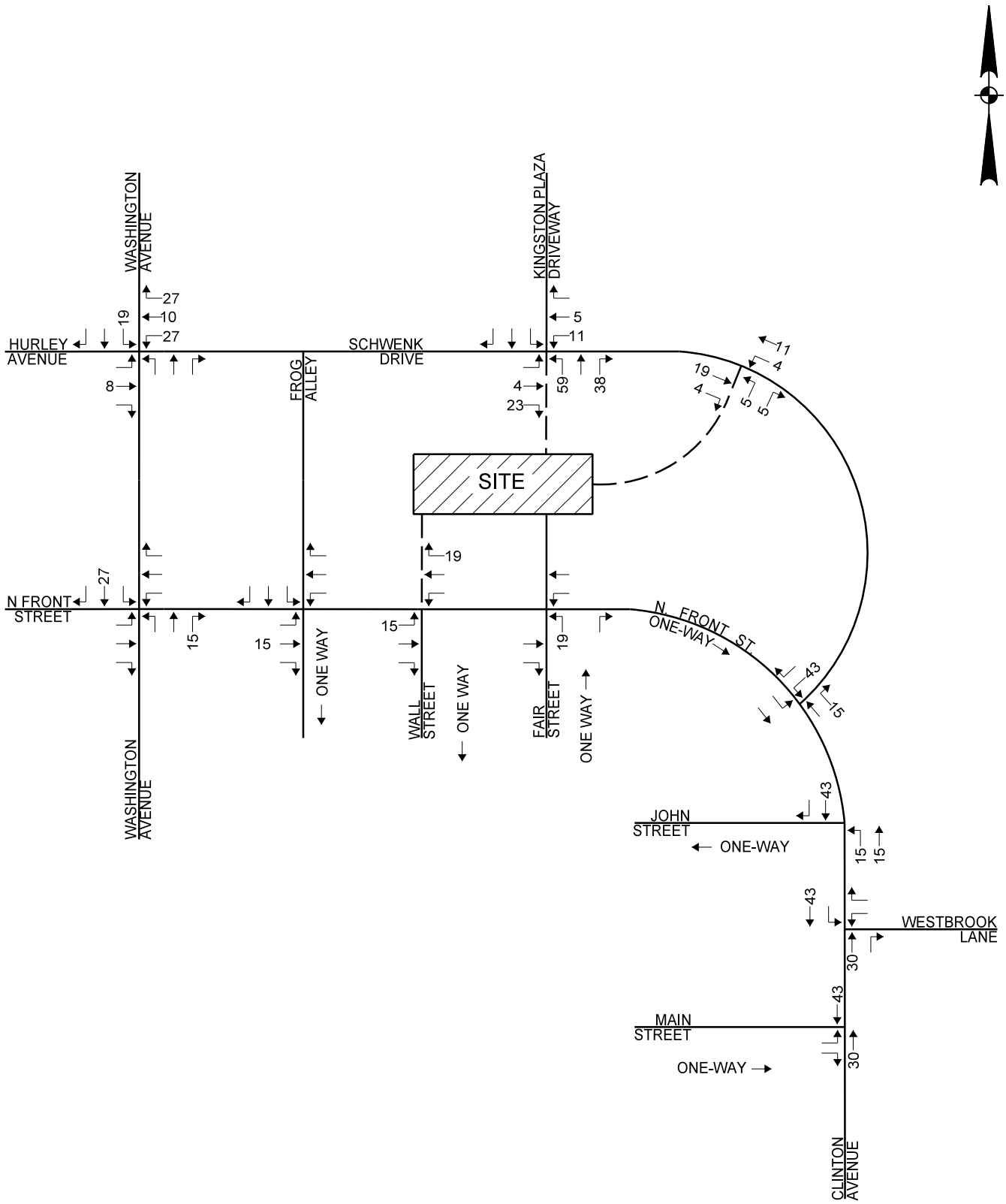
SENSITVITY TRIP DISTRIBUTION

KINGSTONIAN MIXED-USE DEVELOPMENT
CITY OF KINGSTON, NEW YORK

Creighton Manning

PROJECT: 118-025	DATE: 07/2019	FIGURE: 4.4

N:\Projects\2018\118-025 Bonura - Kingston\Working\CADD\dgn\figures\118-025_fig_traf.dgn



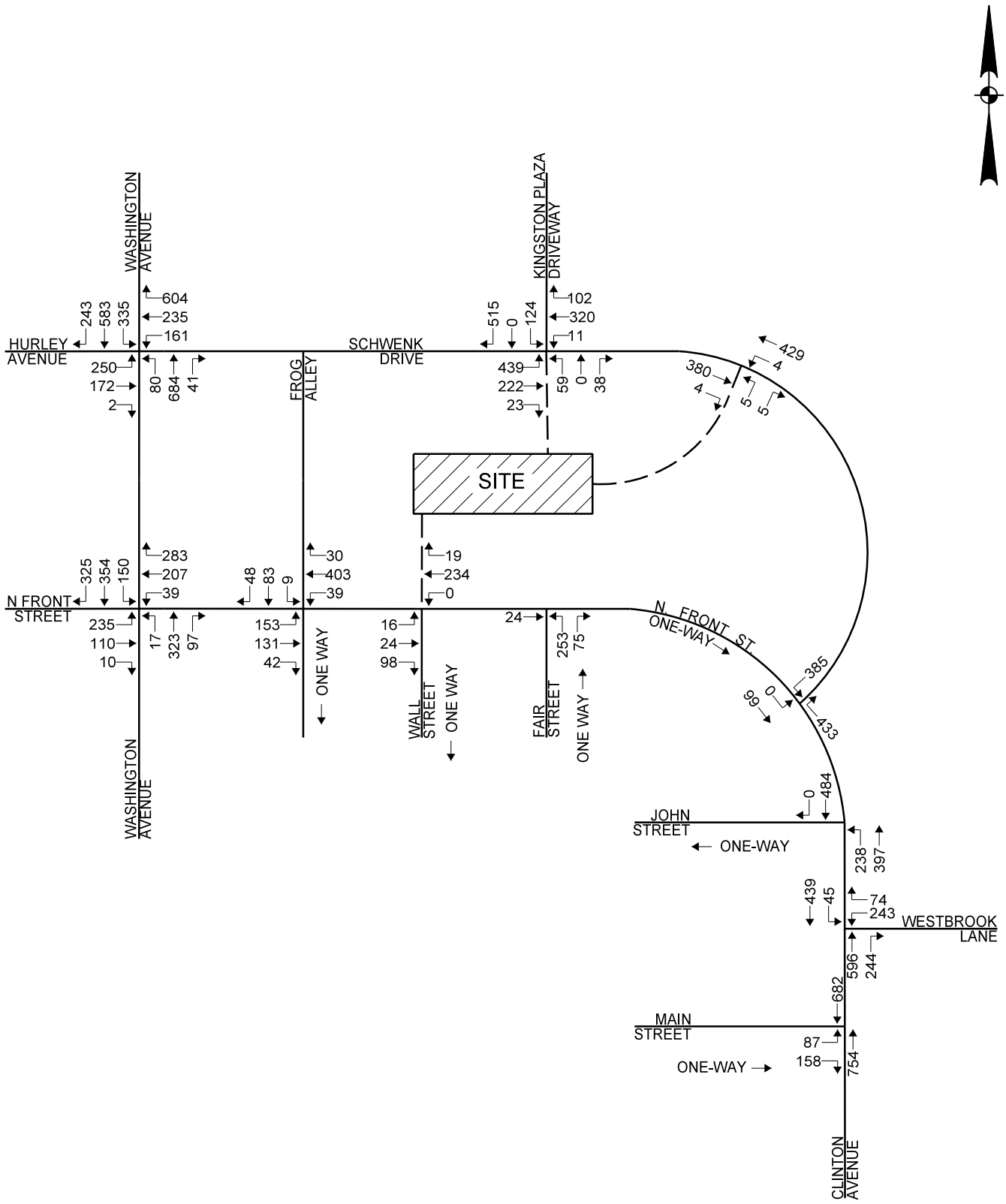
SENSITIVITY TRIP ASSIGNMENT

KINGSTONIAN MIXED-USE DEVELOPMENT
CITY OF KINGSTON, NEW YORK

Creighton Manning

PROJECT:	118-025	DATE:	07/2019	FIGURE:	4.5

N:\Projects\2018\118-025 Bonura - Kingston\Working\CADD\dgn\figures\118-025_fig_traf.dgn



2025 SENSITIVITY BUILD
PM PEAK HOUR TRAFFIC VOLUMES

KINGSTONIAN MIXED-USE DEVELOPMENT
CITY OF KINGSTON, NEW YORK

Creighton Manning

PROJECT: 118-025	DATE: 07/2019	FIGURE: 4.6

N:\Projects\2018\118-025 Bonura - Kingston\Working\CADD\dgn\figures\118-025_fig_traf.dgn

Table 4.2 – DRI Sensitivity Level of Service Summary

Intersection		Control	PM Peak Hour		
			2025 No-Build	2025 Build	2025 Build w/ Imp.
Washington Avenue/Hurley Avenue/Schwenk Drive		S			
Hurley Avenue EB	L		C (27.8)	C (29.4)	D (47.4)
	T,TR		C (25.3)	C (27.7)	C (26.5)
Schwenk Drive WB	L		C (23.5)	C (24.4)	C (23.4)
	T		C (31.5)	C (32.7)	C (29.5)
	R		C (23.8)	C (22.7)	B (20.0)
Washington Avenue NB	L		E (58.4)	E (58.7)	D (52.2)
	T,TR		D (53.3)	**E (56.6)**	D (43.7)
Washington Avenue SB	L		E (65.7)	E (69.7)	D (48.2)
	T		D (44.3)	D (38.4)	C (30.4)
	R		B (16.4)	B (15.4)	B (14.7)
	Overall		D (39.6)	D (40.3)	C (34.2)
Washington Avenue/N. Front Street		S			
N. Front Street EB	L		B (16.0)	B (17.1)	
	TR		B (11.4)	B (11.4)	
N. Front Street WB	LT		C (23.0)	C (23.8)	
	R		B (17.9)	B (18.9)	
Washington Avenue NB	LT		C (23.5)	C (23.4)	
	R		B (18.4)	B (18.6)	
Washington Avenue SB	L		B (16.2)	B (16.2)	
	T		B (13.6)	B (13.9)	
	R		A (7.8)	A (7.8)	
	Overall		B (16.6)	B (17.1)	
N. Front Street/Frog Alley		TW			
N. Front Street EB	LTR		A (8.4)	A (8.9)	
N. Front Street WB	LTR		A (7.8)	A (7.7)	
Frog Alley SB	LTR		B (13.1)	**C (17.3)**	
N. Front Street/Wall Street[1]		AW			
N. Front Street EB	[L]TR		A (7.7)	A (7.4)	
N. Front Street WB	LT[R]		A (8.6)	A (8.7)	
	Overall		A (8.2)	A (8.2)	
N. Front Street/Fair Street/Fair Street Extension		AW			
N. Front Street EB	LT		A (8.8)	--	
	[T]		--	A (7.8)	
Fair Street NB	LTR		B (10.7)	--	
	[LR]		--	A (9.6)	
Fair Street Ext SB	R		A (7.5)	--	
	Overall		A (9.8)	A (9.5)	

Intersection		Control	PM Peak Hour		
			2025 No-Build	2025 Build	2025 Build w/ Imp.
Schwenk Drive/Fair Street Extension/Kingston Plaza Drwy		AW			
Schwenk Drive EB	L		F (173)	F (123)	
	T		D (26.8)	**F (89.2)**	
	R		B (13.0)	B (11.6)	
Schwenk Drive WB	LTR		F (123)	F (155)	
Fair Street Extension NB	LTR		E (48.8)	C (21.4)	
Kingston Plaza Drwy SB	L		C (17.5)	C (16.9)	
	T		B (14.3)	B (11.7)	
	R		F (156)	F (129)	
Overall			F (113)	F (112)	
Schwenk Drive EB	L	S		D (51.3)	C (29.7)
	T			B (16.8)	B (14.5)
	R			B (11.8)	B (11.0)
Schwenk Drive WB	LTR			D (39.4)	D (42.3)
Fair Street Extension NB	LTR			C (22.0)	C (23.1)
Kingston Plaza Drwy SB	L			C (22.1)	C (23.3)
	T			B (19.2)	C (20.2)
	R			D (52.7)	B (18.2)
Overall				D (38.4)	C (25.4)
N. Front Street/Clinton Avenue/Schwenk Drive		TW			
Schwenk Drive SB	L		B (11.4)	B (12.2)	
Clinton Avenue/John Street[1]		TW			
Clinton Avenue NB	L		A (5.2)	A (5.6)	
Clinton Avenue NB	LT	S			A (9.8)
Clinton Avenue SB	TR				A (5.9)
Overall					A (8.1)
Clinton Avenue/Westbrook Lane		AW			
Westbrook Lane WB	L,R		C (17.0)	C (17.5)	
Clinton Avenue NB	TR		F (164)	F (242)	
Clinton Avenue SB	LT		D (27.1)	D (39.4.)	
Overall			F (94.3)	F (139)	
Westbrook Lane WB	L	S			D (46.5)
	R				C (28.2)
Clinton Avenue NB	TR				A (8.1)
Clinton Avenue SB	LT				A (2.0)
Overall					B (12.9)
Clinton Avenue/Main Street		TW			
Main Street EB	LR		D (33.6)	**F (119)**	
Main Street EB	LR	S			D (37.3)
Clinton Avenue NB	T				B (13.8)
Clinton Avenue SB	T				A (8.8)
Overall					B (15.2)
Schwenk Drive/Site Driveway		TW			
Schwenk Drive WB	LT		--	A (8.1)	
Site Driveway NB	LR		--	B (13.6)	

S, TW, AW, Y = Signalized, Two-Way Stop, All-Way Stop, Yield controlled intersection
*John Street/Clinton Avenue intersection modeled as a Stop Control on eastbound John Street approach
EB, WB, NB, SB = Eastbound, Westbound, Northbound, or Southbound intersection approaches
L, T, R = Left-turn, Through, and/or Right-turn intersection movements
X (Y.Y) = Level of service (Average delay in seconds per vehicle)
LT[R] = LT: Existing geometry, LTR: [Future geometry]
-- = Not Applicable

Under the DRI traffic pattern, the impacts of the proposed project are generally similar to the existing traffic pattern. The following is noted regarding the Sensitivity LOS analysis:

- The northbound Washington Avenue/Hurley Avenue/Schwenk Drive approach will experience additional traffic volume and delay. The impacts of the proposed

project at this intersection are similar to those under the existing traffic pattern and can be mitigated with minor signal timing adjustments.

- The eastbound Schwenk Drive/Fair Street Extension/Kingston Plaza Driveway will experience additional traffic volume and delay. Under No-Build conditions, this intersection will operate with constraints similar to the existing traffic pattern. Construction of the proposed project is expected to improve operations at this intersection by closing Fair Street Extension to through traffic. It is still recommend that the traffic signal be reactivated.
- The Clinton Avenue/Westbrook Lane intersection will continue to operate with constraints under DRI conditions. A review of the traffic simulation model indicates that under the new traffic pattern, vehicles traveling northbound on Clinton Avenue attempting to turn left onto John Street may create queues that extend into the Clinton Avenue/Westbrook Lane intersection. As such, it is recommended that the City pursue the plan to signalize this intersection as proposed in the DRI, subject to warrants analysis.
- The eastbound Clinton Avenue/Main Street approach will experience additional traffic volume and delay as a result of the new DRI traffic pattern. Under No-Build conditions, the eastbound Main Street approach is expected to operate at LOS D. After completion of the proposed project, the eastbound Main Street approach is expected to operate at LOS F with over a minute of additional delay. It is noted that a review of the traffic simulation model indicates that under No-Build conditions northbound queues from the Clinton Avenue/Westbrook Lane intersection are anticipated to extend through the Clinton Avenue/Main Street intersection. After signalization of the Clinton Avenue/Westbrook Lane intersection, traffic on Clinton Avenue will flow more freely, reducing the number of gaps for traffic turning from Main Street. Therefore, it is recommended that the City consider signalization of the Clinton Avenue/Main Street intersection as part of the DRI traffic pattern. Signalization at this intersection should also consider coordination with the proposed Clinton Avenue/Westbrook Lane intersection to the north, as well as the Clinton Avenue/Albany Avenue intersection to the south.

CHAPTER V
CONCLUSIONS AND RECOMMENDATIONS

A Traffic Impact Study was completed for the construction of a mixed-use urban redevelopment that includes 131 apartment units above 8,950 SF of retail space, and a 32 room Hotel located on Fair Street Extension between N. Front Street and Schwenk Drive in the City of Kingston. The proposed redevelopment will close Fair Street Extension to through traffic in order to provide access to the site. Additional access is proposed on Schwenk Drive east of Fair Street Extension and on N. Front Street, opposite Wall Street.

The project is expected to be completed in 2021, although a conservative design year of 2025 was used for the analysis. The project will generate approximately 115 new vehicle trips during the PM peak hour. The following conclusions and recommendations are offered:

1. The closure of Fair Street Extension to through traffic as part of the Kingstonian project is not expected to have an adverse impact on the operation of adjacent intersections based on CME's capacity analysis contained herein.

2. The increase in off-street public parking as a result of the project is expected to reduce the number of drivers seeking an available on-street parking space along streets in Uptown, circling the block in the process. This would in turn reduce the number of redundant turning movements and associated conflicts with pedestrians.

3. The Washington Avenue/Hurley Avenue/Schwenk Drive intersection will experience an approximate and de minimus two-second increase in overall delay, with the southbound left turn movement experiencing LOS E after completion of the project. As an improvement measure, adjusting the traffic signal timing to reduce the cycle length and increase the percentage of green time given to the northbound and southbound movements will result in non-adverse and impaired vehicular movements.

4. The Schwenk Drive/Fair Street Extension/Kingston Plaza Driveway intersection currently operates with customary urban constraints, with vehicles entering and exiting the Kingston Plaza to and from the west experiencing the greatest delays. After completion of the project, this intersection will continue to operate within the current status quo. However, it is recommended that the existing traffic signal at this intersection be

reactivated. This can be expected to improve intersection operations beyond the current condition.

5. The Clinton Avenue/John Street and Clinton Avenue/Westbrook Lane intersections currently experience customary urban constraints due to traffic volumes on Clinton Avenue and the close proximity of each intersection to one another. A review of the traffic simulation model indicates that under No-Build conditions, southbound queues from the Clinton Avenue/Westbrook Lane intersection are periodically expected to extend to and at times through the Clinton Avenue/John Street intersection. Further, northbound queues at the Clinton Avenue/Westbrook Lane intersection periodically extend on Clinton Avenue to the Albany Street intersection. After completion of the project, both intersections are anticipated to experience continued delay. In order to accommodate future growth and provide for improved mobility, the City could consider signalizing these intersections and operating them as a pair, as proposed in the DRI. These signals could also be coordinated with the Clinton Avenue/Albany Avenue intersection.

6. The project proposes an off-street delivery area accessed via a driveway on Schwenk Drive. The intent of this design is to eliminate the need for delivery vehicles to use the urban street grid to the south where turning radii are smaller and pedestrian activity is greater. This will eliminate additional vehicular deliveries within the area experiencing urban traffic constraints.

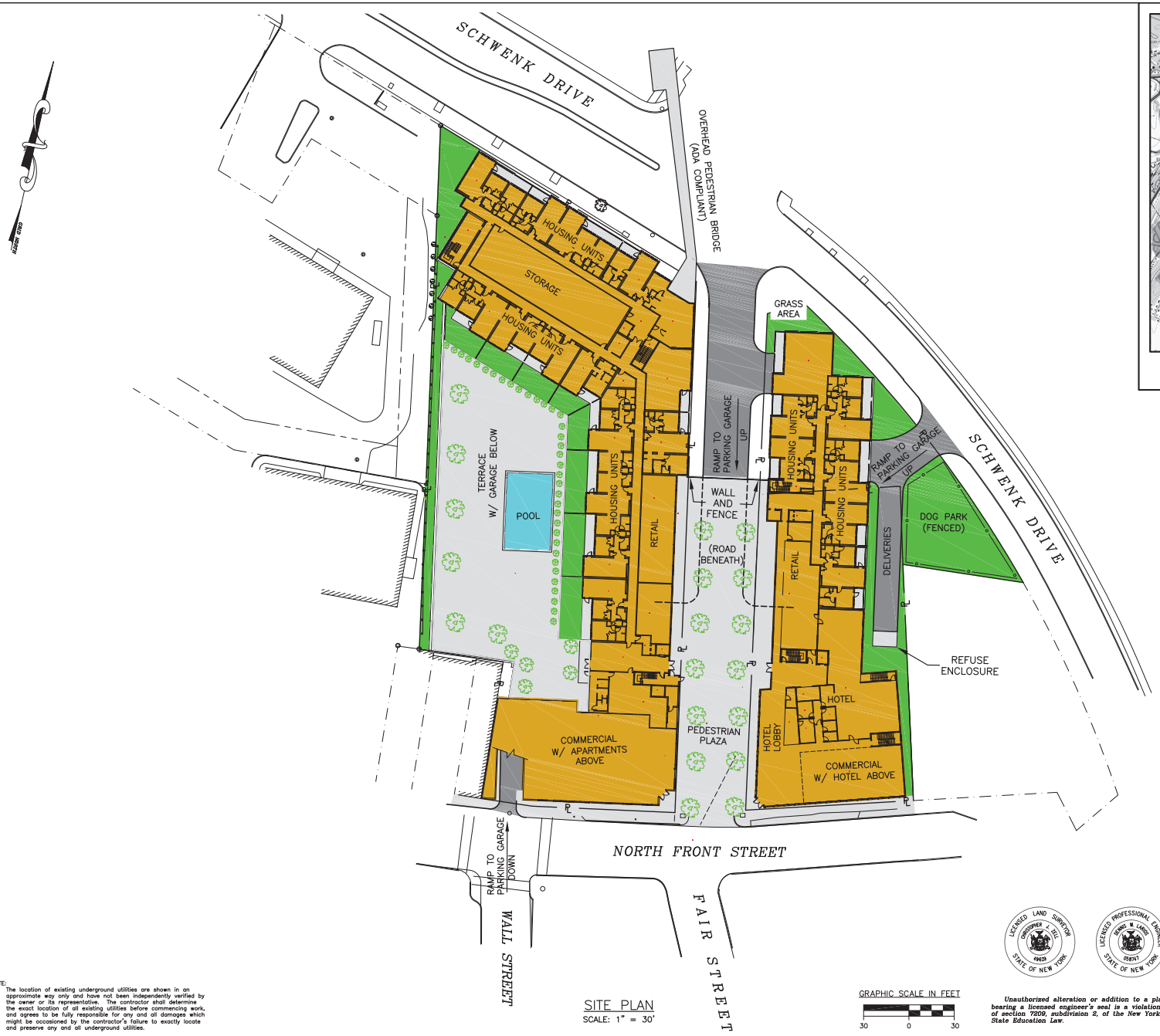
7. The Sensitivity Analysis indicates the under the proposed DRI traffic changes, the project impacts remain generally unchanged and the same mitigation measures are proposed. It is further noted that under the DRI traffic pattern, the Clinton Avenue/Main Street intersection will experience queuing impacts from the adjacent Clinton Avenue/Westbrook Lane intersection. Therefore, although the overall traffic impacts remain generally unchanged between the pre and post-development conditions, the City may wish to consider signalization of this intersection as part of the DRI initiative.

The above analysis indicates that the mixed-use development results in impacts at study area intersections that will be adequately addressed through signal timing modifications, signal reactivation, and signalization of unsignalized intersections along Clinton Avenue. It is noted that a preliminary review of parcel boundaries indicates that adequate ROW is available to construct the proposed improvements at the study area intersections; however, traffic related concepts will be refined as the SEQRA and site plan reviews progress in order to ensure that the adjacent properties are not adversely impacted by the proposed improvements.

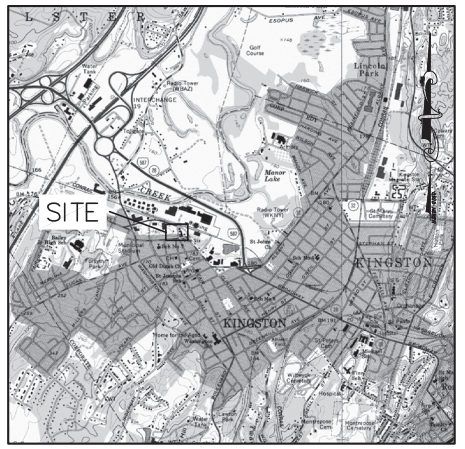
Appendix A

Concept Plan

Traffic Impact Study
The Kingstoinan
City of Kingston, New York



SITE PLAN
SCALE: 1" = 30'



USGS – KINGSTON WEST QUADRANGLE
LOCATION MAP
SCALE: 1" = 2,000'

CITY ZONING INFORMATION

DISTRICT: C-2 CENTRAL COMMERCIAL		
MINIMUM LOT SIZE:		-- S.F.
MINIMUM LOT WIDTH:		-- FEET
MINIMUM LOT DEPTH:		-- FEET
MINIMUM SETBACKS:	FRONT YARD:	-- FEET
	SIDE YARD:	*
	REAR YARD:	*
MAXIMUM BUILDING HEIGHT:		-- FEET
MAXIMUM LOT COVERAGE:		-- %
FLOOR TO AREA RATIO:		2.8

*No side or rear yard is required, but, if provided they must be at least six feet and if a rear yard is contiguous to a residential district, it must be at least 10 feet in the C-2 and C-3 Districts and 30 feet in the M-2 Districts. In an M-2 District no building may be built within 10 feet of a street line.

NOTES:
1. FLOOR PLAN ELEMENTS SHOWN ARE LEVEL 4.
2. WATER SERVICE FROM 16" ON NORTH FRONT STREET.
3. SANITARY SEWER SERVICE FROM NORTH FRONT STREET AND SCHWENK DRIVE
4. REFER TO ARCHITECTURAL DRAWINGS FOR FLOOR PLANS AT EACH OF THE SEVEN (7) LEVELS

NOTE:
The location of existing underground utilities are shown in an approximate way only and have not been independently verified by the owner or its representative. The contractor shall determine the exact location of all existing utilities before commencing work, and agrees to be fully responsible for any and all damages which might be occasioned by the contractor's failure to exactly locate and preserve any and all underground utilities.

GRAPHIC SCALE IN FEET
30 0 30

Unauthorized alteration or addition to a plan bearing a licensed engineer's seal is a violation of section 7209, subdivision 2, of the New York State Education Law.

PRELIMINARY

ILLUSTRATIVE SITE PLAN

KINGSTONIAN
9–21 NORTH FRONT STYREET

CITY OF KINGSTON ULSTER COUNTY NEW YORK

DATE	REVISION RECORD
7/15/19	ADD DOG PARK, REFUSE ENCLOSURE, REMOVED CORRIDOR IN PLAZA AREA EXTENDED BUILDING

BRINNIER & LARIOS, P.C.
ENGINEERS & LAND SURVEYORS
67 MAIDEN LANE KINGSTON, N.Y.
Phone: 845-338-7622 Fax: 845-338-7660

SCALE	DATE	SHEET NO.
1" = 30'	NOV. 2018	2 OF 2
	DWG RJS / CHK DML	

Appendix B

Turning Movement Counts

Traffic Impact Study
The Kingstonian
City of Kingston, New York

www.TSTData.com
184 Baker Rd

Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Kingston, NY
Clinton Ave & John St
Thursday, May 9, 2019
Location: 41.934134, -74.017406

Count Name: Clinton Ave & John St
Site Code:
Start Date: 05/09/2019

Turning Movement Data

Start Time	John St Eastbound				Clinton Ave Northbound				Clinton Ave Southbound				
	Left	Right	Peds	App. Total	Thru	U-Turn	Peds	App. Total	Thru	U-Turn	Peds	App. Total	Int. Total
4:00 PM	9	40	1	49	87	0	0	87	54	0	0	54	190
4:15 PM	7	36	2	43	116	0	2	116	43	0	2	43	202
4:30 PM	4	41	0	45	99	0	6	99	54	0	0	54	198
4:45 PM	3	35	4	38	101	0	2	101	39	0	0	39	178
Hourly Total	23	152	7	175	403	0	10	403	190	0	2	190	768
5:00 PM	13	38	1	51	104	0	0	104	53	0	1	53	208
5:15 PM	5	41	0	46	96	0	0	96	68	0	1	68	210
5:30 PM	7	25	1	32	110	0	0	110	60	0	0	60	202
5:45 PM	5	35	1	40	105	0	0	105	53	0	0	53	198
Hourly Total	30	139	3	169	415	0	0	415	234	0	2	234	818
Grand Total	53	291	10	344	818	0	10	818	424	0	4	424	1586
Approach %	15.4	84.6	-	-	100.0	0.0	-	-	100.0	0.0	-	-	-
Total %	3.3	18.3	-	21.7	51.6	0.0	-	51.6	26.7	0.0	-	26.7	-
Lights	53	286	-	339	811	0	-	811	414	0	-	414	1564
% Lights	100.0	98.3	-	98.5	99.1	-	-	99.1	97.6	-	-	97.6	98.6
Buses	0	3	-	3	4	0	-	4	9	0	-	9	16
% Buses	0.0	1.0	-	0.9	0.5	-	-	0.5	2.1	-	-	2.1	1.0
Trucks	0	2	-	2	3	0	-	3	1	0	-	1	6
% Trucks	0.0	0.7	-	0.6	0.4	-	-	0.4	0.2	-	-	0.2	0.4
Bicycles on Crosswalk	-	-	1	-	-	-	0	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	10.0	-	-	-	0.0	-	-	-	25.0	-	-
Pedestrians	-	-	9	-	-	-	10	-	-	-	3	-	-
% Pedestrians	-	-	90.0	-	-	-	100.0	-	-	-	75.0	-	-

www.TSTData.com
184 Baker Rd

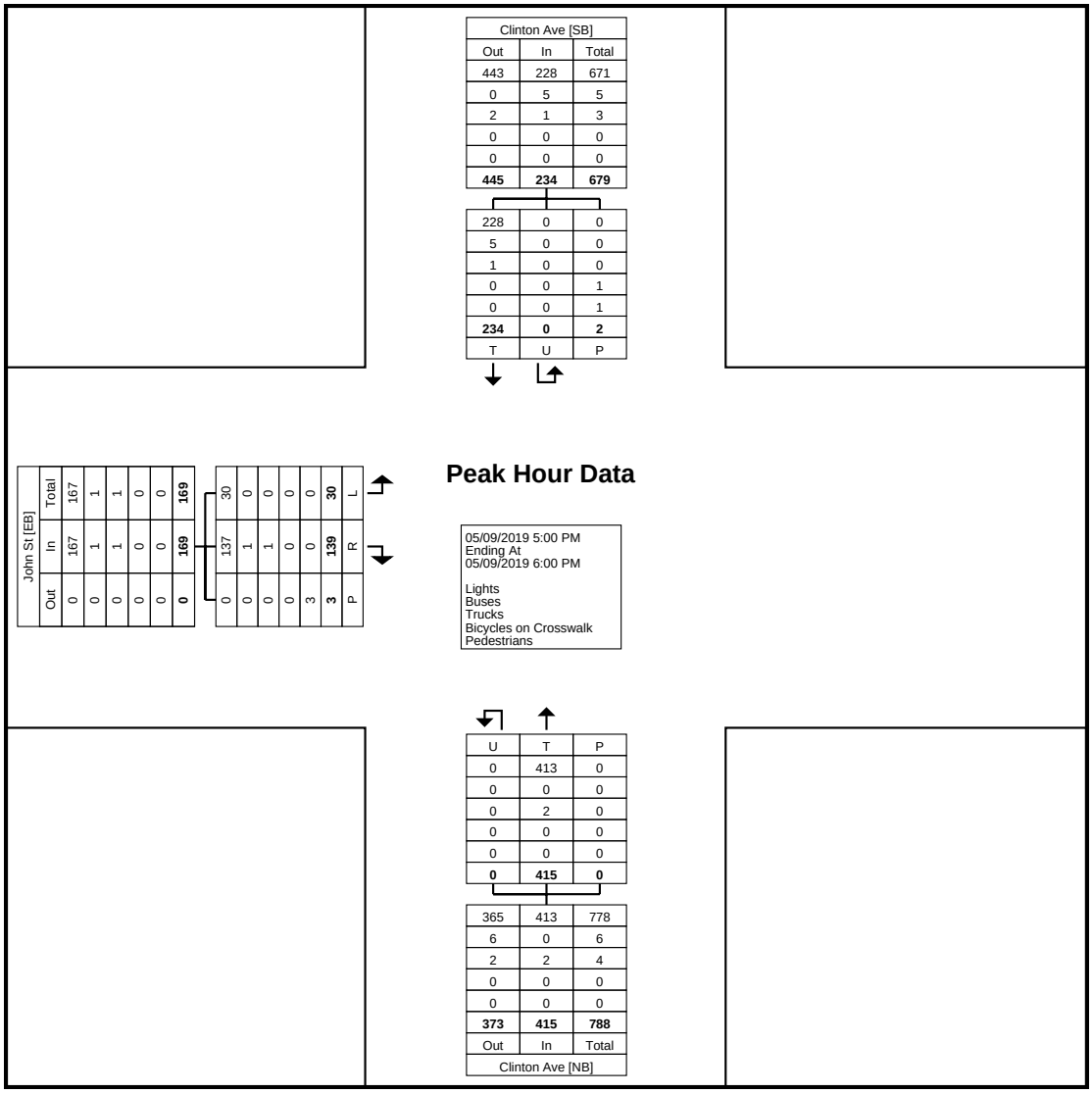
Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Kingston, NY
Clinton Ave & John St
Thursday, May 9, 2019
Location: 41.934134, -74.017406

Count Name: Clinton Ave & John St
Site Code:
Start Date: 05/09/2019

Turning Movement Peak Hour Data (5:00 PM)

Start Time	John St Eastbound				Clinton Ave Northbound				Clinton Ave Southbound				
	Left	Right	Peds	App. Total	Thru	U-Turn	Peds	App. Total	Thru	U-Turn	Peds	App. Total	Int. Total
5:00 PM	13	38	1	51	104	0	0	104	53	0	1	53	208
5:15 PM	5	41	0	46	96	0	0	96	68	0	1	68	210
5:30 PM	7	25	1	32	110	0	0	110	60	0	0	60	202
5:45 PM	5	35	1	40	105	0	0	105	53	0	0	53	198
Total	30	139	3	169	415	0	0	415	234	0	2	234	818
Approach %	17.8	82.2	-	-	100.0	0.0	-	-	100.0	0.0	-	-	-
Total %	3.7	17.0	-	20.7	50.7	0.0	-	50.7	28.6	0.0	-	28.6	-
PHF	0.577	0.848	-	0.828	0.943	0.000	-	0.943	0.860	0.000	-	0.860	0.974
Lights	30	137	-	167	413	0	-	413	228	0	-	228	808
% Lights	100.0	98.6	-	98.8	99.5	-	-	99.5	97.4	-	-	97.4	98.8
Buses	0	1	-	1	0	0	-	0	5	0	-	5	6
% Buses	0.0	0.7	-	0.6	0.0	-	-	0.0	2.1	-	-	2.1	0.7
Trucks	0	1	-	1	2	0	-	2	1	0	-	1	4
% Trucks	0.0	0.7	-	0.6	0.5	-	-	0.5	0.4	-	-	0.4	0.5
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	0.0	-	-	-	-	-	-	-	50.0	-	-
Pedestrians	-	-	3	-	-	-	0	-	-	-	1	-	-
% Pedestrians	-	-	100.0	-	-	-	-	-	-	-	50.0	-	-



Turning Movement Peak Hour Data Plot (5:00 PM)

www.TSTData.com
184 Baker Rd

Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Kingston, NY
Clinton Ave & Main St
Thursday, May 9, 2019
Location: 41.933308, -74.016399

Count Name: Clinton Ave & Main St
Site Code:
Start Date: 05/09/2019

Turning Movement Data

Start Time	Main St Eastbound		Clinton Ave Northbound					Clinton Ave Southbound					
	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:00 PM	2	0	31	124	0	0	155	122	9	0	5	131	286
4:15 PM	4	0	25	151	0	3	176	115	12	0	0	127	303
4:30 PM	5	0	34	149	0	2	183	126	8	0	6	134	317
4:45 PM	13	0	37	132	0	4	169	114	12	0	1	126	295
Hourly Total	24	0	127	556	0	9	683	477	41	0	12	518	1201
5:00 PM	7	0	38	125	0	1	163	129	9	0	4	138	301
5:15 PM	7	0	36	136	0	1	172	141	10	0	4	151	323
5:30 PM	5	0	28	128	0	1	156	132	11	0	0	143	299
5:45 PM	2	0	27	133	0	0	160	112	13	0	2	125	285
Hourly Total	21	0	129	522	0	3	651	514	43	0	10	557	1208
Grand Total	45	0	256	1078	0	12	1334	991	84	0	22	1075	2409
Approach %	-	-	19.2	80.8	0.0	-	-	92.2	7.8	0.0	-	-	-
Total %	-	0.0	10.6	44.7	0.0	-	55.4	41.1	3.5	0.0	-	44.6	-
Lights	-	0	255	1057	0	-	1312	980	81	0	-	1061	2373
% Lights	-	-	99.6	98.1	-	-	98.4	98.9	96.4	-	-	98.7	98.5
Buses	-	0	1	14	0	-	15	8	2	0	-	10	25
% Buses	-	-	0.4	1.3	-	-	1.1	0.8	2.4	-	-	0.9	1.0
Trucks	-	0	0	7	0	-	7	3	1	0	-	4	11
% Trucks	-	-	0.0	0.6	-	-	0.5	0.3	1.2	-	-	0.4	0.5
Bicycles on Crosswalk	5	-	-	-	-	0	-	-	-	-	1	-	-
% Bicycles on Crosswalk	11.1	-	-	-	-	0.0	-	-	-	-	4.5	-	-
Pedestrians	40	-	-	-	-	12	-	-	-	-	21	-	-
% Pedestrians	88.9	-	-	-	-	100.0	-	-	-	-	95.5	-	-

www.TSTData.com
184 Baker Rd

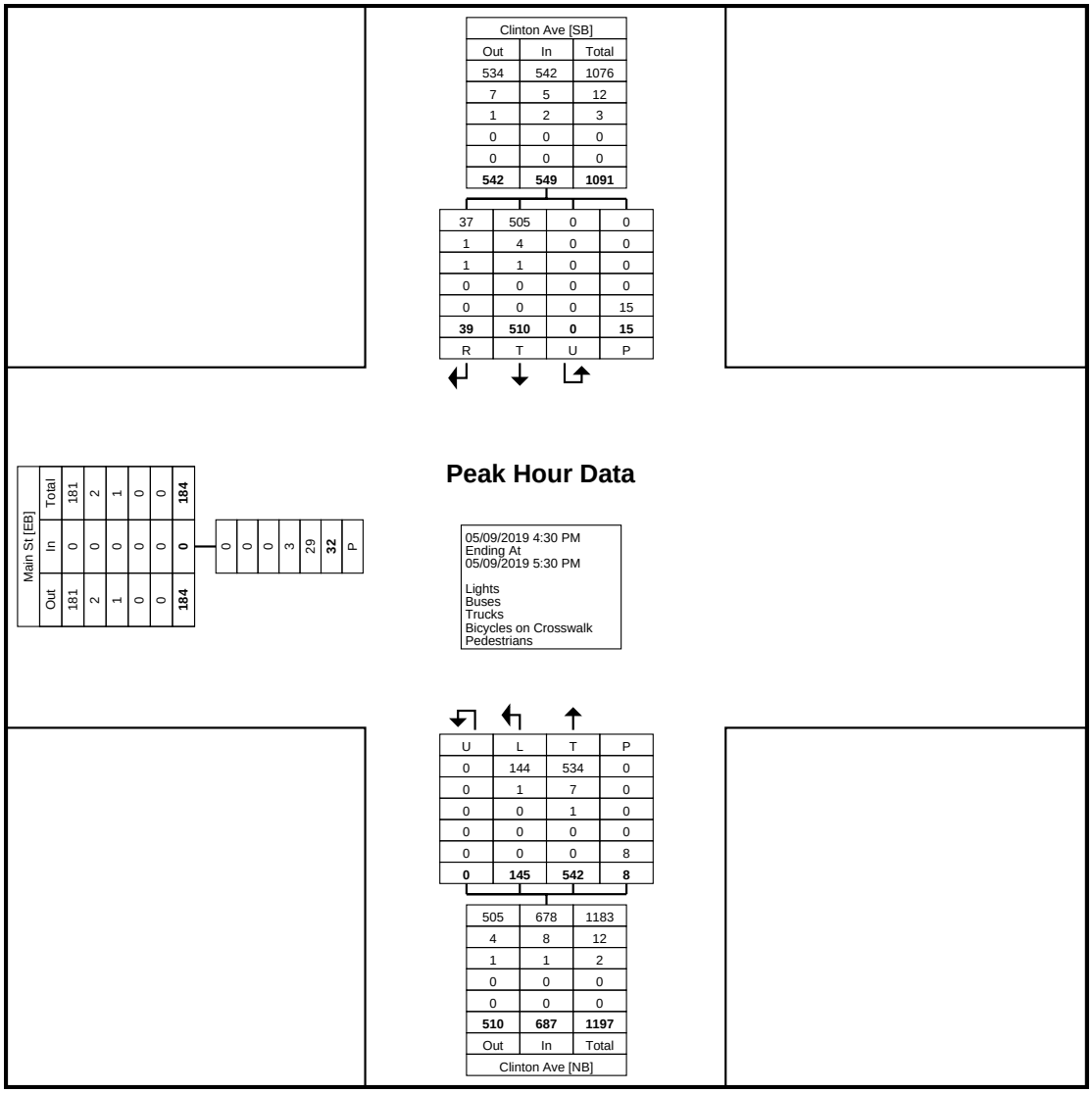
Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Kingston, NY
Clinton Ave & Main St
Thursday, May 9, 2019
Location: 41.933308, -74.016399

Count Name: Clinton Ave & Main St
Site Code:
Start Date: 05/09/2019

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Main St Eastbound		Clinton Ave Northbound					Clinton Ave Southbound					
	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:30 PM	5	0	34	149	0	2	183	126	8	0	6	134	317
4:45 PM	13	0	37	132	0	4	169	114	12	0	1	126	295
5:00 PM	7	0	38	125	0	1	163	129	9	0	4	138	301
5:15 PM	7	0	36	136	0	1	172	141	10	0	4	151	323
Total	32	0	145	542	0	8	687	510	39	0	15	549	1236
Approach %	-	-	21.1	78.9	0.0	-	-	92.9	7.1	0.0	-	-	-
Total %	-	0.0	11.7	43.9	0.0	-	55.6	41.3	3.2	0.0	-	44.4	-
PHF	-	0.000	0.954	0.909	0.000	-	0.939	0.904	0.813	0.000	-	0.909	0.957
Lights	-	0	144	534	0	-	678	505	37	0	-	542	1220
% Lights	-	-	99.3	98.5	-	-	98.7	99.0	94.9	-	-	98.7	98.7
Buses	-	0	1	7	0	-	8	4	1	0	-	5	13
% Buses	-	-	0.7	1.3	-	-	1.2	0.8	2.6	-	-	0.9	1.1
Trucks	-	0	0	1	0	-	1	1	1	0	-	2	3
% Trucks	-	-	0.0	0.2	-	-	0.1	0.2	2.6	-	-	0.4	0.2
Bicycles on Crosswalk	3	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	9.4	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	29	-	-	-	-	8	-	-	-	-	15	-	-
% Pedestrians	90.6	-	-	-	-	100.0	-	-	-	-	100.0	-	-



Turning Movement Peak Hour Data Plot (4:30 PM)

www.TSTData.com
184 Baker Rd

Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Kingston, NY
Clinton Ave & Westbrook Lane
Thursday, May 9, 2019
Location: 41.933942, -74.017118

Count Name: Clinton Ave & Westbrook Ln
Site Code:
Start Date: 05/09/2019

Turning Movement Data

Start Time	Westbrook Ln Westbound					Clinton Ave Northbound					Clinton Ave Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
4:00 PM	49	17	0	1	66	72	57	0	0	129	9	78	0	0	87	282
4:15 PM	47	12	0	0	59	100	43	0	1	143	8	71	0	3	79	281
4:30 PM	54	13	0	0	67	82	64	0	1	146	6	86	0	7	92	305
4:45 PM	55	13	0	2	68	84	53	0	1	137	10	65	0	6	75	280
Hourly Total	205	55	0	3	260	338	217	0	3	555	33	300	0	16	333	1148
5:00 PM	64	23	0	5	87	75	42	0	2	117	11	70	0	1	81	285
5:15 PM	43	13	0	5	56	85	58	0	1	143	13	102	0	1	115	314
5:30 PM	57	17	0	2	74	90	35	0	0	125	1	84	0	0	85	284
5:45 PM	44	8	0	1	52	99	41	0	0	140	8	77	0	0	85	277
Hourly Total	208	61	0	13	269	349	176	0	3	525	33	333	0	2	366	1160
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	413	116	0	16	529	687	393	0	6	1080	66	633	0	18	699	2308
Approach %	78.1	21.9	0.0	-	-	63.6	36.4	0.0	-	-	9.4	90.6	0.0	-	-	-
Total %	17.9	5.0	0.0	-	22.9	29.8	17.0	0.0	-	46.8	2.9	27.4	0.0	-	30.3	-
Lights	410	115	0	-	525	682	376	0	-	1058	62	622	0	-	684	2267
% Lights	99.3	99.1	-	-	99.2	99.3	95.7	-	-	98.0	93.9	98.3	-	-	97.9	98.2
Buses	2	0	0	-	2	1	13	0	-	14	4	9	0	-	13	29
% Buses	0.5	0.0	-	-	0.4	0.1	3.3	-	-	1.3	6.1	1.4	-	-	1.9	1.3
Trucks	1	1	0	-	2	4	4	0	-	8	0	2	0	-	2	12
% Trucks	0.2	0.9	-	-	0.4	0.6	1.0	-	-	0.7	0.0	0.3	-	-	0.3	0.5
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	1	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	6.3	-	-	-	-	16.7	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	15	-	-	-	-	5	-	-	-	-	18	-	-
% Pedestrians	-	-	-	93.8	-	-	-	-	83.3	-	-	-	-	100.0	-	-

www.TSTData.com
184 Baker Rd

Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Kingston, NY
Clinton Ave & Westbrook Lane
Thursday, May 9, 2019
Location: 41.933942, -74.017118

Count Name: Clinton Ave & Westbrook Ln
Site Code:
Start Date: 05/09/2019

Turning Movement Peak Hour Data (4:30 PM)

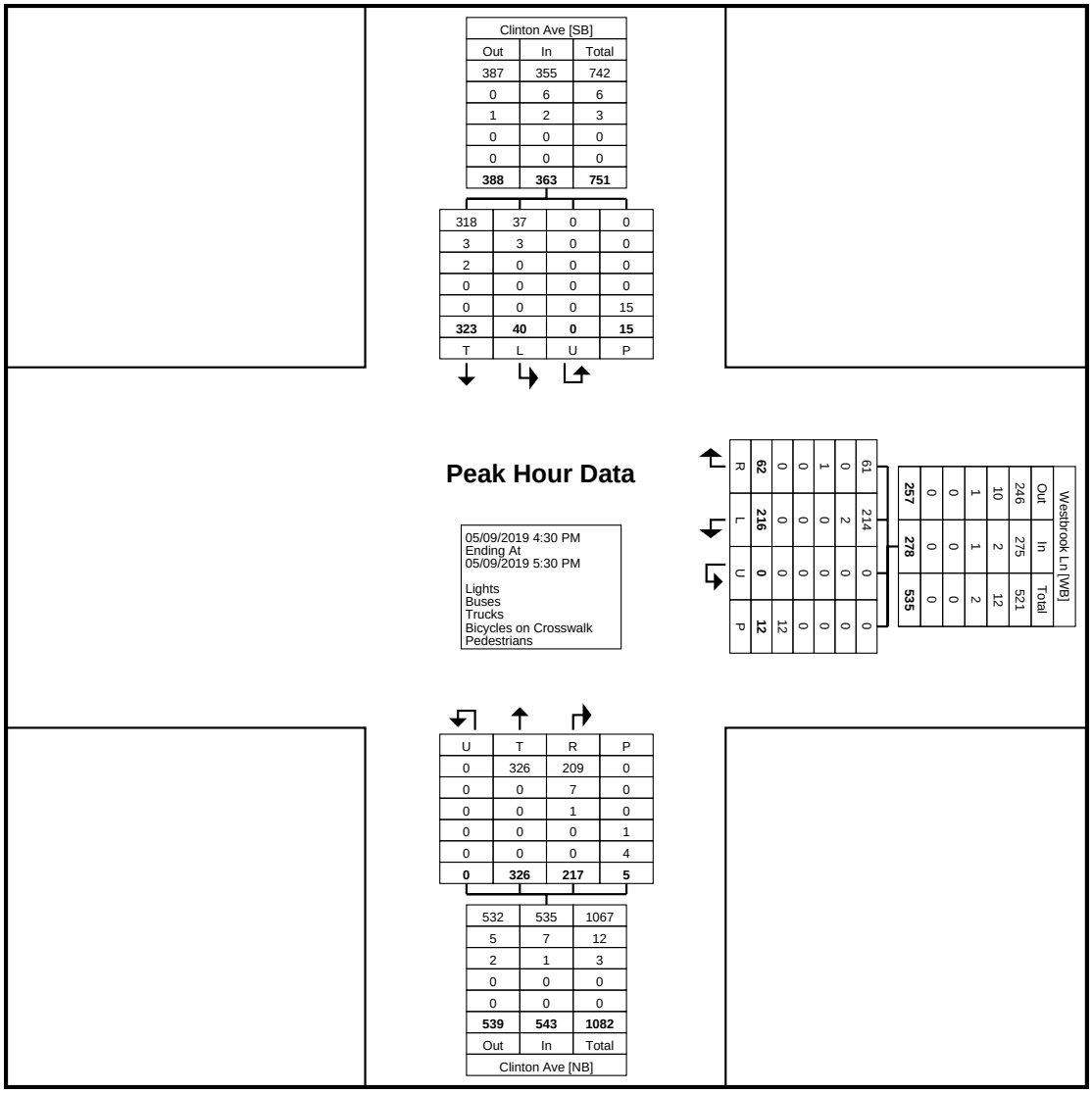
Start Time	Westbrook Ln Westbound					Clinton Ave Northbound					Clinton Ave Southbound					Int. Total
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	
4:30 PM	54	13	0	0	67	82	64	0	1	146	6	86	0	7	92	305
4:45 PM	55	13	0	2	68	84	53	0	1	137	10	65	0	6	75	280
5:00 PM	64	23	0	5	87	75	42	0	2	117	11	70	0	1	81	285
5:15 PM	43	13	0	5	56	85	58	0	1	143	13	102	0	1	115	314
Total	216	62	0	12	278	326	217	0	5	543	40	323	0	15	363	1184
Approach %	77.7	22.3	0.0	-	-	60.0	40.0	0.0	-	-	11.0	89.0	0.0	-	-	-
Total %	18.2	5.2	0.0	-	23.5	27.5	18.3	0.0	-	45.9	3.4	27.3	0.0	-	30.7	-
PHF	0.844	0.674	0.000	-	0.799	0.959	0.848	0.000	-	0.930	0.769	0.792	0.000	-	0.789	0.943
Lights	214	61	0	-	275	326	209	0	-	535	37	318	0	-	355	1165
% Lights	99.1	98.4	-	-	98.9	100.0	96.3	-	-	98.5	92.5	98.5	-	-	97.8	98.4
Buses	2	0	0	-	2	0	7	0	-	7	3	3	0	-	6	15
% Buses	0.9	0.0	-	-	0.7	0.0	3.2	-	-	1.3	7.5	0.9	-	-	1.7	1.3
Trucks	0	1	0	-	1	0	1	0	-	1	0	2	0	-	2	4
% Trucks	0.0	1.6	-	-	0.4	0.0	0.5	-	-	0.2	0.0	0.6	-	-	0.6	0.3
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	20.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	12	-	-	-	-	4	-	-	-	-	15	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	80.0	-	-	-	-	100.0	-	-

www.TSTData.com
184 Baker Rd

Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Kingston, NY
Clinton Ave & Westbrook Lane
Thursday, May 9, 2019
Location: 41.933942, -74.017118

Count Name: Clinton Ave & Westbrook Ln
Site Code:
Start Date: 05/09/2019



Turning Movement Peak Hour Data Plot (4:30 PM)

TRI-STATE TRAFFIC DATA
www.TSTData.com
184 Baker Rd

Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Kingston, NY
N.Front St & Fair St
Thursday, Maay 9, 2019
Location: 41.935234, -74.019545

Count Name: N Front St & Fair St
Site Code:
Start Date: 05/09/2019

Turning Movement Data

Start Time	N Front St Eastbound					N Front St Westbound					Fair St Northbound		Fair St Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:00 PM	14	39	0	12	53	9	35	2	4	46	15	0	16	6	0	10	22	121
4:15 PM	20	34	0	11	54	6	42	0	9	48	5	0	18	15	0	3	33	135
4:30 PM	28	45	0	14	73	5	34	4	4	43	12	0	29	10	0	5	39	155
4:45 PM	18	36	0	9	54	12	36	3	9	51	7	0	23	5	0	5	28	133
Hourly Total	80	154	0	46	234	32	147	9	26	188	39	0	86	36	0	23	122	544
5:00 PM	26	40	0	12	66	11	33	2	14	46	5	0	22	10	0	7	32	144
5:15 PM	21	50	0	6	71	4	49	1	3	54	4	0	31	9	0	1	40	165
5:30 PM	15	32	0	5	47	3	46	2	3	51	5	0	20	7	0	5	27	125
5:45 PM	6	46	0	7	52	6	50	2	5	58	1	0	24	7	0	2	31	141
Hourly Total	68	168	0	30	236	24	178	7	25	209	15	0	97	33	0	15	130	575
6:00 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1
Grand Total	148	322	0	76	470	56	325	17	51	398	54	0	183	69	0	38	252	1120
Approach %	31.5	68.5	0.0	-	-	14.1	81.7	4.3	-	-	-	-	72.6	27.4	0.0	-	-	-
Total %	13.2	28.8	0.0	-	42.0	5.0	29.0	1.5	-	35.5	-	0.0	16.3	6.2	0.0	-	22.5	-
Lights	148	316	0	-	464	55	322	17	-	394	-	0	179	68	0	-	247	1105
% Lights	100.0	98.1	-	-	98.7	98.2	99.1	100.0	-	99.0	-	-	97.8	98.6	-	-	98.0	98.7
Buses	0	3	0	-	3	0	0	0	-	0	-	0	3	0	0	-	3	6
% Buses	0.0	0.9	-	-	0.6	0.0	0.0	0.0	-	0.0	-	-	1.6	0.0	-	-	1.2	0.5
Trucks	0	3	0	-	3	1	3	0	-	4	-	0	1	1	0	-	2	9
% Trucks	0.0	0.9	-	-	0.6	1.8	0.9	0.0	-	1.0	-	-	0.5	1.4	-	-	0.8	0.8
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	1	-	0	-	-	-	-	4	-	-
% Bicycles on Crosswalk	-	-	-	1.3	-	-	-	-	2.0	-	0.0	-	-	-	-	10.5	-	-
Pedestrians	-	-	-	75	-	-	-	-	50	-	54	-	-	-	-	34	-	-
% Pedestrians	-	-	-	98.7	-	-	-	-	98.0	-	100.0	-	-	-	-	89.5	-	-

www.TSTData.com
184 Baker Rd

Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Kingston, NY
N.Front St & Fair St
Thursday, Maay 9, 2019
Location: 41.935234, -74.019545

Count Name: N Front St & Fair St
Site Code:
Start Date: 05/09/2019

Turning Movement Peak Hour Data (4:30 PM)

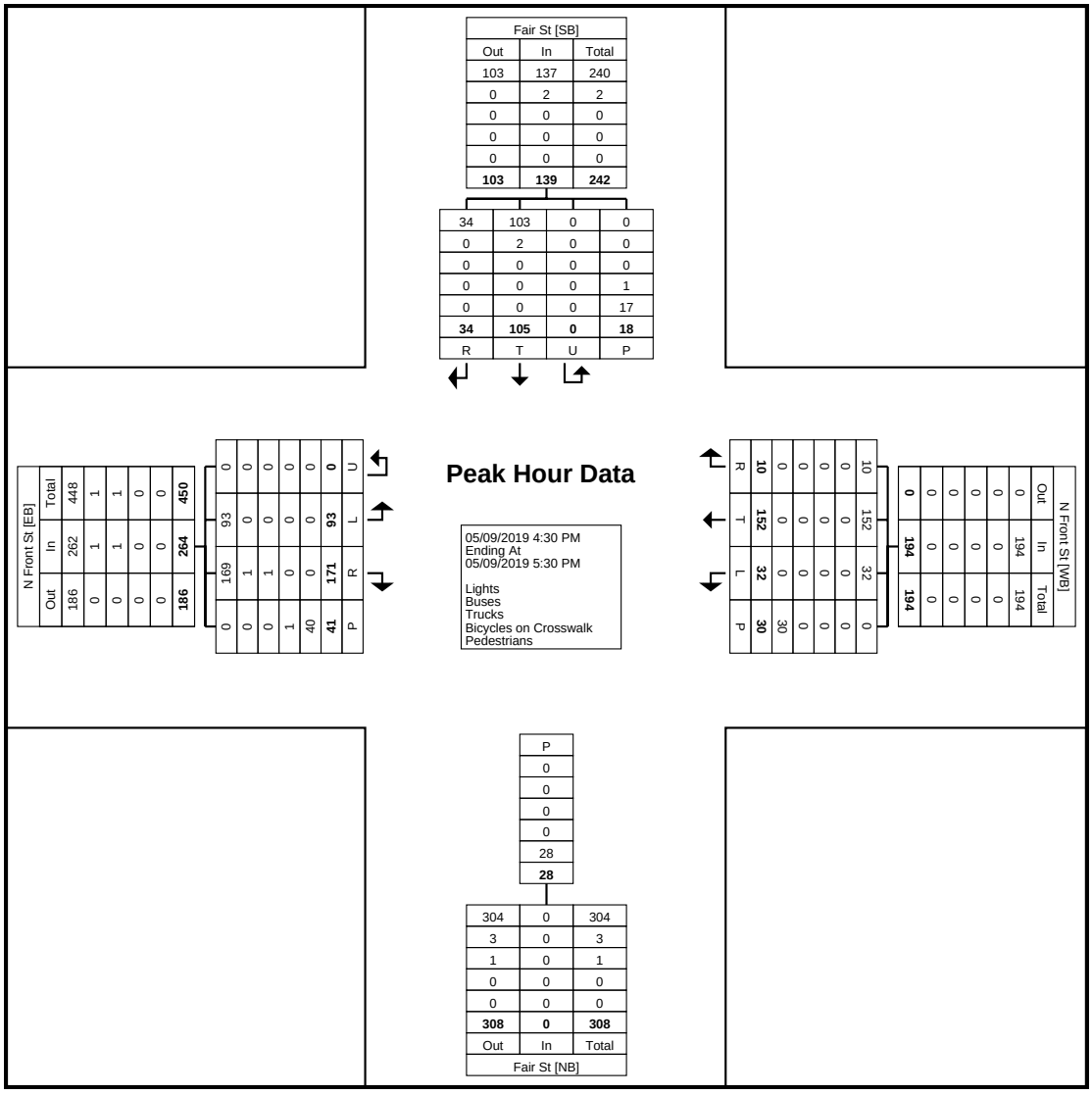
Start Time	N Front St Eastbound					N Front St Westbound					Fair St Northbound		Fair St Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:30 PM	28	45	0	14	73	5	34	4	4	43	12	0	29	10	0	5	39	155
4:45 PM	18	36	0	9	54	12	36	3	9	51	7	0	23	5	0	5	28	133
5:00 PM	26	40	0	12	66	11	33	2	14	46	5	0	22	10	0	7	32	144
5:15 PM	21	50	0	6	71	4	49	1	3	54	4	0	31	9	0	1	40	165
Total	93	171	0	41	264	32	152	10	30	194	28	0	105	34	0	18	139	597
Approach %	35.2	64.8	0.0	-	-	16.5	78.4	5.2	-	-	-	-	75.5	24.5	0.0	-	-	-
Total %	15.6	28.6	0.0	-	44.2	5.4	25.5	1.7	-	32.5	-	0.0	17.6	5.7	0.0	-	23.3	-
PHF	0.830	0.855	0.000	-	0.904	0.667	0.776	0.625	-	0.898	-	0.000	0.847	0.850	0.000	-	0.869	0.905
Lights	93	169	0	-	262	32	152	10	-	194	-	0	103	34	0	-	137	593
% Lights	100.0	98.8	-	-	99.2	100.0	100.0	100.0	-	100.0	-	-	98.1	100.0	-	-	98.6	99.3
Buses	0	1	0	-	1	0	0	0	-	0	-	0	2	0	0	-	2	3
% Buses	0.0	0.6	-	-	0.4	0.0	0.0	0.0	-	0.0	-	-	1.9	0.0	-	-	1.4	0.5
Trucks	0	1	0	-	1	0	0	0	-	0	-	0	0	0	0	-	0	1
% Trucks	0.0	0.6	-	-	0.4	0.0	0.0	0.0	-	0.0	-	-	0.0	0.0	-	-	0.0	0.2
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	0	-	0	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	2.4	-	-	-	-	0.0	-	0.0	-	-	-	-	5.6	-	-
Pedestrians	-	-	-	40	-	-	-	-	30	-	28	-	-	-	-	17	-	-
% Pedestrians	-	-	-	97.6	-	-	-	-	100.0	-	100.0	-	-	-	-	94.4	-	-

www.TSTData.com
184 Baker Rd

Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Kingston, NY
N.Front St & Fair St
Thursday, Maay 9, 2019
Location: 41.935234, -74.019545

Count Name: N Front St & Fair St
Site Code:
Start Date: 05/09/2019



Turning Movement Peak Hour Data Plot (4:30 PM)

www.TSTData.com
184 Baker Rd

Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Kingston, NY
N.Front St & Wall St
Thursday, May 9, 2019
Location: 41.935165, -74.020044

Count Name: N Front St & Wall St
Site Code:
Start Date: 05/09/2019

Turning Movement Data

Start Time	N Front St Eastbound				N Front St Westbound				Wall St Northbound				
	Thru	U-Turn	Peds	App. Total	Thru	U-Turn	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
4:00 PM	40	0	24	40	46	0	13	46	45	12	18	57	143
4:15 PM	27	0	14	27	54	0	9	54	39	24	7	63	144
4:30 PM	42	0	15	42	46	0	10	46	47	33	12	80	168
4:45 PM	33	0	6	33	41	0	13	41	49	22	12	71	145
Hourly Total	142	0	59	142	187	0	45	187	180	91	49	271	600
5:00 PM	39	0	13	39	44	0	14	44	68	27	4	95	178
5:15 PM	40	0	10	40	59	0	8	59	44	32	8	76	175
5:30 PM	37	0	15	37	56	0	4	56	45	10	5	55	148
5:45 PM	38	0	4	38	59	0	1	59	39	12	11	51	148
Hourly Total	154	0	42	154	218	0	27	218	196	81	28	277	649
6:00 PM	0	0	0	0	0	0	0	0	1	0	0	1	1
Grand Total	296	0	101	296	405	0	72	405	377	172	77	549	1250
Approach %	100.0	0.0	-	-	100.0	0.0	-	-	68.7	31.3	-	-	-
Total %	23.7	0.0	-	23.7	32.4	0.0	-	32.4	30.2	13.8	-	43.9	-
Lights	295	0	-	295	402	0	-	402	367	167	-	534	1231
% Lights	99.7	-	-	99.7	99.3	-	-	99.3	97.3	97.1	-	97.3	98.5
Buses	1	0	-	1	0	0	-	0	1	2	-	3	4
% Buses	0.3	-	-	0.3	0.0	-	-	0.0	0.3	1.2	-	0.5	0.3
Trucks	0	0	-	0	3	0	-	3	9	3	-	12	15
% Trucks	0.0	-	-	0.0	0.7	-	-	0.7	2.4	1.7	-	2.2	1.2
Bicycles on Crosswalk	-	-	2	-	-	-	1	-	-	-	2	-	-
% Bicycles on Crosswalk	-	-	2.0	-	-	-	1.4	-	-	-	2.6	-	-
Pedestrians	-	-	99	-	-	-	71	-	-	-	75	-	-
% Pedestrians	-	-	98.0	-	-	-	98.6	-	-	-	97.4	-	-

www.TSTData.com
184 Baker Rd

Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Kingston, NY
N.Front St & Wall St
Thursday, May 9, 2019
Location: 41.935165, -74.020044

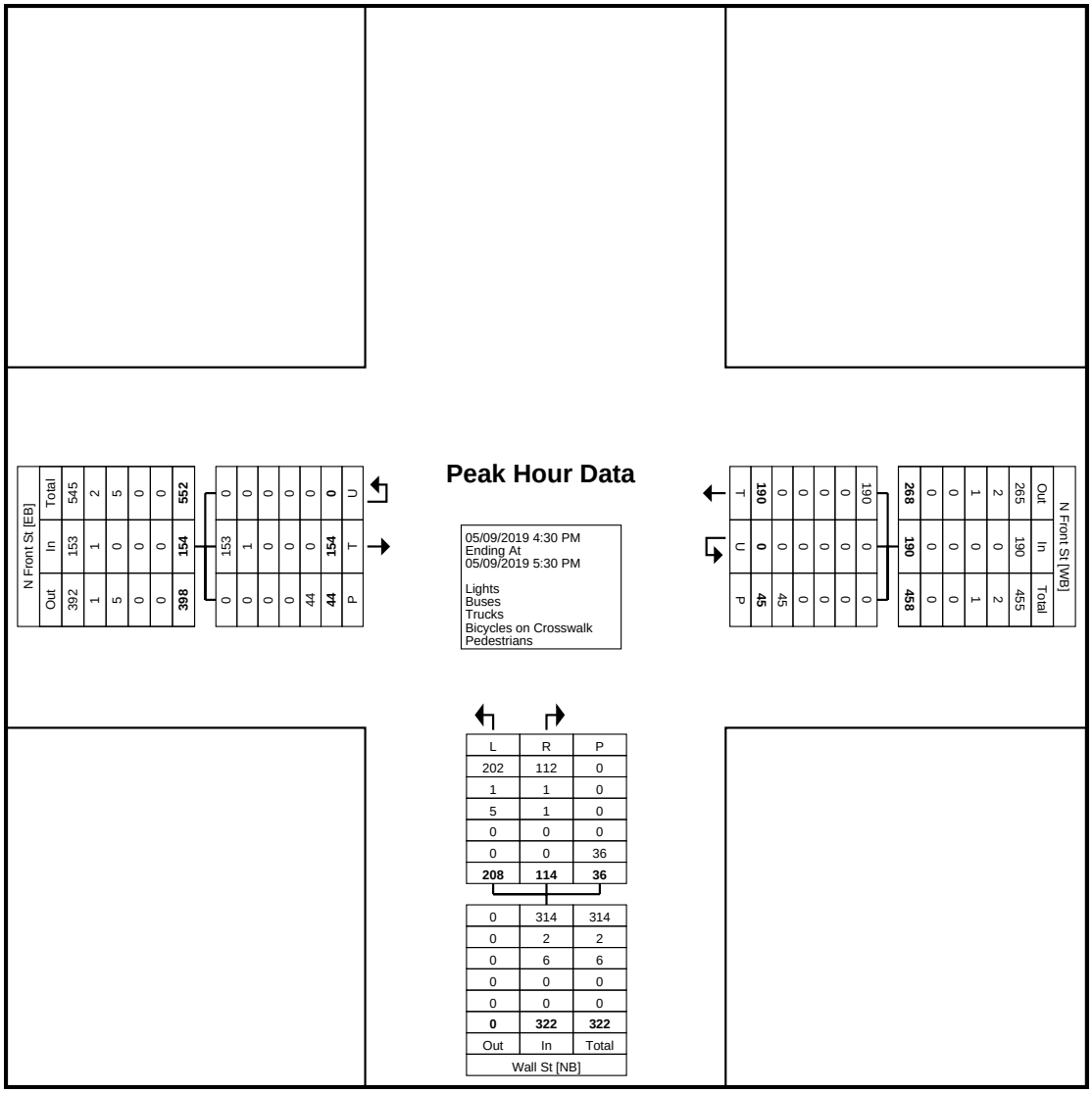
Count Name: N Front St & Wall St
Site Code:
Start Date: 05/09/2019

Turning Movement Peak Hour Data (4:30 PM)

Start Time	N Front St Eastbound				N Front St Westbound				Wall St Northbound				
	Thru	U-Turn	Peds	App. Total	Thru	U-Turn	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
4:30 PM	42	0	15	42	46	0	10	46	47	33	12	80	168
4:45 PM	33	0	6	33	41	0	13	41	49	22	12	71	145
5:00 PM	39	0	13	39	44	0	14	44	68	27	4	95	178
5:15 PM	40	0	10	40	59	0	8	59	44	32	8	76	175
Total	154	0	44	154	190	0	45	190	208	114	36	322	666
Approach %	100.0	0.0	-	-	100.0	0.0	-	-	64.6	35.4	-	-	-
Total %	23.1	0.0	-	23.1	28.5	0.0	-	28.5	31.2	17.1	-	48.3	-
PHF	0.917	0.000	-	0.917	0.805	0.000	-	0.805	0.765	0.864	-	0.847	0.935
Lights	153	0	-	153	190	0	-	190	202	112	-	314	657
% Lights	99.4	-	-	99.4	100.0	-	-	100.0	97.1	98.2	-	97.5	98.6
Buses	1	0	-	1	0	0	-	0	1	1	-	2	3
% Buses	0.6	-	-	0.6	0.0	-	-	0.0	0.5	0.9	-	0.6	0.5
Trucks	0	0	-	0	0	0	-	0	5	1	-	6	6
% Trucks	0.0	-	-	0.0	0.0	-	-	0.0	2.4	0.9	-	1.9	0.9
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	0.0	-	-	-	0.0	-	-	-	0.0	-	-
Pedestrians	-	-	44	-	-	-	45	-	-	-	36	-	-
% Pedestrians	-	-	100.0	-	-	-	100.0	-	-	-	100.0	-	-

Kingston, NY
N.Front St & Wall St
Thursday, May 9, 2019
Location: 41.935165, -74.020044

Count Name: N Front St & Wall St
Site Code:
Start Date: 05/09/2019



Turning Movement Peak Hour Data Plot (4:30 PM)

www.TSTData.com
184 Baker Rd

Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Kingston, NY
Schwenk Dr & Fair St
Thursday, May 9, 2019
Location: 41.936411, -74.019825

Count Name: Schwenk Dr & Fair St & Kingston Plaza
Site Code:
Start Date: 05/09/2019

Turning Movement Data

Start Time	Schwenk Dr Eastbound							Schwenk Dr Westbound							Fair St Northbound							Kingston Plaza Southbound							Int. Total
	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	
4:00 PM	89	46	4	4	0	1	143	0	46	2	7	0	10	55	2	12	0	0	0	1	14	8	14	22	78	0	0	122	334
4:15 PM	93	32	2	13	0	0	140	0	58	6	11	0	5	75	10	9	0	1	0	2	20	10	17	26	75	0	0	128	363
4:30 PM	96	42	7	9	0	3	154	1	43	2	9	0	12	55	17	16	0	2	0	4	35	11	20	27	84	0	2	142	386
4:45 PM	91	28	2	9	0	2	130	0	51	4	6	0	7	61	7	14	0	1	0	2	22	10	18	30	66	0	1	124	337
Hourly Total	369	148	15	35	0	6	567	1	198	14	33	0	34	246	36	51	0	4	0	9	91	39	69	105	303	0	3	516	1420
5:00 PM	83	42	1	9	0	4	135	1	57	3	7	0	11	68	16	17	0	1	0	3	34	13	15	29	73	0	1	130	367
5:15 PM	98	47	2	9	0	0	156	1	36	6	6	0	6	49	5	15	1	2	0	1	23	15	26	46	79	0	2	166	394
5:30 PM	77	49	3	7	0	3	136	0	50	8	2	0	3	60	2	13	0	1	0	0	16	10	18	57	79	0	2	164	376
5:45 PM	82	33	4	12	0	1	131	1	45	7	2	0	5	55	4	4	0	2	0	0	10	16	11	78	41	0	0	146	342
Hourly Total	340	171	10	37	0	8	558	3	188	24	17	0	25	232	27	49	1	6	0	4	83	54	70	210	272	0	5	606	1479
6:00 PM	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
Grand Total	709	319	25	72	0	14	1125	4	386	38	50	0	59	478	63	100	1	10	0	13	174	93	139	315	575	0	8	1122	2899
Approach %	63.0	28.4	2.2	6.4	0.0	-	-	0.8	80.8	7.9	10.5	0.0	-	-	36.2	57.5	0.6	5.7	0.0	-	-	8.3	12.4	28.1	51.2	0.0	-	-	-
Total %	24.5	11.0	0.9	2.5	0.0	-	38.8	0.1	13.3	1.3	1.7	0.0	-	16.5	2.2	3.4	0.0	0.3	0.0	-	6.0	3.2	4.8	10.9	19.8	0.0	-	38.7	-
Lights	696	316	24	69	0	-	1105	4	383	38	50	0	-	475	63	100	1	10	0	-	174	87	136	310	566	0	-	1099	2853
% Lights	98.2	99.1	96.0	95.8	-	-	98.2	100.0	99.2	100.0	100.0	-	-	99.4	100.0	100.0	100.0	100.0	-	-	100.0	93.5	97.8	98.4	98.4	-	-	98.0	98.4
Buses	12	3	1	1	0	-	17	0	1	0	0	0	-	1	0	0	0	0	0	-	0	6	3	5	8	0	-	22	40
% Buses	1.7	0.9	4.0	1.4	-	-	1.5	0.0	0.3	0.0	0.0	-	-	0.2	0.0	0.0	0.0	0.0	-	-	0.0	6.5	2.2	1.6	1.4	-	-	2.0	1.4
Trucks	1	0	0	2	0	-	3	0	2	0	0	0	-	2	0	0	0	0	0	-	0	0	0	0	1	0	-	1	6
% Trucks	0.1	0.0	0.0	2.8	-	-	0.3	0.0	0.5	0.0	0.0	-	-	0.4	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.2	-	-	0.1	0.2
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	-	5	-	-	-	-	-	-	1	-	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	0.0	-	-	-	-	-	-	8.5	-	-	-	-	-	-	7.7	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	-	14	-	-	-	-	-	-	54	-	-	-	-	-	-	12	-	-	-	-	-	-	8	-	-
% Pedestrians	-	-	-	-	-	100.0	-	-	-	-	-	-	91.5	-	-	-	-	-	-	92.3	-	-	-	-	-	-	100.0	-	-

www.TSTData.com
184 Baker Rd

Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Kingston, NY
Schwenk Dr & Fair St
Thursday, May 9, 2019
Location: 41.936411, -74.019825

Count Name: Schwenk Dr & Fair St & Kingston Plaza
Site Code:
Start Date: 05/09/2019

Turning Movement Peak Hour Data (4:30 PM)

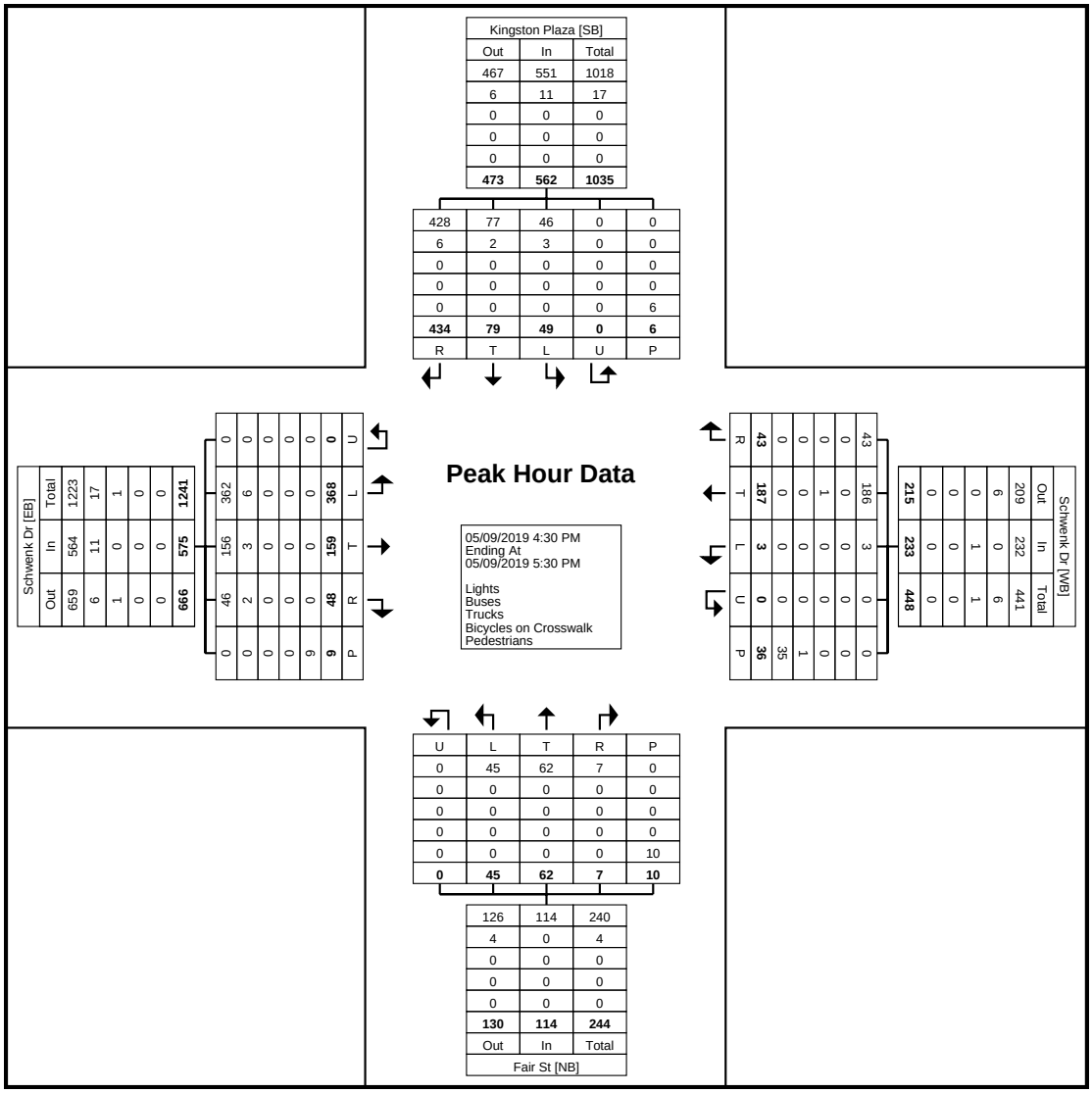
Start Time	Schwenk Dr Eastbound							Schwenk Dr Westbound							Fair St Northbound							Kingston Plaza Southbound							Int. Total
	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	
4:30 PM	96	42	7	9	0	3	154	1	43	2	9	0	12	55	17	16	0	2	0	4	35	11	20	27	84	0	2	142	386
4:45 PM	91	28	2	9	0	2	130	0	51	4	6	0	7	61	7	14	0	1	0	2	22	10	18	30	66	0	1	124	337
5:00 PM	83	42	1	9	0	4	135	1	57	3	7	0	11	68	16	17	0	1	0	3	34	13	15	29	73	0	1	130	367
5:15 PM	98	47	2	9	0	0	156	1	36	6	6	0	6	49	5	15	1	2	0	1	23	15	26	46	79	0	2	166	394
Total	368	159	12	36	0	9	575	3	187	15	28	0	36	233	45	62	1	6	0	10	114	49	79	132	302	0	6	562	1484
Approach %	64.0	27.7	2.1	6.3	0.0	-	-	1.3	80.3	6.4	12.0	0.0	-	-	39.5	54.4	0.9	5.3	0.0	-	-	8.7	14.1	23.5	53.7	0.0	-	-	-
Total %	24.8	10.7	0.8	2.4	0.0	-	38.7	0.2	12.6	1.0	1.9	0.0	-	15.7	3.0	4.2	0.1	0.4	0.0	-	7.7	3.3	5.3	8.9	20.4	0.0	-	37.9	-
PHF	0.939	0.846	0.429	1.000	0.000	-	0.921	0.750	0.820	0.625	0.778	0.000	-	0.857	0.662	0.912	0.250	0.750	0.000	-	0.814	0.817	0.760	0.717	0.899	0.000	-	0.846	0.942
Lights	362	156	11	35	0	-	564	3	186	15	28	0	-	232	45	62	1	6	0	-	114	46	77	129	299	0	-	551	1461
% Lights	98.4	98.1	91.7	97.2	-	-	98.1	100.0	99.5	100.0	100.0	-	-	99.6	100.0	100.0	100.0	100.0	-	-	100.0	93.9	97.5	97.7	99.0	-	-	98.0	98.5
Buses	6	3	1	1	0	-	11	0	0	0	0	0	-	0	0	0	0	0	0	-	0	3	2	3	3	0	-	11	22
% Buses	1.6	1.9	8.3	2.8	-	-	1.9	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	-	0.0	6.1	2.5	2.3	1.0	-	-	2.0	1.5
Trucks	0	0	0	0	0	-	0	0	1	0	0	0	-	1	0	0	0	0	0	-	0	0	0	0	0	0	-	0	1
% Trucks	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.5	0.0	0.0	-	-	0.4	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	-	1	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	0.0	-	-	-	-	-	-	2.8	-	-	-	-	-	-	0.0	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	-	9	-	-	-	-	-	-	35	-	-	-	-	-	-	10	-	-	-	-	-	-	6	-	-
% Pedestrians	-	-	-	-	-	100.0	-	-	-	-	-	-	97.2	-	-	-	-	-	-	100.0	-	-	-	-	-	-	100.0	-	-

www.TSTData.com
184 Baker Rd

Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Kingston, NY
Schwenk Dr & Fair St
Thursday, May 9, 2019
Location: 41.936411, -74.019825

Count Name: Schwenk Dr & Fair St & Kingston Plaza
Site Code:
Start Date: 05/09/2019



Turning Movement Peak Hour Data Plot (4:30 PM)

www.TSTData.com
184 Baker Rd

Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Kingston, NY
Scwhenk Dr & Clinton Ave
Thursday, May 9, 2019
Location: 41.934891, -74.018129

Count Name: Scwhenk Dr & Clinton Ave
Site Code:
Start Date: 05/09/2019

Turning Movement Data

Start Time	N Front St Eastbound		Clinton Ave Northbound					Schwenk Dr Southbound					
	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:00 PM	0	0	47	55	0	0	102	53	0	0	0	53	155
4:15 PM	0	0	47	76	0	0	123	44	0	0	0	44	167
4:30 PM	0	0	46	55	0	0	101	54	0	0	0	54	155
4:45 PM	0	0	49	62	0	0	111	38	0	0	0	38	149
Hourly Total	0	0	189	248	0	0	437	189	0	0	0	189	626
5:00 PM	0	0	47	67	0	0	114	58	0	0	0	58	172
5:15 PM	0	0	56	47	0	0	103	64	0	0	0	64	167
5:30 PM	0	0	53	60	0	0	113	60	0	0	0	60	173
5:45 PM	0	0	56	55	0	0	111	50	0	0	0	50	161
Hourly Total	0	0	212	229	0	0	441	232	0	0	0	232	673
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	401	477	0	0	878	421	0	0	0	421	1299
Approach %	-	-	45.7	54.3	0.0	-	-	100.0	0.0	0.0	-	-	-
Total %	-	0.0	30.9	36.7	0.0	-	67.6	32.4	0.0	0.0	-	32.4	-
Lights	-	0	398	474	0	-	872	411	0	0	-	411	1283
% Lights	-	-	99.3	99.4	-	-	99.3	97.6	-	-	-	97.6	98.8
Buses	-	0	0	1	0	-	1	10	0	0	-	10	11
% Buses	-	-	0.0	0.2	-	-	0.1	2.4	-	-	-	2.4	0.8
Trucks	-	0	3	2	0	-	5	0	0	0	-	0	5
% Trucks	-	-	0.7	0.4	-	-	0.6	0.0	-	-	-	0.0	0.4
Bicycles on Crosswalk	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

www.TSTData.com
184 Baker Rd

Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Kingston, NY
Scwhenk Dr & Clinton Ave
Thursday, May 9, 2019
Location: 41.934891, -74.018129

Count Name: Scwhenk Dr & Clinton Ave
Site Code:
Start Date: 05/09/2019

Turning Movement Peak Hour Data (5:00 PM)

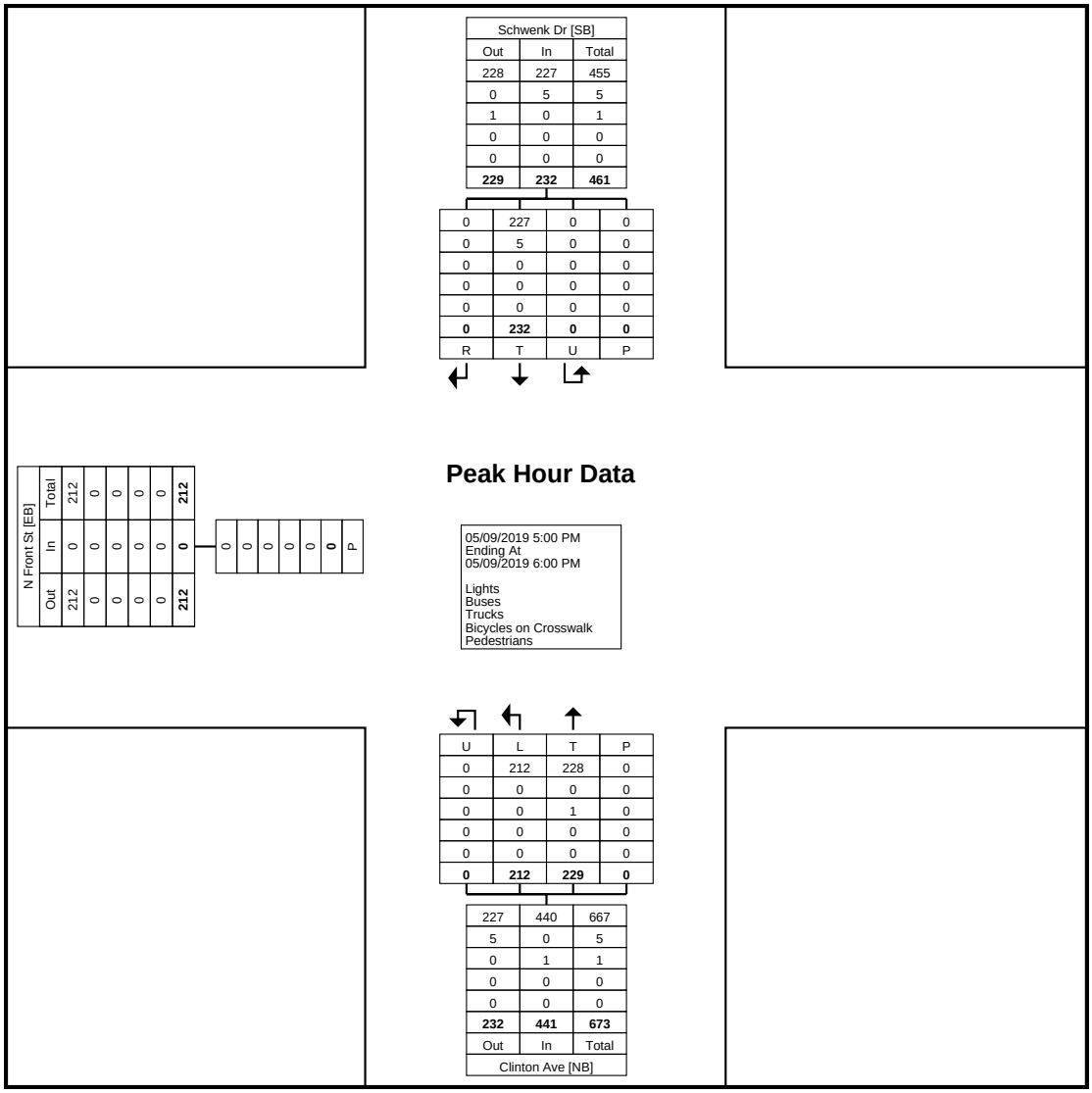
Start Time	N Front St Eastbound		Clinton Ave Northbound					Schwenk Dr Southbound					
	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
5:00 PM	0	0	47	67	0	0	114	58	0	0	0	58	172
5:15 PM	0	0	56	47	0	0	103	64	0	0	0	64	167
5:30 PM	0	0	53	60	0	0	113	60	0	0	0	60	173
5:45 PM	0	0	56	55	0	0	111	50	0	0	0	50	161
Total	0	0	212	229	0	0	441	232	0	0	0	232	673
Approach %	-	-	48.1	51.9	0.0	-	-	100.0	0.0	0.0	-	-	-
Total %	-	0.0	31.5	34.0	0.0	-	65.5	34.5	0.0	0.0	-	34.5	-
PHF	-	0.000	0.946	0.854	0.000	-	0.967	0.906	0.000	0.000	-	0.906	0.973
Lights	-	0	212	228	0	-	440	227	0	0	-	227	667
% Lights	-	-	100.0	99.6	-	-	99.8	97.8	-	-	-	97.8	99.1
Buses	-	0	0	0	0	-	0	5	0	0	-	5	5
% Buses	-	-	0.0	0.0	-	-	0.0	2.2	-	-	-	2.2	0.7
Trucks	-	0	0	1	0	-	1	0	0	0	-	0	1
% Trucks	-	-	0.0	0.4	-	-	0.2	0.0	-	-	-	0.0	0.1
Bicycles on Crosswalk	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

www.TSTData.com
184 Baker Rd

Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Kingston, NY
Schwenk Dr & Clinton Ave
Thursday, May 9, 2019
Location: 41.934891, -74.018129

Count Name: Scwhenk Dr & Clinton Ave
Site Code:
Start Date: 05/09/2019



Turning Movement Peak Hour Data Plot (5:00 PM)

TRI-STATE TRAFFIC DATA
www.TSTData.com
184 Baker Rd

Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Kingston, NY
Scwhenk Dr & Washington Ave
Thursday, May 9, 2019
Location: 41.936416, -74.02551

Count Name: Scwhenk Dr & Washington Ave
Site Code:
Start Date: 05/09/2019

Turning Movement Data

Start Time	Hurley Ave Eastbound							Schwenk Dr Westbound							Washington Ave Northbound							Washington Ave Southbound							Int. Total
	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	
4:00 PM	54	38	0	0	0	0	92	25	48	64	10	1	1	148	20	138	6	0	0	2	164	80	145	35	11	0	0	271	675
4:15 PM	54	41	1	0	0	0	96	24	42	80	22	0	0	168	25	118	8	0	0	0	151	73	134	28	17	0	0	252	667
4:30 PM	58	35	0	0	0	0	93	33	48	77	28	1	0	187	15	125	11	0	0	0	151	68	130	44	17	0	0	259	690
4:45 PM	59	46	1	0	0	0	106	28	37	72	21	0	0	158	17	148	8	0	0	1	173	65	130	35	16	0	2	246	683
Hourly Total	225	160	2	0	0	0	387	110	175	293	81	2	1	661	77	529	33	0	0	3	639	286	539	142	61	0	2	1028	2715
5:00 PM	52	32	0	0	0	0	84	30	40	96	51	1	0	218	16	135	5	0	0	0	156	75	132	27	17	0	0	251	709
5:15 PM	53	36	1	0	0	0	90	28	48	68	31	2	0	177	23	144	9	3	0	0	179	73	126	40	20	0	0	259	705
5:30 PM	52	44	0	0	0	0	96	24	51	62	24	0	1	161	22	134	14	1	0	0	171	66	135	28	26	0	2	255	683
5:45 PM	36	38	0	0	0	0	74	24	55	60	21	0	0	160	19	135	7	0	0	0	161	74	120	21	16	0	1	231	626
Hourly Total	193	150	1	0	0	0	344	106	194	286	127	3	1	716	80	548	35	4	0	0	667	288	513	116	79	0	3	996	2723
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	2
Grand Total	418	310	3	0	0	0	731	216	369	579	208	5	2	1377	157	1079	68	4	0	3	1308	574	1052	258	140	0	5	2024	5440
Approach %	57.2	42.4	0.4	0.0	0.0	-	-	15.7	26.8	42.0	15.1	0.4	-	-	12.0	82.5	5.2	0.3	0.0	-	-	28.4	52.0	12.7	6.9	0.0	-	-	-
Total %	7.7	5.7	0.1	0.0	0.0	-	13.4	4.0	6.8	10.6	3.8	0.1	-	25.3	2.9	19.8	1.3	0.1	0.0	-	24.0	10.6	19.3	4.7	2.6	0.0	-	37.2	-
Lights	415	306	3	0	0	-	724	213	365	572	204	5	-	1359	153	1067	66	4	0	-	1290	562	1032	254	139	0	-	1987	5360
% Lights	99.3	98.7	100.0	-	-	-	99.0	98.6	98.9	98.8	98.1	100.0	-	98.7	97.5	98.9	97.1	100.0	-	-	98.6	97.9	98.1	98.4	99.3	-	-	98.2	98.5
Buses	0	3	0	0	0	-	3	3	4	2	3	0	-	12	3	2	2	0	0	-	7	9	10	3	0	0	-	22	44
% Buses	0.0	1.0	0.0	-	-	-	0.4	1.4	1.1	0.3	1.4	0.0	-	0.9	1.9	0.2	2.9	0.0	-	-	0.5	1.6	1.0	1.2	0.0	-	-	1.1	0.8
Trucks	3	1	0	0	0	-	4	0	0	5	1	0	-	6	1	10	0	0	0	-	11	3	10	1	1	0	-	15	36
% Trucks	0.7	0.3	0.0	-	-	-	0.5	0.0	0.0	0.9	0.5	0.0	-	0.4	0.6	0.9	0.0	0.0	-	-	0.8	0.5	1.0	0.4	0.7	-	-	0.7	0.7
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	-	1	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	50.0	-	-	-	-	-	-	0.0	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	-	1	-	-	-	-	-	-	3	-	-	-	-	-	-	5	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	50.0	-	-	-	-	-	-	100.0	-	-	-	-	-	-	100.0	-	-

www.TSTData.com
184 Baker Rd

Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Kingston, NY
Scwhenk Dr & Washington Ave
Thursday, May 9, 2019
Location: 41.936416, -74.02551

Count Name: Scwhenk Dr & Washington Ave
Site Code:
Start Date: 05/09/2019

Turning Movement Peak Hour Data (4:30 PM)

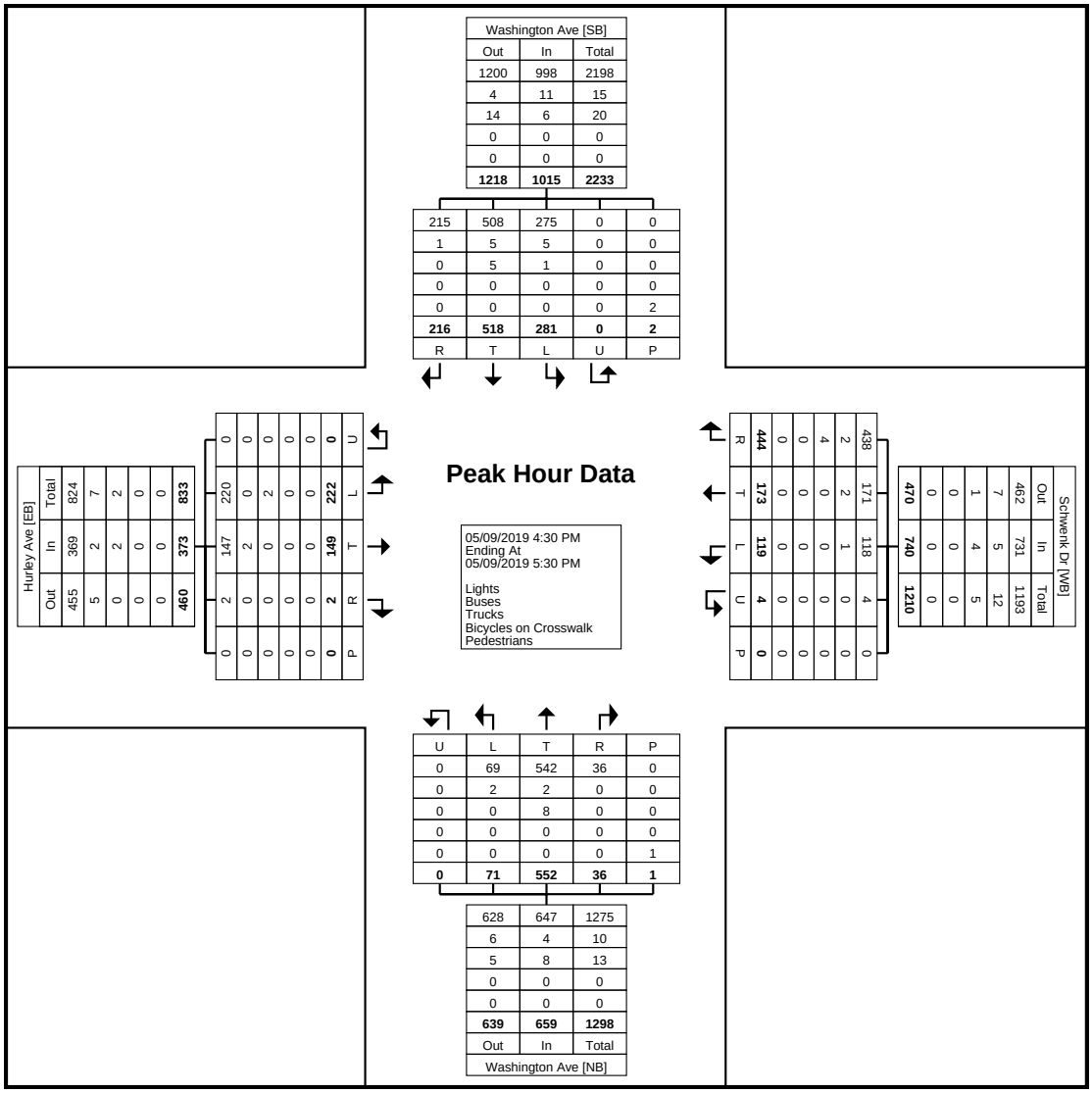
Start Time	Hurley Ave Eastbound							Schwenk Dr Westbound							Washington Ave Northbound							Washington Ave Southbound							
	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Int. Total
4:30 PM	58	35	0	0	0	0	93	33	48	77	28	1	0	187	15	125	11	0	0	0	151	68	130	44	17	0	0	259	690
4:45 PM	59	46	1	0	0	0	106	28	37	72	21	0	0	158	17	148	8	0	0	1	173	65	130	35	16	0	2	246	683
5:00 PM	52	32	0	0	0	0	84	30	40	96	51	1	0	218	16	135	5	0	0	0	156	75	132	27	17	0	0	251	709
5:15 PM	53	36	1	0	0	0	90	28	48	68	31	2	0	177	23	144	9	3	0	0	179	73	126	40	20	0	0	259	705
Total	222	149	2	0	0	0	373	119	173	313	131	4	0	740	71	552	33	3	0	1	659	281	518	146	70	0	2	1015	2787
Approach %	59.5	39.9	0.5	0.0	0.0	-	-	16.1	23.4	42.3	17.7	0.5	-	-	10.8	83.8	5.0	0.5	0.0	-	-	27.7	51.0	14.4	6.9	0.0	-	-	-
Total %	8.0	5.3	0.1	0.0	0.0	-	13.4	4.3	6.2	11.2	4.7	0.1	-	26.6	2.5	19.8	1.2	0.1	0.0	-	23.6	10.1	18.6	5.2	2.5	0.0	-	36.4	-
PHF	0.941	0.810	0.500	0.000	0.000	-	0.880	0.902	0.901	0.815	0.642	0.500	-	0.849	0.772	0.932	0.750	0.250	0.000	-	0.920	0.937	0.981	0.830	0.875	0.000	-	0.980	0.983
Lights	220	147	2	0	0	-	369	118	171	308	130	4	-	731	69	542	33	3	0	-	647	275	508	145	70	0	-	998	2745
% Lights	99.1	98.7	100.0	-	-	-	98.9	99.2	98.8	98.4	99.2	100.0	-	98.8	97.2	98.2	100.0	100.0	-	-	98.2	97.9	98.1	99.3	100.0	-	-	98.3	98.5
Buses	0	2	0	0	0	-	2	1	2	2	0	0	-	5	2	2	0	0	0	-	4	5	5	1	0	0	-	11	22
% Buses	0.0	1.3	0.0	-	-	-	0.5	0.8	1.2	0.6	0.0	0.0	-	0.7	2.8	0.4	0.0	0.0	-	-	0.6	1.8	1.0	0.7	0.0	-	-	1.1	0.8
Trucks	2	0	0	0	0	-	2	0	0	3	1	0	-	4	0	8	0	0	0	-	8	1	5	0	0	0	-	6	20
% Trucks	0.9	0.0	0.0	-	-	-	0.5	0.0	0.0	1.0	0.8	0.0	-	0.5	0.0	1.4	0.0	0.0	-	-	1.2	0.4	1.0	0.0	0.0	-	-	0.6	0.7
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	1	-	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	100.0	-	-

www.TSTData.com
184 Baker Rd

Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Kingston, NY
Scwhenk Dr & Washington Ave
Thursday, May 9, 2019
Location: 41.936416, -74.02551

Count Name: Scwhenk Dr & Washington Ave
Site Code:
Start Date: 05/09/2019



Turning Movement Peak Hour Data Plot (4:30 PM)

www.TSTData.com
184 Baker Rd

Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Kingston, NY
Washington Ave & N.Front St
Thursday, May 9, 2019
Location: 41.935105, -74.024852

Count Name: Washington Ave & N Front St
Site Code:
Start Date: 05/09/2019

Turning Movement Data

Start Time	Grandma Brown Ln Eastbound							N Front St Westbound							Washington Ave Northbound							Washington Ave Southbound							Int. Total
	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	
4:00 PM	35	13	0	1	0	0	49	8	33	38	11	0	1	90	6	88	7	4	0	4	105	21	65	57	44	0	2	187	431
4:15 PM	42	20	0	0	0	0	62	9	34	20	15	0	0	78	5	83	11	13	0	0	112	30	66	42	54	0	0	192	444
4:30 PM	34	30	0	0	0	1	64	6	41	22	14	0	0	83	3	81	12	9	0	2	105	31	70	55	26	0	0	182	434
4:45 PM	47	19	2	1	0	0	69	7	36	21	26	0	0	90	5	83	12	13	0	1	113	39	65	54	13	0	0	171	443
Hourly Total	158	82	2	2	0	1	244	30	144	101	66	0	1	341	19	335	42	39	0	7	435	121	266	208	137	0	2	732	1752
5:00 PM	48	23	2	0	0	3	73	11	30	51	17	0	0	109	2	44	1	8	0	7	55	31	82	35	36	0	1	184	421
5:15 PM	51	27	1	0	0	0	79	9	36	27	9	0	0	81	3	93	10	16	0	2	122	38	61	52	20	0	0	171	453
5:30 PM	63	28	3	0	0	1	94	8	40	31	14	0	0	93	5	67	5	8	0	2	85	25	82	63	16	0	0	186	458
5:45 PM	78	25	2	0	0	1	105	7	33	19	4	0	0	63	2	58	5	4	0	1	69	30	67	23	41	0	1	161	398
Hourly Total	240	103	8	0	0	5	351	35	139	128	44	0	0	346	12	262	21	36	0	12	331	124	292	173	113	0	2	702	1730
6:00 PM	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
Grand Total	398	185	10	2	0	6	595	65	283	229	110	0	1	687	31	597	63	75	0	19	766	245	558	381	250	0	4	1434	3482
Approach %	66.9	31.1	1.7	0.3	0.0	-	-	9.5	41.2	33.3	16.0	0.0	-	-	4.0	77.9	8.2	9.8	0.0	-	-	17.1	38.9	26.6	17.4	0.0	-	-	-
Total %	11.4	5.3	0.3	0.1	0.0	-	17.1	1.9	8.1	6.6	3.2	0.0	-	19.7	0.9	17.1	1.8	2.2	0.0	-	22.0	7.0	16.0	10.9	7.2	0.0	-	41.2	-
Lights	395	183	10	2	0	-	590	63	282	221	108	0	-	674	31	587	62	74	0	-	754	244	537	376	247	0	-	1404	3422
% Lights	99.2	98.9	100.0	100.0	-	-	99.2	96.9	99.6	96.5	98.2	-	-	98.1	100.0	98.3	98.4	98.7	-	-	98.4	99.6	96.2	98.7	98.8	-	-	97.9	98.3
Buses	0	1	0	0	0	-	1	0	0	2	1	0	-	3	0	3	1	1	0	-	5	1	7	5	1	0	-	14	23
% Buses	0.0	0.5	0.0	0.0	-	-	0.2	0.0	0.0	0.9	0.9	-	-	0.4	0.0	0.5	1.6	1.3	-	-	0.7	0.4	1.3	1.3	0.4	-	-	1.0	0.7
Trucks	3	1	0	0	0	-	4	2	1	6	1	0	-	10	0	7	0	0	0	-	7	0	14	0	2	0	-	16	37
% Trucks	0.8	0.5	0.0	0.0	-	-	0.7	3.1	0.4	2.6	0.9	-	-	1.5	0.0	1.2	0.0	0.0	-	-	0.9	0.0	2.5	0.0	0.8	-	-	1.1	1.1
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	16.7	-	-	-	-	-	-	0.0	-	-	-	-	-	-	0.0	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	-	5	-	-	-	-	-	-	1	-	-	-	-	-	-	19	-	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	-	83.3	-	-	-	-	-	-	100.0	-	-	-	-	-	-	100.0	-	-	-	-	-	-	100.0	-	-

TRI-STATE TRAFFIC DATA
www.TSTData.com
184 Baker Rd

Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Kingston, NY
Washington Ave & N.Front St
Thursday, May 9, 2019
Location: 41.935105, -74.024852

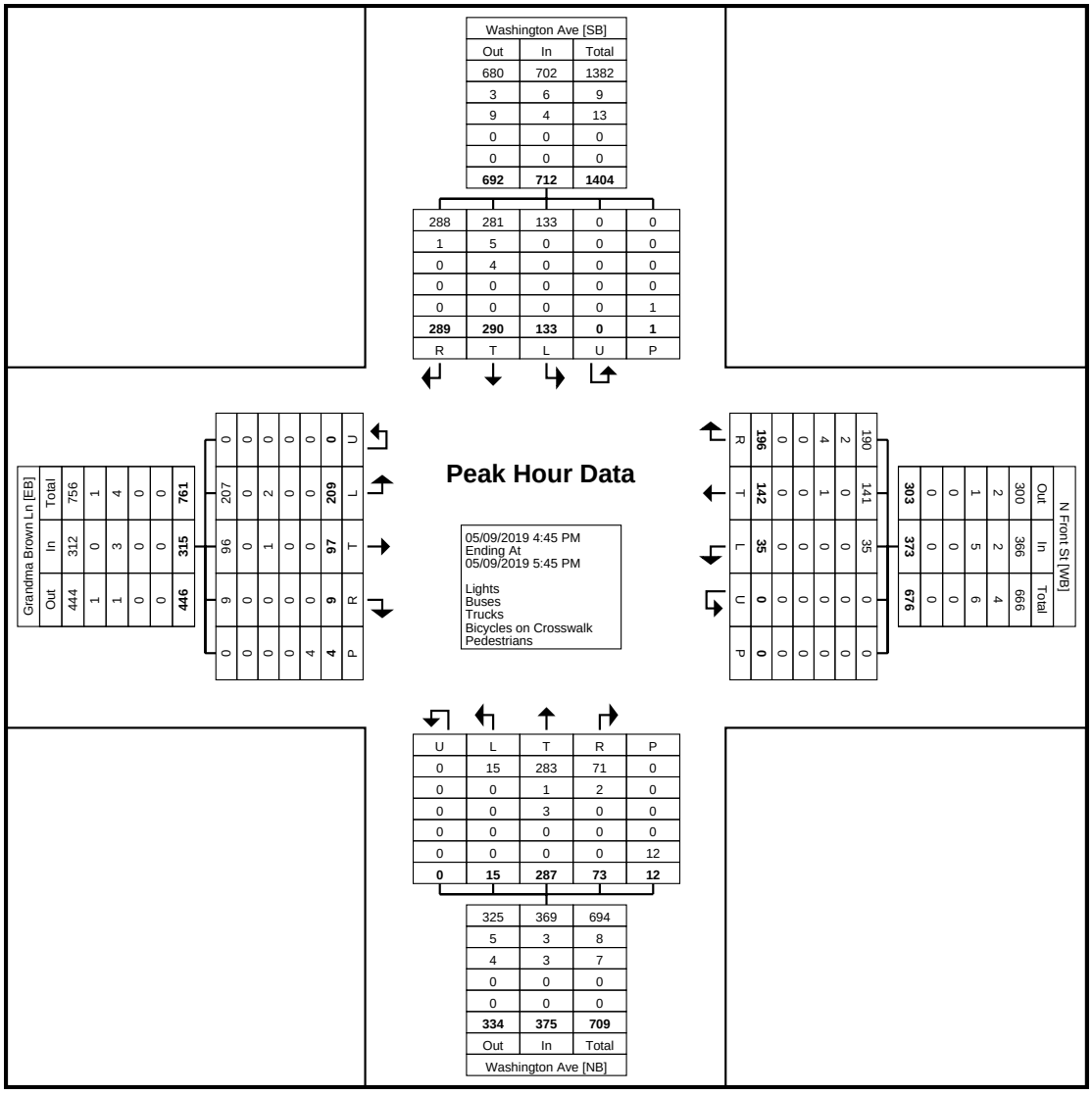
Count Name: Washington Ave & N Front St
Site Code:
Start Date: 05/09/2019

Turning Movement Peak Hour Data (4:45 PM)

Start Time	Grandma Brown Ln Eastbound							N Front St Westbound							Washington Ave Northbound							Washington Ave Southbound							Int. Total
	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	
4:45 PM	47	19	2	1	0	0	69	7	36	21	26	0	0	90	5	83	12	13	0	1	113	39	65	54	13	0	0	171	443
5:00 PM	48	23	2	0	0	3	73	11	30	51	17	0	0	109	2	44	1	8	0	7	55	31	82	35	36	0	1	184	421
5:15 PM	51	27	1	0	0	0	79	9	36	27	9	0	0	81	3	93	10	16	0	2	122	38	61	52	20	0	0	171	453
5:30 PM	63	28	3	0	0	1	94	8	40	31	14	0	0	93	5	67	5	8	0	2	85	25	82	63	16	0	0	186	458
Total	209	97	8	1	0	4	315	35	142	130	66	0	0	373	15	287	28	45	0	12	375	133	290	204	85	0	1	712	1775
Approach %	66.3	30.8	2.5	0.3	0.0	-	-	9.4	38.1	34.9	17.7	0.0	-	-	4.0	76.5	7.5	12.0	0.0	-	-	18.7	40.7	28.7	11.9	0.0	-	-	-
Total %	11.8	5.5	0.5	0.1	0.0	-	17.7	2.0	8.0	7.3	3.7	0.0	-	21.0	0.8	16.2	1.6	2.5	0.0	-	21.1	7.5	16.3	11.5	4.8	0.0	-	40.1	-
PHF	0.829	0.866	0.667	0.250	0.000	-	0.838	0.795	0.888	0.637	0.635	0.000	-	0.856	0.750	0.772	0.583	0.703	0.000	-	0.768	0.853	0.884	0.810	0.590	0.000	-	0.957	0.969
Lights	207	96	8	1	0	-	312	35	141	125	65	0	-	366	15	283	27	44	0	-	369	133	281	203	85	0	-	702	1749
% Lights	99.0	99.0	100.0	100.0	-	-	99.0	100.0	99.3	96.2	98.5	-	-	98.1	100.0	98.6	96.4	97.8	-	-	98.4	100.0	96.9	99.5	100.0	-	-	98.6	98.5
Buses	0	0	0	0	0	-	0	0	0	1	1	0	-	2	0	1	1	1	0	-	3	0	5	1	0	0	-	6	11
% Buses	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.8	1.5	-	-	0.5	0.0	0.3	3.6	2.2	-	-	0.8	0.0	1.7	0.5	0.0	-	-	0.8	0.6
Trucks	2	1	0	0	0	-	3	0	1	4	0	0	-	5	0	3	0	0	0	-	3	0	4	0	0	0	-	4	15
% Trucks	1.0	1.0	0.0	0.0	-	-	1.0	0.0	0.7	3.1	0.0	-	-	1.3	0.0	1.0	0.0	0.0	-	-	0.8	0.0	1.4	0.0	0.0	-	-	0.6	0.8
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	-	4	-	-	-	-	-	-	0	-	-	-	-	-	-	12	-	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	100.0	-	-

Kingston, NY
Washington Ave & N.Front St
Thursday, May 9, 2019
Location: 41.935105, -74.024852

Count Name: Washington Ave & N Front St
Site Code:
Start Date: 05/09/2019



Turning Movement Peak Hour Data Plot (4:45 PM)

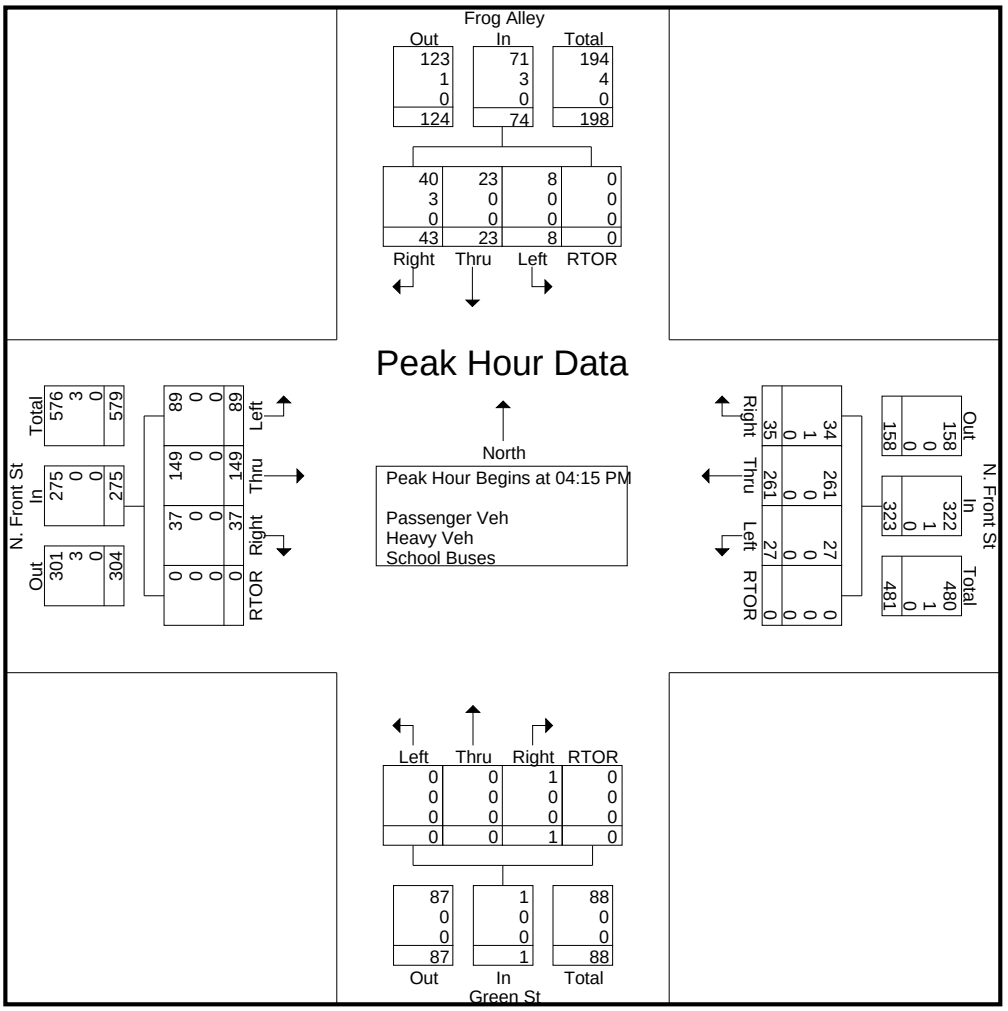
Project No. : 118-025
Counted By: PJA
Location: Frog Alley/N. Front St
Comments: PM Peak

File Name : PM_Frog Alley-Front St_20190619
Site Code : 11802501
Start Date : 6/19/2019
Page No : 1

Groups Printed- Passenger Veh - Heavy Veh - School Buses

	Frog Alley Southbound					N. Front St Westbound					Green St Northbound					N. Front St Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
04:00 PM	3	3	16	0	22	7	63	11	0	81	1	0	0	0	1	19	38	12	0	69	173
04:15 PM	2	5	3	0	10	3	65	4	0	72	0	0	1	0	1	19	47	6	0	72	155
04:30 PM	2	9	22	0	33	7	65	10	0	82	0	0	0	0	0	29	32	10	0	71	186
04:45 PM	1	6	6	0	13	5	61	10	0	76	0	0	0	0	0	22	27	6	0	55	144
Total	8	23	47	0	78	22	254	35	0	311	1	0	1	0	2	89	144	34	0	267	658
05:00 PM	3	3	12	0	18	12	70	11	0	93	0	0	0	0	0	19	43	15	0	77	188
05:15 PM	2	6	3	0	11	6	55	5	0	66	0	0	0	0	0	11	44	10	0	65	142
05:30 PM	2	3	9	0	14	6	58	6	0	70	0	0	0	0	0	17	34	10	0	61	145
05:45 PM	6	6	8	0	20	13	51	4	0	68	0	0	0	0	0	13	39	18	0	70	158
Total	13	18	32	0	63	37	234	26	0	297	0	0	0	0	0	60	160	53	0	273	633
Grand Total	21	41	79	0	141	59	488	61	0	608	1	0	1	0	2	149	304	87	0	540	1291
Apprch %	14.9	29.1	56	0		9.7	80.3	10	0		50	0	50	0		27.6	56.3	16.1	0		
Total %	1.6	3.2	6.1	0	10.9	4.6	37.8	4.7	0	47.1	0.1	0	0.1	0	0.2	11.5	23.5	6.7	0	41.8	
Passenger Veh	21	41	72	0	134	59	487	60	0	606	1	0	1	0	2	148	303	87	0	538	1280
% Passenger Veh	100	100	91.1	0	95	100	99.8	98.4	0	99.7	100	0	100	0	100	99.3	99.7	100	0	99.6	99.1
Heavy Veh	0	0	7	0	7	0	1	1	0	2	0	0	0	0	0	1	1	0	0	2	11
% Heavy Veh	0	0	8.9	0	5	0	0.2	1.6	0	0.3	0	0	0	0	0	0.7	0.3	0	0	0.4	0.9
School Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% School Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Frog Alley Southbound					N. Front St Westbound					Green St Northbound					N. Front St Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour Analysis From 4:00:00 PM to 5:45:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 4:15:00 PM																					
4:15:00 PM	2	5	3	0	10	3	65	4	0	72	0	0	**1**	0	**1**	19	**47**	6	0	72	155
4:30:00 PM	2	**9**	**22**	0	**33**	7	65	10	0	82	0	0	0	0	0	**29**	32	10	0	71	186
4:45:00 PM	1	6	6	0	13	5	61	10	0	76	0	0	0	0	0	22	27	6	0	55	144
5:00:00 PM	**3**	3	12	0	18	**12**	**70**	**11**	0	**93**	0	0	0	0	0	19	43	**15**	0	**77**	**188**
Total Volume	8	23	43	0	74	27	261	35	0	323	0	0	1	0	1	89	149	37	0	275	673
% App. Total	10.8	31.1	58.1	0		8.4	80.8	10.8	0		0	0	100	0		32.4	54.2	13.5	0		
PHF	.667	.639	.489	.000	.561	.563	.932	.795	.000	.868	.000	.000	.250	.000	.250	.767	.793	.617	.000	.893	.895
Passenger Veh	8	23	40	0	71	27	261	34	0	322	0	0	1	0	1	89	149	37	0	275	669
% Passenger Veh	100	100	93.0	0	95.9	100	100	97.1	0	99.7	0	0	100	0	100	100	100	100	0	100	99.4
Heavy Veh	0	0	3	0	3	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	4
% Heavy Veh	0	0	7.0	0	4.1	0	0	2.9	0	0.3	0	0	0	0	0	0	0	0	0	0	0.6
School Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% School Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project No.: 118-025
Counted By: MF
Location: Fair St, Kingston
Comments

File Name : 1118025pDrwy
Site Code : 11802501
Start Date : 7/2/2019
Page No : 1

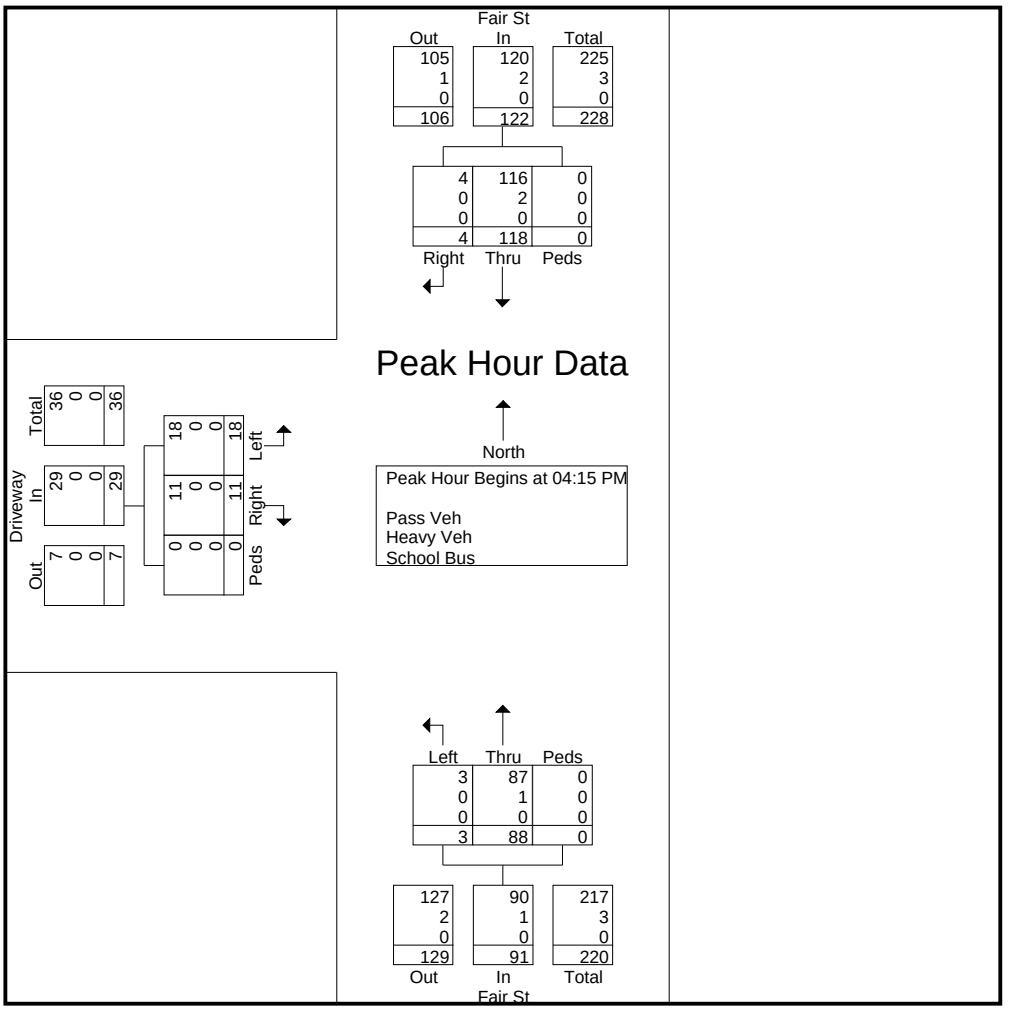
Groups Printed- Pass Veh - Heavy Veh - School Bus

	Fair St Southbound				Fair St Northbound				Driveway Eastbound				
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
04:00 PM	36	0	0	36	0	17	0	17	2	1	0	3	56
04:15 PM	32	1	0	33	1	17	0	18	4	0	0	4	55
04:30 PM	28	1	0	29	0	19	0	19	3	5	0	8	56
04:45 PM	28	1	0	29	0	19	0	19	2	0	0	2	50
Total	124	3	0	127	1	72	0	73	11	6	0	17	217
05:00 PM	30	1	0	31	2	33	0	35	9	6	0	15	81
05:15 PM	27	1	0	28	0	19	0	19	2	1	0	3	50
05:30 PM	29	0	0	29	2	14	0	16	0	1	0	1	46
05:45 PM	22	1	0	23	0	13	0	13	0	2	0	2	38
Total	108	3	0	111	4	79	0	83	11	10	0	21	215
Grand Total	232	6	0	238	5	151	0	156	22	16	0	38	432
Apprch %	97.5	2.5	0		3.2	96.8	0		57.9	42.1	0		
Total %	53.7	1.4	0	55.1	1.2	35	0	36.1	5.1	3.7	0	8.8	
Pass Veh	230	6	0	236	5	149	0	154	22	16	0	38	428
% Pass Veh	99.1	100	0	99.2	100	98.7	0	98.7	100	100	0	100	99.1
Heavy Veh	2	0	0	2	0	2	0	2	0	0	0	0	4
% Heavy Veh	0.9	0	0	0.8	0	1.3	0	1.3	0	0	0	0	0.9
School Bus	0	0	0	0	0	0	0	0	0	0	0	0	0
% School Bus	0	0	0	0	0	0	0	0	0	0	0	0	0

Project No.: 118-025
Counted By: MF
Location: Fair St, Kingston
Comments

File Name : 1118025pDrwy
Site Code : 11802501
Start Date : 7/2/2019
Page No : 2

	Fair St Southbound				Fair St Northbound				Driveway Eastbound				
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 4:00:00 PM to 5:45:00 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 4:15:00 PM													
4:15:00 PM	**32**	**1**	0	**33**	1	17	0	18	4	0	0	4	55
4:30:00 PM	28	1	0	29	0	19	0	19	3	5	0	8	56
4:45:00 PM	28	1	0	29	0	19	0	19	2	0	0	2	50
5:00:00 PM	30	1	0	31	**2**	**33**	0	**35**	**9**	**6**	0	**15**	**81**
Total Volume	118	4	0	122	3	88	0	91	18	11	0	29	242
% App. Total	96.7	3.3	0		3.3	96.7	0		62.1	37.9	0		
PHF	.922	1.00	.000	.924	.375	.667	.000	.650	.500	.458	.000	.483	.747
Pass Veh	116	4	0	120	3	87	0	90	18	11	0	29	239
% Pass Veh	98.3	100	0	98.4	100	98.9	0	98.9	100	100	0	100	98.8
Heavy Veh	2	0	0	2	0	1	0	1	0	0	0	0	3
% Heavy Veh	1.7	0	0	1.6	0	1.1	0	1.1	0	0	0	0	1.2
School Bus	0	0	0	0	0	0	0	0	0	0	0	0	0
% School Bus	0	0	0	0	0	0	0	0	0	0	0	0	0



Appendix C

Level of Service Analysis

Traffic Impact Study
The Kingstonian
City of Kingston, New York

LOS Definitions

The following is an excerpt from the 2010 Highway Capacity Manual (HCM).

Level of Service for Signalized Intersections

Level of Service (LOS) can be characterized for the entire intersection, each intersection approach, and each lane group. Control delay alone is used to characterize LOS for the entire intersection or an approach. Control delay *and* volume-to-capacity (v/c) ratio are used to characterize LOS for a lane group. Delay quantifies the increase in travel time due to traffic signal control. It is also a surrogate measure of driver discomfort and fuel consumption. The v/c ratio quantifies the degree to which a phase's capacity is utilized by a lane group. The following paragraphs describe each LOS.

LOS A describes operations with a control delay of 10 s/veh or less and a v/c ratio no greater than 1.0. This level is typically assigned when the v/c ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.

LOS B describes operations with control delay between 10 and 20 s/veh and a v/c ratio no greater than 1.0. This level is typically assigned when the v/c ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.

LOS C describes operations with control delay between 20 and 35 s/veh and a v/c ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual *cycle failures* (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.

LOS D describes operations with control delay between 35 and 55 s/veh and a v/c ratio no greater than 1.0. This level is typically assigned when the v/c ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.

LOS E describes operations with control delay between 55 and 80 s/veh and a v/c ratio no greater than 1.0. This level is typically assigned when the v/c ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.

LOS F describes operations with control delay exceeding 80 s/veh or a v/c ratio greater than 1.0. This level is typically assigned when the v/c ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

A lane group can incur a delay less than 80 s/veh when the v/c ratio exceeds 1.0. This condition typically occurs when the cycle length is short, the signal progression is favorable, or both. As a result, both the delay and v/c ratio are considered when lane group LOS is established. A ratio of 1.0 or more indicates that cycle capacity is fully utilized and represents failure from a capacity perspective (just as delay in excess of 80 s/veh represents failure from a delay perspective).

Level of Service Criteria for Unsignalized Intersections

Level of service (LOS) for Two-Way Stop-Controlled (TWSC) intersections is determined by the computed or measured control delay. For motor vehicles, LOS is determined for each minor-street movement (or shared movement) as well as major-street left turns by using criteria given in Exhibit 19-1. LOS is not defined for the intersection as a whole or for major-street approaches for three primary reasons: (a) major-street through vehicles are assumed to experience zero delay; (b) the disproportionate number of major-street through vehicles at a typical TWSC intersection skews the weighted average of all movements, resulting in a very low overall average delay for all vehicles; and (c) the resulting low delay can mask important LOS deficiencies for minor movements. LOS F is assigned to the movement if the volume-to-capacity (v/c) ratio for the movement exceeds 1.0, regardless of the control delay.

The LOS criteria for TWSC intersections are somewhat different from the criteria used in Chapter 18 for signalized intersections, primarily because user perceptions differ among transportation facility types. The expectation is that a signalized intersection is designed to carry higher traffic volumes and will present greater delay than an unsignalized intersection. Unsignalized intersections are also associated with more uncertainty for users, as delays are less predictable than they are at signals, which can reduce users' delay tolerance.

The LOS criteria for All-Way Stop-Controlled (AWSC) intersections are given in Exhibit 20-2. LOS F is assigned if the v/c ratio of a lane exceeds 1.0, regardless of the control delay. For assessment of LOS at the approach and intersection levels, LOS is based solely on control delay.

Exhibits 19-1/20-2:
Level-of-Service Criteria for Stop Controlled Intersections

Control Delay (s/veh)	LOS by Volume-to-Capacity Ratio	
	v/c ≤ 1.0	v/c ≥ 1.0
10.0	A	F
>10.0 and ≤ 15.0	B	F
>15.0 and ≤ 25.0	C	F
>25.0 and ≤ 35.0	D	F
>35.0 and ≤ 50.0	E	F
>50.0	F	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	222	149	2	119	173	444	71	552	36	281	518	216
Future Volume (veh/h)	222	149	2	119	173	444	71	552	36	281	518	216
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1856	1870	1870	1870	1870	1900
Adj Flow Rate, veh/h	227	152	2	121	177	319	72	563	34	287	529	149
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
Percent Heavy Veh, %	1	1	1	1	1	1	3	2	2	2	2	0
Cap, veh/h	428	927	12	482	390	631	109	743	45	336	645	753
Arrive On Green	0.12	0.26	0.26	0.07	0.21	0.21	0.06	0.22	0.22	0.19	0.34	0.34
Sat Flow, veh/h	1795	3620	48	1795	1885	1593	1767	3405	205	1781	1870	1610
Grp Volume(v), veh/h	227	75	79	121	177	319	72	293	304	287	529	149
Grp Sat Flow(s),veh/h/ln	1795	1791	1876	1795	1885	1593	1767	1777	1833	1781	1870	1610
Q Serve(g_s), s	7.2	2.5	2.5	3.9	6.2	11.5	3.0	11.7	11.8	11.8	19.6	4.1
Cycle Q Clear(g_c), s	7.2	2.5	2.5	3.9	6.2	11.5	3.0	11.7	11.8	11.8	19.6	4.1
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	428	459	481	482	390	631	109	388	400	336	645	753
V/C Ratio(X)	0.53	0.16	0.16	0.25	0.45	0.51	0.66	0.76	0.76	0.85	0.82	0.20
Avail Cap(c_a), veh/h	469	591	619	564	696	890	350	586	605	494	765	856
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.4	21.9	21.9	21.1	26.3	17.3	34.8	27.7	27.8	29.7	22.7	11.8
Incr Delay (d2), s/veh	1.0	0.2	0.2	0.3	0.8	0.6	6.6	3.0	3.0	9.5	6.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	1.0	1.1	1.6	2.8	4.0	1.5	5.1	5.3	5.7	9.1	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.4	22.0	22.0	21.3	27.1	18.0	41.4	30.8	30.8	39.2	28.8	12.0
LnGrp LOS	C	C	C	C	C	B	D	C	C	D	C	B
Approach Vol, veh/h		381			617			669			965	
Approach Delay, s/veh		21.1			21.3			31.9			29.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.3	21.5	10.5	24.4	9.7	31.1	14.3	20.7
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	21.0	25.0	9.0	25.0	15.0	31.0	11.0	28.0
Max Q Clear Time (g_c+I1), s	13.8	13.8	5.9	4.5	5.0	21.6	9.2	13.5
Green Ext Time (p_c), s	0.5	2.8	0.1	0.7	0.1	2.8	0.1	1.9

Intersection Summary	
HCM 6th Ctrl Delay	26.9
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	97	9	35	142	196	15	287	73	133	290	289
Future Volume (veh/h)	209	97	9	35	142	196	15	287	73	133	290	289
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.98		0.97	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1856	1885	1885	1856	1900	1856	1900
Adj Flow Rate, veh/h	215	100	8	36	146	134	15	296	29	137	299	210
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	3	1	1	3	0	3	0
Cap, veh/h	491	738	59	118	358	488	71	420	362	367	751	840
Arrive On Green	0.12	0.43	0.43	0.23	0.23	0.23	0.23	0.23	0.23	0.09	0.41	0.41
Sat Flow, veh/h	1795	1720	138	206	1579	1531	36	1808	1559	1810	1856	1602
Grp Volume(v), veh/h	215	0	108	182	0	134	311	0	29	137	299	210
Grp Sat Flow(s),veh/h/ln	1795	0	1858	1785	0	1531	1845	0	1559	1810	1856	1602
Q Serve(g_s), s	5.1	0.0	2.1	0.0	0.0	3.9	1.1	0.0	0.9	3.2	6.9	4.3
Cycle Q Clear(g_c), s	5.1	0.0	2.1	5.0	0.0	3.9	9.2	0.0	0.9	3.2	6.9	4.3
Prop In Lane	1.00		0.07	0.20		1.00	0.05		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	491	0	797	477	0	488	491	0	362	367	751	840
V/C Ratio(X)	0.44	0.00	0.14	0.38	0.00	0.27	0.63	0.00	0.08	0.37	0.40	0.25
Avail Cap(c_a), veh/h	636	0	797	744	0	726	1117	0	907	505	1079	1123
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.7	0.0	10.4	19.9	0.0	15.4	21.2	0.0	18.1	14.7	12.7	7.9
Incr Delay (d2), s/veh	0.6	0.0	0.1	0.5	0.0	0.3	1.4	0.0	0.1	0.6	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.8	2.1	0.0	1.3	3.9	0.0	0.3	1.2	2.6	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.3	0.0	10.5	20.4	0.0	15.7	22.6	0.0	18.2	15.4	13.0	8.0
LnGrp LOS	B	A	B	C	A	B	C	A	B	B	B	A
Approach Vol, veh/h		323			316			340			646	
Approach Delay, s/veh		13.0			18.4			22.2			11.9	
Approach LOS		B			B			C			B	
Timer - Assigned Phs	1	2		4		6	7	8				
Phs Duration (G+Y+Rc), s	10.4	19.0		30.8		29.4	12.1	18.7				
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	35.0		23.0		35.0	12.0	23.0				
Max Q Clear Time (g_c+I1), s	5.2	11.2		4.1		8.9	7.1	7.0				
Green Ext Time (p_c), s	0.1	2.0		0.5		2.6	0.3	1.3				
Intersection Summary												
HCM 6th Ctrl Delay			15.5									
HCM 6th LOS			B									

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	89	149	37	35	261	27	0	0	0	8	23	43
Future Vol, veh/h	89	149	37	35	261	27	0	0	0	8	23	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	7
Mvmt Flow	99	166	41	39	290	30	0	0	0	9	26	48

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	320	0	0	207	0	0	768	788	305
Stage 1	-	-	-	-	-	-	383	383	-
Stage 2	-	-	-	-	-	-	385	405	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.4	6.5	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.363
Pot Cap-1 Maneuver	1251	-	-	1376	-	-	373	326	723
Stage 1	-	-	-	-	-	-	694	616	-
Stage 2	-	-	-	-	-	-	692	602	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1251	-	-	1376	-	-	327	0	723
Mov Cap-2 Maneuver	-	-	-	-	-	-	327	0	-
Stage 1	-	-	-	-	-	-	632	0	-
Stage 2	-	-	-	-	-	-	668	0	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0.8	11.8
HCM LOS			B

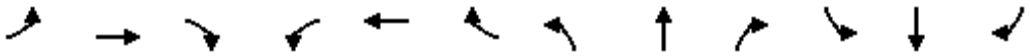
Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1251	-	-	1376	-	-	608
HCM Lane V/C Ratio	0.079	-	-	0.028	-	-	0.135
HCM Control Delay (s)	8.1	0	-	7.7	0	-	11.8
HCM Lane LOS	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-	-	0.5

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	154	0	0	200	208	114
Future Vol, veh/h	154	0	0	200	208	114
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	1	0	0	0	3	2
Mvmt Flow	166	0	0	215	224	123
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	9.7	10.2	11.9
HCM LOS	A	B	B

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	65%	0%	0%
Vol Thru, %	0%	100%	100%
Vol Right, %	35%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	322	154	200
LT Vol	208	0	0
Through Vol	0	154	200
RT Vol	114	0	0
Lane Flow Rate	346	166	215
Geometry Grp	1	1	1
Degree of Util (X)	0.461	0.233	0.297
Departure Headway (Hd)	4.793	5.056	4.977
Convergence, Y/N	Yes	Yes	Yes
Cap	748	704	716
Service Time	2.855	3.132	3.049
HCM Lane V/C Ratio	0.463	0.236	0.3
HCM Control Delay	11.9	9.7	10.2
HCM Lane LOS	B	A	B
HCM 95th-tile Q	2.4	0.9	1.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	94	0	174	35	166	11	0	0	0	0	105	34
Future Volume (vph)	94	0	174	35	166	11	0	0	0	0	105	34
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	103	0	191	38	182	12	0	0	0	0	115	37

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total (vph)	294	38	194	152
Volume Left (vph)	103	38	0	0
Volume Right (vph)	191	0	12	37
Hadj (s)	-0.31	0.50	-0.04	-0.12
Departure Headway (s)	4.4	5.7	5.1	5.0
Degree Utilization, x	0.36	0.06	0.28	0.21
Capacity (veh/h)	793	610	677	666
Control Delay (s)	9.8	7.8	8.8	9.3
Approach Delay (s)	9.8	8.7		9.3
Approach LOS	A	A		A

Intersection Summary			
Delay	9.3		
Level of Service	A		
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	36.4
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	367	173	48	3	187	43	45	62	8	53	79	434
Future Vol, veh/h	367	173	48	3	187	43	45	62	8	53	79	434
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	4	0	0	0	0	0	0	6	2	1
Mvmt Flow	390	184	51	3	199	46	48	66	9	56	84	462
Number of Lanes	1	1	1	0	1	0	0	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	3	3	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	1	3	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	3	1	3
HCM Control Delay	38.4	26.2	18	42.3
HCM LOS	E	D	C	E

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	39%	100%	0%	0%	1%	100%	0%	0%
Vol Thru, %	54%	0%	100%	0%	80%	0%	100%	0%
Vol Right, %	7%	0%	0%	100%	18%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	115	367	173	48	233	53	79	434
LT Vol	45	367	0	0	3	53	0	0
Through Vol	62	0	173	0	187	0	79	0
RT Vol	8	0	0	48	43	0	0	434
Lane Flow Rate	122	390	184	51	248	56	84	462
Geometry Grp	8	7	7	7	8	7	7	7
Degree of Util (X)	0.342	0.908	0.402	0.102	0.628	0.134	0.186	0.929
Departure Headway (Hd)	10.053	8.37	7.856	7.171	9.121	8.57	7.985	7.247
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	357	433	458	499	397	421	452	503
Service Time	7.83	6.124	5.609	4.924	6.89	6.27	5.685	4.947
HCM Lane V/C Ratio	0.342	0.901	0.402	0.102	0.625	0.133	0.186	0.918
HCM Control Delay	18	52.6	15.8	10.7	26.2	12.6	12.5	51.3
HCM Lane LOS	C	F	C	B	D	B	B	F
HCM 95th-tile Q	1.5	9.9	1.9	0.3	4.1	0.5	0.7	11.1

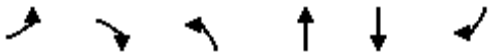
Intersection	
Int Delay, s/veh	4.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	234	0	212	233	0	0
Future Vol, veh/h	234	0	212	233	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	16979
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	0	0	0	0	0
Mvmt Flow	241	0	219	240	0	0

Major/Minor	Minor1		Major1	
Conflicting Flow All	339	339	0	0
Stage 1	339	-	-	-
Stage 2	0	-	-	-
Critical Hdwy	6.42	6.2	-	-
Critical Hdwy Stg 1	5.42	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.518	3.3	-	-
Pot Cap-1 Maneuver	657	708	-	-
Stage 1	722	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	657	708	-	-
Mov Cap-2 Maneuver	657	-	-	-
Stage 1	722	-	-	-
Stage 2	-	-	-	-

Approach	WB	NB
HCM Control Delay, s	13.6	0
HCM LOS	B	

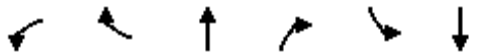
Minor Lane/Major Mvmt	NBT	NBR	WBLn1
Capacity (veh/h)	-	-	657
HCM Lane V/C Ratio	-	-	0.367
HCM Control Delay (s)	-	-	13.6
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	1.7



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	139	0	415	234	0
Future Volume (Veh/h)	30	139	0	415	234	0
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)	33	151	0	451	254	0
Pedestrians	3				1	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	3.5				3.5	
Percent Blockage	0				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	709	257	257			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	709	257	257			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	92	81	100			
cM capacity (veh/h)	402	782	1316			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	184	451	254
Volume Left	33	0	0
Volume Right	151	0	0
cSH	669	1316	1700
Volume to Capacity	0.28	0.00	0.15
Queue Length 95th (ft)	28	0	0
Control Delay (s)	12.4	0.0	0.0
Lane LOS	B		
Approach Delay (s)	12.4	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	216	66	349	217	40	333
Future Volume (vph)	216	66	349	217	40	333
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	230	70	371	231	43	354

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	230	70	602	397
Volume Left (vph)	230	0	0	43
Volume Right (vph)	0	70	231	0
Hadj (s)	0.52	-0.67	-0.20	0.05
Departure Headway (s)	7.7	6.4	5.5	6.0
Degree Utilization, x	0.49	0.13	0.91	0.66
Capacity (veh/h)	456	535	646	576
Control Delay (s)	16.6	9.2	39.9	19.8
Approach Delay (s)	14.8		39.9	19.8
Approach LOS	B		E	C

Intersection Summary			
Delay	28.0		
Level of Service	D		
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection						
Int Delay, s/veh	7.1					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	145	566	510	39
Future Vol, veh/h	0	0	145	566	510	39
Conflicting Peds, #/hr	15	8	29	0	0	29
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	1	1	1	5
Mvmt Flow	0	0	151	590	531	41

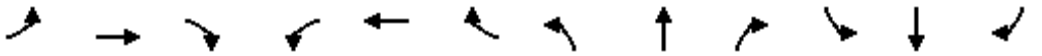
Major/Minor	Major1		Minor2	
Conflicting Flow All	29	0	921	58
Stage 1	-	-	29	-
Stage 2	-	-	892	-
Critical Hdwy	4.11	-	6.51	6.25
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.51	-
Follow-up Hdwy	2.209	-	4.009	3.345
Pot Cap-1 Maneuver	1591	-	~ 272	1000
Stage 1	-	-	-	-
Stage 2	-	-	~ 362	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	1547	-	0	946
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	NB	SB
HCM Control Delay, s	1.5	14.4
HCM LOS		B

Minor Lane/Major Mvmt	NBL	NBT	SBLn1
Capacity (veh/h)	1547	-	946
HCM Lane V/C Ratio	0.098	-	0.605
HCM Control Delay (s)	7.6	0	14.4
HCM Lane LOS	A	A	B
HCM 95th %tile Q(veh)	0.3	-	4.2

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	169	2	134	196	500	80	622	41	316	583	243
Future Volume (veh/h)	250	169	2	134	196	500	80	622	41	316	583	243
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1856	1870	1870	1870	1870	1900
Adj Flow Rate, veh/h	255	172	2	137	200	376	82	635	39	322	595	177
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
Percent Heavy Veh, %	1	1	1	1	1	1	3	2	2	2	2	0
Cap, veh/h	413	973	11	492	421	678	106	772	47	360	690	793
Arrive On Green	0.12	0.27	0.27	0.08	0.22	0.22	0.06	0.23	0.23	0.20	0.37	0.37
Sat Flow, veh/h	1795	3626	42	1795	1885	1593	1767	3401	209	1781	1870	1610
Grp Volume(v), veh/h	255	85	89	137	200	376	82	331	343	322	595	177
Grp Sat Flow(s),veh/h/ln	1795	1791	1877	1795	1885	1593	1767	1777	1833	1781	1870	1610
Q Serve(g_s), s	9.5	3.2	3.3	5.1	8.2	15.8	4.1	15.8	15.8	15.7	26.2	5.6
Cycle Q Clear(g_c), s	9.5	3.2	3.3	5.1	8.2	15.8	4.1	15.8	15.8	15.7	26.2	5.6
Prop In Lane	1.00		0.02	1.00		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	413	481	504	492	421	678	106	403	416	360	690	793
V/C Ratio(X)	0.62	0.18	0.18	0.28	0.48	0.55	0.77	0.82	0.82	0.89	0.86	0.22
Avail Cap(c_a), veh/h	413	502	526	533	592	823	297	498	514	420	690	793
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.1	25.0	25.0	23.6	30.1	19.3	41.3	32.7	32.8	34.6	26.0	12.9
Incr Delay (d2), s/veh	2.8	0.2	0.2	0.3	0.8	0.7	11.1	8.8	8.7	19.1	10.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	1.4	1.4	2.2	3.8	5.7	2.1	7.6	7.9	8.6	13.2	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.9	25.2	25.2	23.9	30.9	20.0	52.4	41.5	41.4	53.8	36.9	13.0
LnGrp LOS	C	C	C	C	C	B	D	D	D	D	D	B
Approach Vol, veh/h		429			713			756			1094	
Approach Delay, s/veh		25.0			23.8			42.7			38.0	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	25.2	12.0	28.9	10.4	37.9	16.0	24.9
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	21.0	25.0	9.0	25.0	15.0	31.0	11.0	28.0
Max Q Clear Time (g_c+I1), s	17.7	17.8	7.1	5.3	6.1	28.2	11.5	17.8
Green Ext Time (p_c), s	0.3	2.4	0.1	0.8	0.1	1.2	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	33.9
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	235	110	10	39	161	221	17	323	82	150	327	325
Future Volume (veh/h)	235	110	10	39	161	221	17	323	82	150	327	325
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.98		0.97	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1856	1885	1885	1856	1900	1856	1900
Adj Flow Rate, veh/h	242	113	9	40	166	160	18	333	39	155	337	247
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	3	1	1	3	0	3	0
Cap, veh/h	471	731	58	114	337	468	70	452	393	352	776	880
Arrive On Green	0.13	0.42	0.42	0.22	0.22	0.22	0.25	0.25	0.25	0.09	0.42	0.42
Sat Flow, veh/h	1795	1721	137	214	1562	1529	41	1794	1560	1810	1856	1602
Grp Volume(v), veh/h	242	0	122	206	0	160	351	0	39	155	337	247
Grp Sat Flow(s),veh/h/ln	1795	0	1858	1776	0	1529	1834	0	1560	1810	1856	1602
Q Serve(g_s), s	6.2	0.0	2.6	1.4	0.0	5.2	2.2	0.0	1.2	3.8	8.2	5.2
Cycle Q Clear(g_c), s	6.2	0.0	2.6	6.3	0.0	5.2	11.1	0.0	1.2	3.8	8.2	5.2
Prop In Lane	1.00		0.07	0.19		1.00	0.05		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	471	0	789	451	0	468	521	0	393	352	776	880
V/C Ratio(X)	0.51	0.00	0.15	0.46	0.00	0.34	0.67	0.00	0.10	0.44	0.43	0.28
Avail Cap(c_a), veh/h	574	0	789	700	0	690	1048	0	857	477	1019	1090
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.0	0.0	11.3	22.0	0.0	17.2	21.9	0.0	18.3	15.4	13.2	7.7
Incr Delay (d2), s/veh	0.9	0.0	0.1	0.7	0.0	0.4	1.5	0.0	0.1	0.9	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	1.0	2.6	0.0	1.7	4.7	0.0	0.4	1.5	3.1	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.8	0.0	11.4	22.7	0.0	17.7	23.5	0.0	18.4	16.2	13.6	7.8
LnGrp LOS	B	A	B	C	A	B	C	A	B	B	B	A
Approach Vol, veh/h		364			366			390			739	
Approach Delay, s/veh		14.3			20.5			22.9			12.2	
Approach LOS		B			C			C			B	

Timer - Assigned Phs	1	2		4		6	7	8				
Phs Duration (G+Y+Rc), s	10.6	21.0		32.1		31.7	13.3	18.8				
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	35.0		23.0		35.0	12.0	23.0				
Max Q Clear Time (g_c+I1), s	5.8	13.1		4.6		10.2	8.2	8.3				
Green Ext Time (p_c), s	0.1	2.3		0.5		3.0	0.3	1.5				

Intersection Summary			
HCM 6th Ctrl Delay		16.5	
HCM 6th LOS		B	

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	100	163	42	39	295	30	0	0	0	9	26	48
Future Vol, veh/h	100	163	42	39	295	30	0	0	0	9	26	48
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	7
Mvmt Flow	111	181	47	43	328	33	0	0	0	10	29	53

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	361	0	0	228	0	0	858	881	345
Stage 1	-	-	-	-	-	-	431	431	-
Stage 2	-	-	-	-	-	-	427	450	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.4	6.5	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.363
Pot Cap-1 Maneuver	1209	-	-	1352	-	-	330	288	687
Stage 1	-	-	-	-	-	-	660	586	-
Stage 2	-	-	-	-	-	-	662	575	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1209	-	-	1352	-	-	283	0	687
Mov Cap-2 Maneuver	-	-	-	-	-	-	283	0	-
Stage 1	-	-	-	-	-	-	590	0	-
Stage 2	-	-	-	-	-	-	636	0	-

Approach	EB	WB	SB
HCM Control Delay, s	2.7	0.8	12.7
HCM LOS			B

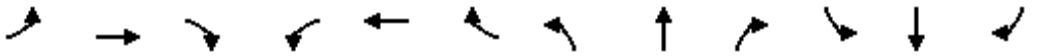
Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1209	-	-	1352	-	-	561
HCM Lane V/C Ratio	0.092	-	-	0.032	-	-	0.164
HCM Control Delay (s)	8.3	0	-	7.8	0	-	12.7
HCM Lane LOS	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-	-	0.6

Intersection	
Intersection Delay, s/veh	12.3
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	174	0	0	226	234	128
Future Vol, veh/h	174	0	0	226	234	128
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	1	0	0	0	3	2
Mvmt Flow	187	0	0	243	252	138
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	10.4	11.1	13.9
HCM LOS	B	B	B

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	65%	0%	0%
Vol Thru, %	0%	100%	100%
Vol Right, %	35%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	362	174	226
LT Vol	234	0	0
Through Vol	0	174	226
RT Vol	128	0	0
Lane Flow Rate	389	187	243
Geometry Grp	1	1	1
Degree of Util (X)	0.544	0.277	0.354
Departure Headway (Hd)	5.033	5.336	5.24
Convergence, Y/N	Yes	Yes	Yes
Cap	720	674	688
Service Time	3.033	3.367	3.268
HCM Lane V/C Ratio	0.54	0.277	0.353
HCM Control Delay	13.9	10.4	11.1
HCM Lane LOS	B	B	B
HCM 95th-tile Q	3.3	1.1	1.6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	106	0	197	39	188	12	0	0	0	0	118	38
Future Volume (vph)	106	0	197	39	188	12	0	0	0	0	118	38
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	116	0	216	43	207	13	0	0	0	0	130	42

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total (vph)	332	43	220	172
Volume Left (vph)	116	43	0	0
Volume Right (vph)	216	0	13	42
Hadj (s)	-0.31	0.50	-0.04	-0.12
Departure Headway (s)	4.5	5.8	5.2	5.1
Degree Utilization, x	0.42	0.07	0.32	0.25
Capacity (veh/h)	763	596	661	631
Control Delay (s)	10.7	8.0	9.5	9.8
Approach Delay (s)	10.7	9.2		9.8
Approach LOS	B	A		A

Intersection Summary				
Delay	10.0			
Level of Service	A			
Intersection Capacity Utilization	53.8%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	60.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	414	196	54	3	212	49	51	70	9	61	89	489
Future Vol, veh/h	414	196	54	3	212	49	51	70	9	61	89	489
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	4	0	0	0	0	0	0	6	2	1
Mvmt Flow	440	209	57	3	226	52	54	74	10	65	95	520
Number of Lanes	1	1	1	0	1	0	0	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	3	3	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	1	3	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	3	1	3
HCM Control Delay	62.8	36	20.9	75.2
HCM LOS	F	E	C	F

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	39%	100%	0%	0%	1%	100%	0%	0%
Vol Thru, %	54%	0%	100%	0%	80%	0%	100%	0%
Vol Right, %	7%	0%	0%	100%	19%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	130	414	196	54	264	61	89	489
LT Vol	51	414	0	0	3	61	0	0
Through Vol	70	0	196	0	212	0	89	0
RT Vol	9	0	0	54	49	0	0	489
Lane Flow Rate	138	440	209	57	281	65	95	520
Geometry Grp	8	7	7	7	8	7	7	7
Degree of Util (X)	0.402	1.055	0.469	0.118	0.738	0.157	0.214	1.086
Departure Headway (Hd)	11.004	8.984	8.466	7.776	9.922	9.033	8.445	7.703
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	329	405	427	464	368	400	428	473
Service Time	8.704	6.684	6.166	5.476	7.622	6.733	6.145	5.403
HCM Lane V/C Ratio	0.419	1.086	0.489	0.123	0.764	0.163	0.222	1.099
HCM Control Delay	20.9	90.5	18.4	11.5	36	13.4	13.4	94.1
HCM Lane LOS	C	F	C	B	E	B	B	F
HCM 95th-tile Q	1.9	14	2.4	0.4	5.7	0.6	0.8	16.5

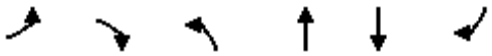
Intersection	
Int Delay, s/veh	5.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	266	0	240	264	0	0
Future Vol, veh/h	266	0	240	264	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	16979
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	0	0	0	0	0
Mvmt Flow	274	0	247	272	0	0

Major/Minor	Minor1		Major1	
Conflicting Flow All	383	383	0	0
Stage 1	383	-	-	-
Stage 2	0	-	-	-
Critical Hdwy	6.42	6.2	-	-
Critical Hdwy Stg 1	5.42	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.518	3.3	-	-
Pot Cap-1 Maneuver	620	669	-	-
Stage 1	689	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	620	669	-	-
Mov Cap-2 Maneuver	620	-	-	-
Stage 1	689	-	-	-
Stage 2	-	-	-	-

Approach	WB	NB
HCM Control Delay, s	15.3	0
HCM LOS	C	

Minor Lane/Major Mvmt	NBT	NBR	WBLn1
Capacity (veh/h)	-	-	620
HCM Lane V/C Ratio	-	-	0.442
HCM Control Delay (s)	-	-	15.3
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	2.3



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	34	158	0	470	266	0
Future Volume (Veh/h)	34	158	0	470	266	0
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)	37	172	0	511	289	0
Pedestrians	3				1	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	3.5				3.5	
Percent Blockage	0				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	804	292	292			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	804	292	292			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	90	77	100			
cM capacity (veh/h)	354	747	1278			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	209	511	289
Volume Left	37	0	0
Volume Right	172	0	0
cSH	624	1278	1700
Volume to Capacity	0.33	0.00	0.17
Queue Length 95th (ft)	37	0	0
Control Delay (s)	13.6	0.0	0.0
Lane LOS	B		
Approach Delay (s)	13.6	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	243	74	396	244	45	378
Future Volume (vph)	243	74	396	244	45	378
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	259	79	421	260	48	402

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	259	79	681	450
Volume Left (vph)	259	0	0	48
Volume Right (vph)	0	79	260	0
Hadj (s)	0.52	-0.67	-0.20	0.05
Departure Headway (s)	7.8	6.6	5.8	6.2
Degree Utilization, x	0.56	0.15	1.09	0.77
Capacity (veh/h)	441	525	628	573
Control Delay (s)	19.2	9.6	85.5	26.9
Approach Delay (s)	17.0		85.5	26.9
Approach LOS	C		F	D

Intersection Summary			
Delay	51.8		
Level of Service	F		
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		

Intersection						
Int Delay, s/veh	8.1					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	164	640	577	44
Future Vol, veh/h	0	0	164	640	577	44
Conflicting Peds, #/hr	15	8	29	0	0	29
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	1	1	1	5
Mvmt Flow	0	0	171	667	601	46

Major/Minor	Major1		Minor2	
Conflicting Flow All	29	0	1038	58
Stage 1	-	-	29	-
Stage 2	-	-	1009	-
Critical Hdwy	4.11	-	6.51	6.25
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.51	-
Follow-up Hdwy	2.209	-	4.009	3.345
Pot Cap-1 Maneuver	1591	-	~ 232	1000
Stage 1	-	-	-	-
Stage 2	-	-	~ 319	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	1547	-	0	946
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	NB	SB
HCM Control Delay, s	1.6	16.6
HCM LOS		C

Minor Lane/Major Mvmt	NBL	NBT	SBLn1
Capacity (veh/h)	1547	-	946
HCM Lane V/C Ratio	0.11	-	0.684
HCM Control Delay (s)	7.6	0	16.6
HCM Lane LOS	A	A	C
HCM 95th %tile Q(veh)	0.4	-	5.6

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	177	2	161	206	527	80	622	41	335	583	243
Future Volume (veh/h)	250	177	2	161	206	527	80	622	41	335	583	243
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1856	1870	1870	1870	1870	1900
Adj Flow Rate, veh/h	255	181	2	164	210	404	82	635	39	342	595	177
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
Percent Heavy Veh, %	1	1	1	1	1	1	3	2	2	2	2	0
Cap, veh/h	400	947	10	505	436	706	106	761	47	376	701	794
Arrive On Green	0.12	0.26	0.26	0.09	0.23	0.23	0.06	0.22	0.22	0.21	0.37	0.37
Sat Flow, veh/h	1795	3629	40	1795	1885	1593	1767	3401	209	1781	1870	1610
Grp Volume(v), veh/h	255	89	94	164	210	404	82	331	343	342	595	177
Grp Sat Flow(s),veh/h/ln	1795	1791	1878	1795	1885	1593	1767	1777	1833	1781	1870	1610
Q Serve(g_s), s	10.0	3.6	3.6	6.3	9.0	17.6	4.3	16.5	16.6	17.4	27.1	5.8
Cycle Q Clear(g_c), s	10.0	3.6	3.6	6.3	9.0	17.6	4.3	16.5	16.6	17.4	27.1	5.8
Prop In Lane	1.00		0.02	1.00		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	400	468	490	505	436	706	106	398	410	376	701	794
V/C Ratio(X)	0.64	0.19	0.19	0.32	0.48	0.57	0.77	0.83	0.83	0.91	0.85	0.22
Avail Cap(c_a), veh/h	400	482	505	519	568	817	285	478	493	403	701	794
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	26.7	26.7	23.6	30.9	19.3	43.0	34.4	34.4	35.8	26.6	13.4
Incr Delay (d2), s/veh	3.3	0.2	0.2	0.4	0.8	0.7	11.2	10.3	10.2	23.4	9.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	1.5	1.6	2.7	4.1	6.4	2.2	8.1	8.4	9.8	13.4	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.9	26.9	26.9	24.0	31.7	20.1	54.2	44.7	44.6	59.2	36.3	13.6
LnGrp LOS	C	C	C	C	C	C	D	D	D	E	D	B
Approach Vol, veh/h		438			778			756			1114	
Approach Delay, s/veh		26.9			24.0			45.7			39.7	
Approach LOS		C			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	24.6	25.8	13.3	29.3	10.6	39.8	16.0	26.5				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	21.0	25.0	9.0	25.0	15.0	31.0	11.0	28.0				
Max Q Clear Time (g_c+I1), s	19.4	18.6	8.3	5.6	6.3	29.1	12.0	19.6				
Green Ext Time (p_c), s	0.2	2.2	0.0	0.9	0.1	0.9	0.0	1.8				
Intersection Summary												
HCM 6th Ctrl Delay			35.4									
HCM 6th LOS			D									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	235	110	10	39	161	221	17	323	97	150	354	325
Future Volume (veh/h)	235	110	10	39	161	221	17	323	97	150	354	325
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.98		0.97	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1856	1885	1885	1856	1900	1856	1900
Adj Flow Rate, veh/h	242	113	9	40	166	160	18	333	54	155	365	247
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	3	1	1	3	0	3	0
Cap, veh/h	470	730	58	114	337	468	70	452	394	352	777	881
Arrive On Green	0.13	0.42	0.42	0.22	0.22	0.22	0.25	0.25	0.25	0.09	0.42	0.42
Sat Flow, veh/h	1795	1721	137	214	1562	1529	40	1792	1560	1810	1856	1602
Grp Volume(v), veh/h	242	0	122	206	0	160	351	0	54	155	365	247
Grp Sat Flow(s),veh/h/ln	1795	0	1858	1776	0	1529	1832	0	1560	1810	1856	1602
Q Serve(g_s), s	6.2	0.0	2.6	1.4	0.0	5.2	2.2	0.0	1.7	3.8	9.1	5.2
Cycle Q Clear(g_c), s	6.2	0.0	2.6	6.3	0.0	5.2	11.1	0.0	1.7	3.8	9.1	5.2
Prop In Lane	1.00		0.07	0.19		1.00	0.05		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	470	0	789	450	0	468	522	0	394	352	777	881
V/C Ratio(X)	0.51	0.00	0.15	0.46	0.00	0.34	0.67	0.00	0.14	0.44	0.47	0.28
Avail Cap(c_a), veh/h	574	0	789	699	0	690	1045	0	856	476	1018	1089
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.0	0.0	11.3	22.0	0.0	17.3	21.9	0.0	18.5	15.4	13.4	7.7
Incr Delay (d2), s/veh	0.9	0.0	0.1	0.7	0.0	0.4	1.5	0.0	0.2	0.9	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	1.0	2.6	0.0	1.7	4.7	0.0	0.6	1.5	3.5	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.9	0.0	11.4	22.8	0.0	17.7	23.4	0.0	18.6	16.2	13.9	7.8
LnGrp LOS	B	A	B	C	A	B	C	A	B	B	B	A
Approach Vol, veh/h		364			366			405			767	
Approach Delay, s/veh		14.4			20.6			22.8			12.4	
Approach LOS		B			C			C			B	

Timer - Assigned Phs	1	2		4		6	7	8				
Phs Duration (G+Y+Rc), s	10.6	21.1		32.1		31.7	13.3	18.8				
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	35.0		23.0		35.0	12.0	23.0				
Max Q Clear Time (g_c+I1), s	5.8	13.1		4.6		11.1	8.2	8.3				
Green Ext Time (p_c), s	0.1	2.4		0.5		3.2	0.3	1.5				

Intersection Summary			
HCM 6th Ctrl Delay		16.6	
HCM 6th LOS		B	

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	161	123	42	39	295	30	0	0	0	9	124	48
Future Vol, veh/h	161	123	42	39	295	30	0	0	0	9	124	48
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	7
Mvmt Flow	179	137	47	43	328	33	0	0	0	10	138	53

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	361	0	0	184	0	0	950	973	345
Stage 1	-	-	-	-	-	-	431	431	-
Stage 2	-	-	-	-	-	-	519	542	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.4	6.5	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.363
Pot Cap-1 Maneuver	1209	-	-	1403	-	-	291	254	687
Stage 1	-	-	-	-	-	-	660	586	-
Stage 2	-	-	-	-	-	-	601	523	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1209	-	-	1403	-	-	233	0	687
Mov Cap-2 Maneuver	-	-	-	-	-	-	233	0	-
Stage 1	-	-	-	-	-	-	550	0	-
Stage 2	-	-	-	-	-	-	578	0	-

Approach	EB	WB	SB
HCM Control Delay, s	4.2	0.8	16.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1209	-	-	1403	-	-	525
HCM Lane V/C Ratio	0.148	-	-	0.031	-	-	0.383
HCM Control Delay (s)	8.5	0	-	7.6	0	-	16.1
HCM Lane LOS	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-	-	1.8

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	114	0	0	188	15	234	5	83	0	0	0
Future Vol, veh/h	15	114	0	0	188	15	234	5	83	0	0	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	1	0	0	0	2	3	2	2	0	0	0
Mvmt Flow	16	123	0	0	202	16	252	5	89	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	9.4	10.1	12
HCM LOS	A	B	B

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	73%	12%	0%
Vol Thru, %	2%	88%	93%
Vol Right, %	26%	0%	7%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	322	129	203
LT Vol	234	15	0
Through Vol	5	114	188
RT Vol	83	0	15
Lane Flow Rate	346	139	218
Geometry Grp	1	1	1
Degree of Util (X)	0.462	0.197	0.297
Departure Headway (Hd)	4.808	5.103	4.904
Convergence, Y/N	Yes	Yes	Yes
Cap	744	698	727
Service Time	2.867	3.175	2.969
HCM Lane V/C Ratio	0.465	0.199	0.3
HCM Control Delay	12	9.4	10.1
HCM Lane LOS	B	A	B
HCM 95th-tile Q	2.5	0.7	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	0	197	39	203	0	0
Future Volume (vph)	0	197	39	203	0	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	216	43	223	0	0

Direction, Lane #	EB 1	WB 1	WB 2
Volume Total (vph)	216	43	223
Volume Left (vph)	0	43	0
Volume Right (vph)	216	0	0
Hadj (s)	-0.58	0.50	0.00
Departure Headway (s)	3.7	5.1	4.6
Degree Utilization, x	0.22	0.06	0.29
Capacity (veh/h)	963	689	769
Control Delay (s)	7.7	7.2	8.3
Approach Delay (s)	7.7	8.1	
Approach LOS	A	A	

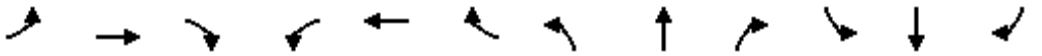
Intersection Summary			
Delay	7.9		
Level of Service	A		
Intersection Capacity Utilization	27.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	77.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	414	200	23	11	217	110	59	0	38	106	1	533
Future Vol, veh/h	414	200	23	11	217	110	59	0	38	106	1	533
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	0	0	2	2	2	6	2	1
Mvmt Flow	440	213	24	12	231	117	63	0	40	113	1	567
Number of Lanes	1	1	1	0	1	0	0	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	3	3	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	1	3	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	3	1	3
HCM Control Delay	66.7	56.8	18.9	108.1
HCM LOS	F	F	C	F

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	61%	100%	0%	0%	3%	100%	0%	0%
Vol Thru, %	0%	0%	100%	0%	64%	0%	100%	0%
Vol Right, %	39%	0%	0%	100%	33%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	97	414	200	23	338	106	1	533
LT Vol	59	414	0	0	11	106	0	0
Through Vol	0	0	200	0	217	0	1	0
RT Vol	38	0	0	23	110	0	0	533
Lane Flow Rate	103	440	213	24	360	113	1	567
Geometry Grp	8	7	7	7	8	7	7	7
Degree of Util (X)	0.302	1.059	0.482	0.051	0.903	0.276	0.002	1.18
Departure Headway (Hd)	11.376	9.194	8.674	7.947	9.652	9.051	8.462	7.718
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	318	396	419	453	378	399	425	476
Service Time	9.076	6.894	6.374	5.647	7.352	6.751	6.162	5.418
HCM Lane V/C Ratio	0.324	1.111	0.508	0.053	0.952	0.283	0.002	1.191
HCM Control Delay	18.9	92.7	19.2	11.1	56.8	15.2	11.2	126.7
HCM Lane LOS	C	F	C	B	F	C	B	F
HCM 95th-tile Q	1.2	14	2.5	0.2	9.2	1.1	0	20.5



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	414	200	23	11	217	110	59	0	38	106	1	533
Future Volume (veh/h)	414	200	23	11	217	110	59	0	38	106	1	533
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.98	0.99		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1900	1900	1900	1870	1870	1870	1811	1870	1885
Adj Flow Rate, veh/h	440	213	24	12	231	117	63	0	40	113	1	567
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
Percent Heavy Veh, %	2	2	2	0	0	0	2	2	2	6	2	1
Cap, veh/h	532	945	796	47	394	194	296	14	158	599	728	605
Arrive On Green	0.12	0.51	0.51	0.34	0.34	0.34	0.39	0.00	0.39	0.39	0.39	0.39
Sat Flow, veh/h	1781	1870	1576	24	1171	575	603	37	406	1324	1870	1555
Grp Volume(v), veh/h	440	213	24	360	0	0	103	0	0	113	1	567
Grp Sat Flow(s),veh/h/ln	1781	1870	1576	1769	0	0	1046	0	0	1324	1870	1555
Q Serve(g_s), s	11.0	6.0	0.7	0.0	0.0	0.0	4.2	0.0	0.0	0.0	0.0	33.3
Cycle Q Clear(g_c), s	11.0	6.0	0.7	15.9	0.0	0.0	5.5	0.0	0.0	4.9	0.0	33.3
Prop In Lane	1.00		1.00	0.03		0.32	0.61		0.39	1.00		1.00
Lane Grp Cap(c), veh/h	532	945	796	635	0	0	469	0	0	599	728	605
V/C Ratio(X)	0.83	0.23	0.03	0.57	0.00	0.00	0.22	0.00	0.00	0.19	0.00	0.94
Avail Cap(c_a), veh/h	532	945	796	635	0	0	469	0	0	599	728	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.5	13.1	11.8	26.2	0.0	0.0	19.2	0.0	0.0	19.2	17.7	27.9
Incr Delay (d2), s/veh	13.7	0.6	0.1	3.6	0.0	0.0	1.1	0.0	0.0	0.7	0.0	23.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	2.6	0.3	7.2	0.0	0.0	1.6	0.0	0.0	1.7	0.0	15.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.2	13.7	11.9	29.8	0.0	0.0	20.3	0.0	0.0	19.9	17.7	51.8
LnGrp LOS	D	B	B	C	A	A	C	A	A	B	B	D
Approach Vol, veh/h		677			360			103			681	
Approach Delay, s/veh		27.6			29.8			20.3			46.4	
Approach LOS		C			C			C			D	
Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		42.0		53.0		42.0	16.0	37.0				
Change Period (Y+Rc), s		5.0		5.0		5.0	5.0	5.0				
Max Green Setting (Gmax), s		37.0		48.0		37.0	11.0	32.0				
Max Q Clear Time (g_c+I1), s		7.5		8.0		35.3	13.0	17.9				
Green Ext Time (p_c), s		0.8		1.4		0.5	0.0	1.9				
Intersection Summary												
HCM 6th Ctrl Delay			34.7									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	7.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	345	0	242	337	0	0
Future Vol, veh/h	345	0	242	337	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	16979
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	0	0	0	0	0
Mvmt Flow	356	0	249	347	0	0

Major/Minor	Minor1		Major1	
Conflicting Flow All	423	423	0	0
Stage 1	423	-	-	-
Stage 2	0	-	-	-
Critical Hdwy	6.42	6.2	-	-
Critical Hdwy Stg 1	5.42	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.518	3.3	-	-
Pot Cap-1 Maneuver	588	635	-	-
Stage 1	661	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	588	635	-	-
Mov Cap-2 Maneuver	588	-	-	-
Stage 1	661	-	-	-
Stage 2	-	-	-	-

Approach	WB	NB
HCM Control Delay, s	20	0
HCM LOS	C	

Minor Lane/Major Mvmt	NBT	NBR	WBLn1
Capacity (veh/h)	-	-	588
HCM Lane V/C Ratio	-	-	0.605
HCM Control Delay (s)	-	-	20
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	4

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	79	158	0	500	345	0
Future Vol, veh/h	79	158	0	500	345	0
Conflicting Peds, #/hr	1	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	1	0	0	3	0
Mvmt Flow	86	172	0	543	375	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	922	378	378	0	-	0
Stage 1	378	-	-	-	-	-
Stage 2	544	-	-	-	-	-
Critical Hdwy	6.4	6.21	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.2	-	-	-
Pot Cap-1 Maneuver	302	671	1192	-	-	-
Stage 1	697	-	-	-	-	-
Stage 2	586	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	300	669	1189	-	-	-
Mov Cap-2 Maneuver	300	-	-	-	-	-
Stage 1	695	-	-	-	-	-
Stage 2	584	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1189	-	474	-	-
HCM Lane V/C Ratio	-	-	0.543	-	-
HCM Control Delay (s)	0	-	21.3	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	3.2	-	-

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	243	74	426	244	45	457
Future Volume (vph)	243	74	426	244	45	457
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	259	79	453	260	48	486

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	259	79	713	534
Volume Left (vph)	259	0	0	48
Volume Right (vph)	0	79	260	0
Hadj (s)	0.52	-0.67	-0.19	0.04
Departure Headway (s)	8.0	6.8	6.0	6.2
Degree Utilization, x	0.58	0.15	1.18	0.92
Capacity (veh/h)	433	513	610	569
Control Delay (s)	20.1	9.8	119.3	44.8
Approach Delay (s)	17.7		119.3	44.8
Approach LOS	C		F	E

Intersection Summary			
Delay	72.5		
Level of Service	F		
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

Intersection

Int Delay, s/veh	10.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	164	670	656	44
Future Vol, veh/h	0	0	164	670	656	44
Conflicting Peds, #/hr	15	8	29	0	0	29
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	1	1	1	5
Mvmt Flow	0	0	171	698	683	46

Major/Minor	Major1		Minor2	
Conflicting Flow All	29	0	1069	58
Stage 1	-	-	29	-
Stage 2	-	-	1040	-
Critical Hdwy	4.11	-	6.51	6.25
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.51	-
Follow-up Hdwy	2.209	-	4.009	3.345
Pot Cap-1 Maneuver	1591	-	~ 222	1000
Stage 1	-	-	-	-
Stage 2	-	-	~ 309	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	1547	-	0	946
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	NB	SB
HCM Control Delay, s	1.5	20.3
HCM LOS		C

Minor Lane/Major Mvmt	NBL	NBT	SBLn1
Capacity (veh/h)	1547	-	946
HCM Lane V/C Ratio	0.11	-	0.771
HCM Control Delay (s)	7.6	0	20.3
HCM Lane LOS	A	A	C
HCM 95th %tile Q(veh)	0.4	-	7.8

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	340	4	4	333	5	5
Future Vol, veh/h	340	4	4	333	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	370	4	4	362	5	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	374	0	742	372
Stage 1	-	-	-	-	372	-
Stage 2	-	-	-	-	370	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1184	-	383	674
Stage 1	-	-	-	-	697	-
Stage 2	-	-	-	-	699	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1184	-	381	674
Mov Cap-2 Maneuver	-	-	-	-	381	-
Stage 1	-	-	-	-	697	-
Stage 2	-	-	-	-	696	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	12.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	487	-	-	1184	-
HCM Lane V/C Ratio	0.022	-	-	0.004	-
HCM Control Delay (s)	12.6	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	177	2	161	206	527	80	622	41	335	583	243
Future Volume (veh/h)	250	177	2	161	206	527	80	622	41	335	583	243
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1856	1870	1870	1870	1870	1900
Adj Flow Rate, veh/h	255	181	2	164	210	404	82	635	39	342	595	177
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
Percent Heavy Veh, %	1	1	1	1	1	1	3	2	2	2	2	0
Cap, veh/h	346	838	9	466	435	710	108	789	48	381	720	755
Arrive On Green	0.08	0.23	0.23	0.08	0.23	0.23	0.06	0.23	0.23	0.21	0.38	0.38
Sat Flow, veh/h	1795	3629	40	1795	1885	1593	1767	3401	209	1781	1870	1610
Grp Volume(v), veh/h	255	89	94	164	210	404	82	331	343	342	595	177
Grp Sat Flow(s),veh/h/ln	1795	1791	1878	1795	1885	1593	1767	1777	1833	1781	1870	1610
Q Serve(g_s), s	7.0	3.4	3.4	5.8	8.1	15.8	3.8	14.7	14.7	15.6	24.0	5.5
Cycle Q Clear(g_c), s	7.0	3.4	3.4	5.8	8.1	15.8	3.8	14.7	14.7	15.6	24.0	5.5
Prop In Lane	1.00		0.02	1.00		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	346	413	433	466	435	710	108	412	425	381	720	755
V/C Ratio(X)	0.74	0.22	0.22	0.35	0.48	0.57	0.76	0.80	0.81	0.90	0.83	0.23
Avail Cap(c_a), veh/h	346	493	517	466	519	780	211	532	548	426	720	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.9	26.0	26.0	21.7	27.8	17.3	38.6	30.3	30.3	31.9	23.2	13.2
Incr Delay (d2), s/veh	8.0	0.3	0.2	0.5	0.8	0.8	10.4	6.8	6.7	19.9	7.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	1.4	1.5	2.4	3.6	5.6	1.9	6.9	7.1	8.6	11.5	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.0	26.3	26.3	22.1	28.6	18.1	49.0	37.1	37.0	51.9	31.1	13.4
LnGrp LOS	C	C	C	C	C	B	D	D	D	D	C	B
Approach Vol, veh/h		438			778			756			1114	
Approach Delay, s/veh		30.7			21.8			38.3			34.6	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.9	24.4	12.0	24.3	10.1	37.2	12.0	24.3
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	20.0	25.0	7.0	23.0	10.0	25.0	7.0	23.0
Max Q Clear Time (g_c+I1), s	17.6	16.7	7.8	5.4	5.8	26.0	9.0	17.8
Green Ext Time (p_c), s	0.3	2.6	0.0	0.8	0.1	0.0	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	31.7
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	414	200	23	11	217	110	59	0	38	106	1	533
Future Volume (veh/h)	414	200	23	11	217	110	59	0	38	106	1	533
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.98	0.99		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1900	1900	1900	1870	1870	1870	1811	1870	1885
Adj Flow Rate, veh/h	440	213	24	12	231	117	63	0	40	113	1	567
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
Percent Heavy Veh, %	2	2	2	0	0	0	2	2	2	6	2	1
Cap, veh/h	591	960	809	49	298	147	290	16	151	585	694	895
Arrive On Green	0.20	0.51	0.51	0.26	0.26	0.26	0.37	0.00	0.37	0.37	0.37	0.37
Sat Flow, veh/h	1781	1870	1576	24	1169	574	600	42	408	1324	1870	1552
Grp Volume(v), veh/h	440	213	24	360	0	0	103	0	0	113	1	567
Grp Sat Flow(s),veh/h/ln	1781	1870	1576	1767	0	0	1050	0	0	1324	1870	1552
Q Serve(g_s), s	14.8	5.4	0.6	3.5	0.0	0.0	3.8	0.0	0.0	0.0	0.0	21.3
Cycle Q Clear(g_c), s	14.8	5.4	0.6	16.4	0.0	0.0	5.1	0.0	0.0	4.4	0.0	21.3
Prop In Lane	1.00		1.00	0.03		0.32	0.61		0.39	1.00		1.00
Lane Grp Cap(c), veh/h	591	960	809	494	0	0	456	0	0	585	694	895
V/C Ratio(X)	0.74	0.22	0.03	0.73	0.00	0.00	0.23	0.00	0.00	0.19	0.00	0.63
Avail Cap(c_a), veh/h	647	1257	1059	716	0	0	456	0	0	585	694	895
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.8	11.5	10.4	30.0	0.0	0.0	18.5	0.0	0.0	18.5	17.1	12.5
Incr Delay (d2), s/veh	4.3	0.1	0.0	2.1	0.0	0.0	1.1	0.0	0.0	0.7	0.0	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	2.1	0.2	7.0	0.0	0.0	1.5	0.0	0.0	1.6	0.0	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.1	11.6	10.4	32.1	0.0	0.0	19.6	0.0	0.0	19.2	17.1	15.9
LnGrp LOS	C	B	B	C	A	A	B	A	A	B	B	B
Approach Vol, veh/h		677			360			103			681	
Approach Delay, s/veh		17.1			32.1			19.6			16.5	
Approach LOS		B			C			B			B	
Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		37.0		49.3		37.0	22.3	27.0				
Change Period (Y+Rc), s		5.0		5.0		5.0	5.0	5.0				
Max Green Setting (Gmax), s		32.0		58.0		32.0	20.0	33.0				
Max Q Clear Time (g_c+I1), s		7.1		7.4		23.3	16.8	18.4				
Green Ext Time (p_c), s		0.7		1.4		1.9	0.5	1.9				
Intersection Summary												
HCM 6th Ctrl Delay			20.0									
HCM 6th LOS			B									

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	79	158	0	500	345	0
Future Volume (vph)	79	158	0	500	345	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			4.5	4.5	
Lane Util. Factor	1.00			1.00	1.00	
Frpb, ped/bikes	1.00			1.00	1.00	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	0.91			1.00	1.00	
Flt Protected	0.98			1.00	1.00	
Satd. Flow (prot)	1689			1900	1845	
Flt Permitted	0.98			1.00	1.00	
Satd. Flow (perm)	1689			1900	1845	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	172	0	543	375	0
RTOR Reduction (vph)	126	0	0	0	0	0
Lane Group Flow (vph)	132	0	0	543	375	0
Confl. Peds. (#/hr)	1		3			3
Confl. Bikes (#/hr)						1
Heavy Vehicles (%)	0%	1%	0%	0%	3%	0%
Turn Type	Prot			NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	12.4			25.9	25.9	
Effective Green, g (s)	12.4			25.9	25.9	
Actuated g/C Ratio	0.26			0.55	0.55	
Clearance Time (s)	4.5			4.5	4.5	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	442			1040	1010	
v/s Ratio Prot	c0.08			c0.29	0.20	
v/s Ratio Perm						
v/c Ratio	0.30			0.52	0.37	
Uniform Delay, d1	14.0			6.8	6.1	
Progression Factor	1.00			0.34	1.00	
Incremental Delay, d2	0.4			0.4	0.2	
Delay (s)	14.3			2.7	6.3	
Level of Service	B			A	A	
Approach Delay (s)	14.3			2.7	6.3	
Approach LOS	B			A	A	

Intersection Summary

HCM 2000 Control Delay	6.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	47.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

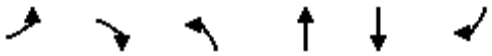
c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	243	74	426	244	45	457
Future Volume (vph)	243	74	426	244	45	457
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5			4.5
Lane Util. Factor	1.00	1.00	1.00			1.00
Frpb, ped/bikes	1.00	0.97	0.99			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	0.95			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1787	1544	1757			1862
Flt Permitted	0.95	1.00	1.00			0.89
Satd. Flow (perm)	1787	1544	1757			1672
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	259	79	453	260	48	486
RTOR Reduction (vph)	0	58	35	0	0	0
Lane Group Flow (vph)	259	21	678	0	0	534
Confl. Peds. (#/hr)	15	4		12	12	
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	1%	2%	0%	4%	7%	1%
Turn Type	Prot	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	12.4	12.4	25.9			25.9
Effective Green, g (s)	12.4	12.4	25.9			25.9
Actuated g/C Ratio	0.26	0.26	0.55			0.55
Clearance Time (s)	4.5	4.5	4.5			4.5
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	468	404	962			915
v/s Ratio Prot	c0.14		c0.39			
v/s Ratio Perm		0.01				0.32
v/c Ratio	0.55	0.05	0.70			0.58
Uniform Delay, d1	15.1	13.1	7.9			7.1
Progression Factor	1.00	1.00	1.00			0.66
Incremental Delay, d2	1.4	0.1	2.4			0.9
Delay (s)	16.5	13.1	10.3			5.6
Level of Service	B	B	B			A
Approach Delay (s)	15.7		10.3			5.6
Approach LOS	B		B			A

Intersection Summary

HCM 2000 Control Delay	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	47.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		

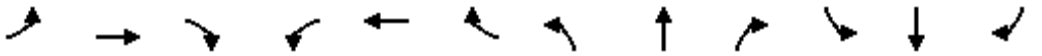
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	164	670	656	44
Future Volume (Veh/h)	0	0	164	670	656	44
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	0	171	698	683	46
Pedestrians	29			8	15	
Lane Width (ft)	0.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	0			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					270	
pX, platoon unblocked	0.82	0.82	0.82			
vC, conflicting volume	1790	743	758			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1852	582	600			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	79			
cM capacity (veh/h)	53	423	810			

Direction, Lane #	NB 1	SB 1
Volume Total	869	729
Volume Left	171	0
Volume Right	0	46
cSH	810	1700
Volume to Capacity	0.21	0.43
Queue Length 95th (ft)	20	0
Control Delay (s)	5.2	0.0
Lane LOS	A	
Approach Delay (s)	5.2	0.0
Approach LOS		

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	97.4%	ICU Level of Service	F
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	177	2	161	235	604	80	684	41	335	583	243
Future Volume (veh/h)	250	177	2	161	235	604	80	684	41	335	583	243
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1856	1870	1870	1870	1870	1900
Adj Flow Rate, veh/h	255	181	2	164	240	482	82	698	39	342	595	177
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
Percent Heavy Veh, %	1	1	1	1	1	1	3	2	2	2	2	0
Cap, veh/h	376	1027	11	519	490	743	106	786	44	367	703	779
Arrive On Green	0.11	0.28	0.28	0.08	0.26	0.26	0.06	0.23	0.23	0.21	0.38	0.38
Sat Flow, veh/h	1795	3629	40	1795	1885	1594	1767	3422	191	1781	1870	1610
Grp Volume(v), veh/h	255	89	94	164	240	482	82	362	375	342	595	177
Grp Sat Flow(s),veh/h/ln	1795	1791	1878	1795	1885	1594	1767	1777	1836	1781	1870	1610
Q Serve(g_s), s	10.7	3.8	3.8	6.7	11.0	23.6	4.7	20.1	20.1	19.2	29.6	6.5
Cycle Q Clear(g_c), s	10.7	3.8	3.8	6.7	11.0	23.6	4.7	20.1	20.1	19.2	29.6	6.5
Prop In Lane	1.00		0.02	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	376	507	531	519	490	743	106	408	422	367	703	779
V/C Ratio(X)	0.68	0.18	0.18	0.32	0.49	0.65	0.78	0.89	0.89	0.93	0.85	0.23
Avail Cap(c_a), veh/h	376	507	531	525	518	768	260	436	451	367	703	779
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	27.6	27.6	24.1	32.0	20.8	47.2	38.0	38.0	39.7	29.1	15.2
Incr Delay (d2), s/veh	4.8	0.2	0.2	0.3	0.8	1.8	11.4	18.7	18.3	30.0	9.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	1.7	1.7	2.9	5.1	8.8	2.4	10.7	11.0	11.3	14.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.4	27.7	27.7	24.4	32.7	22.7	58.7	56.6	56.3	69.7	38.4	15.4
LnGrp LOS	C	C	C	C	C	C	E	E	E	E	D	B
Approach Vol, veh/h		438			886			819			1114	
Approach Delay, s/veh		28.7			25.7			56.7			44.4	
Approach LOS		C			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	28.4	13.6	33.8	11.1	43.3	16.0	31.5
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	21.0	25.0	9.0	25.0	15.0	31.0	11.0	28.0
Max Q Clear Time (g_c+I1), s	21.2	22.1	8.7	5.8	6.7	31.6	12.7	25.6
Green Ext Time (p_c), s	0.0	1.3	0.0	0.9	0.1	0.0	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	40.3
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	235	110	10	39	207	283	17	323	97	150	354	325
Future Volume (veh/h)	235	110	10	39	207	283	17	323	97	150	354	325
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.98		0.97	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1856	1885	1885	1856	1900	1856	1900
Adj Flow Rate, veh/h	242	113	9	40	213	224	18	333	54	155	365	247
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	3	1	1	3	0	3	0
Cap, veh/h	432	730	58	104	349	468	70	452	394	352	777	881
Arrive On Green	0.13	0.42	0.42	0.22	0.22	0.22	0.25	0.25	0.25	0.09	0.42	0.42
Sat Flow, veh/h	1795	1721	137	177	1617	1529	40	1792	1560	1810	1856	1602
Grp Volume(v), veh/h	242	0	122	253	0	224	351	0	54	155	365	247
Grp Sat Flow(s),veh/h/ln	1795	0	1858	1795	0	1529	1832	0	1560	1810	1856	1602
Q Serve(g_s), s	6.2	0.0	2.6	3.1	0.0	7.6	2.2	0.0	1.7	3.8	9.1	5.2
Cycle Q Clear(g_c), s	6.2	0.0	2.6	8.0	0.0	7.6	11.1	0.0	1.7	3.8	9.1	5.2
Prop In Lane	1.00		0.07	0.16		1.00	0.05		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	432	0	789	452	0	468	522	0	394	352	777	881
V/C Ratio(X)	0.56	0.00	0.15	0.56	0.00	0.48	0.67	0.00	0.14	0.44	0.47	0.28
Avail Cap(c_a), veh/h	536	0	789	705	0	690	1045	0	856	476	1018	1089
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.3	0.0	11.3	22.7	0.0	18.1	21.9	0.0	18.5	15.4	13.4	7.7
Incr Delay (d2), s/veh	1.1	0.0	0.1	1.1	0.0	0.8	1.5	0.0	0.2	0.9	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	1.0	3.4	0.0	2.6	4.7	0.0	0.6	1.5	3.5	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.5	0.0	11.4	23.8	0.0	18.9	23.4	0.0	18.6	16.2	13.9	7.8
LnGrp LOS	B	A	B	C	A	B	C	A	B	B	B	A
Approach Vol, veh/h		364			477			405			767	
Approach Delay, s/veh		14.8			21.5			22.8			12.4	
Approach LOS		B			C			C			B	

Timer - Assigned Phs	1	2		4		6	7	8				
Phs Duration (G+Y+Rc), s	10.6	21.1		32.1		31.7	13.3	18.8				
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	35.0		23.0		35.0	12.0	23.0				
Max Q Clear Time (g_c+I1), s	5.8	13.1		4.6		11.1	8.2	10.0				
Green Ext Time (p_c), s	0.1	2.4		0.5		3.2	0.3	1.9				

Intersection Summary			
HCM 6th Ctrl Delay		17.1	
HCM 6th LOS		B	

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	153	131	42	39	403	30	0	0	0	9	83	48
Future Vol, veh/h	153	131	42	39	403	30	0	0	0	9	83	48
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	7
Mvmt Flow	170	146	47	43	448	33	0	0	0	10	92	53

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	481	0	0	193	0	0	1061	1084	465
Stage 1	-	-	-	-	-	-	551	551	-
Stage 2	-	-	-	-	-	-	510	533	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.4	6.5	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.363
Pot Cap-1 Maneuver	1092	-	-	1392	-	-	250	219	587
Stage 1	-	-	-	-	-	-	581	519	-
Stage 2	-	-	-	-	-	-	607	528	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1092	-	-	1392	-	-	198	0	587
Mov Cap-2 Maneuver	-	-	-	-	-	-	198	0	-
Stage 1	-	-	-	-	-	-	479	0	-
Stage 2	-	-	-	-	-	-	582	0	-

Approach	EB	WB	SB
HCM Control Delay, s	4.2	0.6	17.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1092	-	-	1392	-	-	448
HCM Lane V/C Ratio	0.156	-	-	0.031	-	-	0.347
HCM Control Delay (s)	8.9	0	-	7.7	0	-	17.3
HCM Lane LOS	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-	-	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	16	24	98	0	234	19	0	0	0	0	0	0
Future Volume (vph)	16	24	98	0	234	19	0	0	0	0	0	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	17	26	105	0	252	20	0	0	0	0	0	0

Direction, Lane #	EB 1	WB 1
Volume Total (vph)	148	272
Volume Left (vph)	17	0
Volume Right (vph)	105	20
Hadj (s)	-0.40	-0.04
Departure Headway (s)	3.8	4.0
Degree Utilization, x	0.15	0.30
Capacity (veh/h)	938	895
Control Delay (s)	7.4	8.7
Approach Delay (s)	7.4	8.7
Approach LOS	A	A

Intersection Summary			
Delay	8.2		
Level of Service	A		
Intersection Capacity Utilization	27.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	24	0	0	0	253	75
Future Vol, veh/h	24	0	0	0	253	75
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	26	0	0	0	278	82
Number of Lanes	1	0	0	0	1	0

Approach	EB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		EB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	7.8	9.6
HCM LOS	A	A

Lane	NBLn1	EBLn1
Vol Left, %	77%	0%
Vol Thru, %	0%	100%
Vol Right, %	23%	0%
Sign Control	Stop	Stop
Traffic Vol by Lane	328	24
LT Vol	253	0
Through Vol	0	24
RT Vol	75	0
Lane Flow Rate	360	26
Geometry Grp	1	1
Degree of Util (X)	0.397	0.034
Departure Headway (Hd)	3.962	4.68
Convergence, Y/N	Yes	Yes
Cap	908	770
Service Time	1.984	2.68
HCM Lane V/C Ratio	0.396	0.034
HCM Control Delay	9.6	7.8
HCM Lane LOS	A	A
HCM 95th-tile Q	1.9	0.1

Intersection	
Intersection Delay, s/veh	111.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	439	222	23	11	320	102	59	0	38	124	1	515
Future Vol, veh/h	439	222	23	11	320	102	59	0	38	124	1	515
Peak Hour Factor	0.94	0.49	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	0	0	2	2	2	6	2	1
Mvmt Flow	467	453	24	12	340	109	63	0	40	132	1	548
Number of Lanes	1	1	1	0	1	0	0	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	3	3	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	1	3	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	3	1	3
HCM Control Delay	103.8	155	21.4	106.7
HCM LOS	F	F	C	F

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	61%	100%	0%	0%	3%	100%	0%	0%
Vol Thru, %	0%	0%	100%	0%	74%	0%	100%	0%
Vol Right, %	39%	0%	0%	100%	24%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	97	439	222	23	433	124	1	515
LT Vol	59	439	0	0	11	124	0	0
Through Vol	0	0	222	0	320	0	1	0
RT Vol	38	0	0	23	102	0	0	515
Lane Flow Rate	103	467	453	24	461	132	1	548
Geometry Grp	8	7	7	7	8	7	7	7
Degree of Util (X)	0.323	1.144	1.047	0.052	1.227	0.331	0.003	1.179
Departure Headway (Hd)	12.717	9.731	9.207	8.473	10.264	9.549	8.955	8.206
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	285	378	399	425	359	379	402	449
Service Time	10.417	7.431	6.907	6.173	7.964	7.249	6.655	5.906
HCM Lane V/C Ratio	0.361	1.235	1.135	0.056	1.284	0.348	0.002	1.22
HCM Control Delay	21.4	122.7	89.2	11.6	155	16.9	11.7	128.5
HCM Lane LOS	C	F	F	B	F	C	B	F
HCM 95th-tile Q	1.4	16.4	13.6	0.2	18.6	1.4	0	19.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	439	222	23	11	320	102	59	0	38	124	1	515
Future Volume (veh/h)	439	222	23	11	320	102	59	0	38	124	1	515
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	0.99		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1900	1900	1900	1870	1870	1870	1811	1870	1885
Adj Flow Rate, veh/h	467	453	24	12	340	109	63	0	40	132	1	548
Peak Hour Factor	0.94	0.49	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	0	0	0	2	2	2	6	2	1
Cap, veh/h	494	973	819	43	432	136	290	14	156	580	711	590
Arrive On Green	0.15	0.52	0.52	0.32	0.32	0.32	0.38	0.00	0.38	0.38	0.38	0.38
Sat Flow, veh/h	1781	1870	1576	19	1351	424	611	36	411	1324	1870	1553
Grp Volume(v), veh/h	467	453	24	461	0	0	103	0	0	132	1	548
Grp Sat Flow(s),veh/h/ln	1781	1870	1576	1794	0	0	1058	0	0	1324	1870	1553
Q Serve(g_s), s	15.0	15.3	0.7	4.5	0.0	0.0	4.6	0.0	0.0	0.6	0.0	33.8
Cycle Q Clear(g_c), s	15.0	15.3	0.7	23.3	0.0	0.0	5.9	0.0	0.0	6.5	0.0	33.8
Prop In Lane	1.00		1.00	0.03		0.24	0.61		0.39	1.00		1.00
Lane Grp Cap(c), veh/h	494	973	819	611	0	0	460	0	0	580	711	590
V/C Ratio(X)	0.95	0.47	0.03	0.75	0.00	0.00	0.22	0.00	0.00	0.23	0.00	0.93
Avail Cap(c_a), veh/h	494	973	819	611	0	0	460	0	0	580	711	590
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.2	15.2	11.7	31.0	0.0	0.0	20.8	0.0	0.0	21.2	19.2	29.7
Incr Delay (d2), s/veh	29.1	1.6	0.1	8.4	0.0	0.0	1.1	0.0	0.0	0.9	0.0	23.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.1	6.7	0.3	11.3	0.0	0.0	1.8	0.0	0.0	2.2	0.0	15.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.3	16.8	11.8	39.4	0.0	0.0	22.0	0.0	0.0	22.1	19.2	52.7
LnGrp LOS	D	B	B	D	A	A	C	A	A	C	B	D
Approach Vol, veh/h		944			461			103			681	
Approach Delay, s/veh		33.7			39.4			22.0			46.7	
Approach LOS		C			D			C			D	
Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		43.0		57.0		43.0	20.0	37.0				
Change Period (Y+Rc), s		5.0		5.0		5.0	5.0	5.0				
Max Green Setting (Gmax), s		38.0		52.0		38.0	15.0	32.0				
Max Q Clear Time (g_c+I1), s		7.9		17.3		35.8	17.0	25.3				
Green Ext Time (p_c), s		0.8		3.2		0.7	0.0	1.6				
Intersection Summary												
HCM 6th Ctrl Delay			38.4									
HCM 6th LOS			D									

Intersection	
Int Delay, s/veh	9.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	385	0	0	433	0	99
Future Vol, veh/h	385	0	0	433	0	99
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	0	-	-
Veh in Median Storage, #	0	-	16974	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	0	0	0	0	0
Mvmt Flow	397	0	0	446	0	102

Major/Minor	Minor1		Major2	
Conflicting Flow All	102	-	0	0
Stage 1	0	-	-	-
Stage 2	102	-	-	-
Critical Hdwy	6.42	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-
Follow-up Hdwy	3.518	-	2.2	-
Pot Cap-1 Maneuver	896	0	-	-
Stage 1	-	0	-	-
Stage 2	922	0	-	-
Platoon blocked, %				-
Mov Cap-1 Maneuver	896	-	-	-
Mov Cap-2 Maneuver	896	-	-	-
Stage 1	-	-	-	-
Stage 2	922	-	-	-

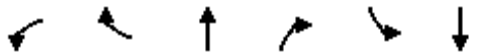
Approach	WB	SB
HCM Control Delay, s	12.2	0
HCM LOS	B	

Minor Lane/Major Mvmt	WBLn1	SBL	SBT
Capacity (veh/h)	896	-	-
HCM Lane V/C Ratio	0.443	-	-
HCM Control Delay (s)	12.2	0	-
HCM Lane LOS	B	A	-
HCM 95th %tile Q(veh)	2.3	-	-

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	238	397	484	0
Future Volume (Veh/h)	0	0	238	397	484	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	259	432	526	0
Pedestrians	3				1	
Lane Width (ft)	0.0				12.0	
Walking Speed (ft/s)	3.5				3.5	
Percent Blockage	0				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1480	529	529			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1480	529	529			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	75			
cM capacity (veh/h)	105	552	1048			

Direction, Lane #	NB 1	SB 1
Volume Total	691	526
Volume Left	259	0
Volume Right	0	0
cSH	1048	1700
Volume to Capacity	0.25	0.31
Queue Length 95th (ft)	24	0
Control Delay (s)	5.6	0.0
Lane LOS	A	
Approach Delay (s)	5.6	0.0
Approach LOS		

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	243	74	596	244	45	439
Future Volume (vph)	243	74	596	244	45	439
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	259	79	634	260	48	467

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	259	79	894	515
Volume Left (vph)	259	0	0	48
Volume Right (vph)	0	79	260	0
Hadj (s)	0.52	-0.67	-0.15	0.05
Departure Headway (s)	8.0	6.8	6.0	6.2
Degree Utilization, x	0.57	0.15	1.48	0.89
Capacity (veh/h)	434	514	608	576
Control Delay (s)	19.9	9.8	242.1	39.4
Approach Delay (s)	17.5		242.1	39.4
Approach LOS	C		F	E

Intersection Summary			
Delay	138.9		
Level of Service	F		
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	17.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	87	158	0	754	682	0
Future Vol, veh/h	87	158	0	754	682	0
Conflicting Peds, #/hr	15	8	29	0	0	29
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	1	1	1	5
Mvmt Flow	91	165	0	785	710	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1510	718	-	0	-	0
Stage 1	710	-	-	-	-	-
Stage 2	800	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-	-
Pot Cap-1 Maneuver	134	432	0	-	-	0
Stage 1	491	-	0	-	-	0
Stage 2	446	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	134	429	-	-	-	-
Mov Cap-2 Maneuver	134	-	-	-	-	-
Stage 1	491	-	-	-	-	-
Stage 2	446	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	118.6	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	241	-
HCM Lane V/C Ratio	-	1.059	-
HCM Control Delay (s)	-	118.6	-
HCM Lane LOS	-	F	-
HCM 95th %tile Q(veh)	-	10.7	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	361	4	4	429	5	5
Future Vol, veh/h	361	4	4	429	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	392	4	4	466	5	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	396	0	868	394
Stage 1	-	-	-	-	394	-
Stage 2	-	-	-	-	474	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1163	-	323	655
Stage 1	-	-	-	-	681	-
Stage 2	-	-	-	-	626	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1163	-	321	655
Mov Cap-2 Maneuver	-	-	-	-	321	-
Stage 1	-	-	-	-	681	-
Stage 2	-	-	-	-	623	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	13.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	431	-	-	1163	-
HCM Lane V/C Ratio	0.025	-	-	0.004	-
HCM Control Delay (s)	13.6	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	177	2	161	235	604	80	684	41	335	583	243
Future Volume (veh/h)	250	177	2	161	235	604	80	684	41	335	583	243
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1856	1870	1870	1870	1870	1900
Adj Flow Rate, veh/h	255	181	2	164	240	482	82	698	39	342	595	177
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
Percent Heavy Veh, %	1	1	1	1	1	1	3	2	2	2	2	0
Cap, veh/h	307	921	10	459	479	749	107	825	46	384	741	745
Arrive On Green	0.07	0.25	0.25	0.07	0.25	0.25	0.06	0.24	0.24	0.22	0.40	0.40
Sat Flow, veh/h	1795	3629	40	1795	1885	1594	1767	3422	191	1781	1870	1610
Grp Volume(v), veh/h	255	89	94	164	240	482	82	362	375	342	595	177
Grp Sat Flow(s),veh/h/ln	1795	1791	1878	1795	1885	1594	1767	1777	1836	1781	1870	1610
Q Serve(g_s), s	6.0	3.5	3.5	6.0	9.8	20.7	4.1	17.5	17.5	16.7	25.3	6.0
Cycle Q Clear(g_c), s	6.0	3.5	3.5	6.0	9.8	20.7	4.1	17.5	17.5	16.7	25.3	6.0
Prop In Lane	1.00		0.02	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	307	455	477	459	479	749	107	428	443	384	741	745
V/C Ratio(X)	0.83	0.20	0.20	0.36	0.50	0.64	0.76	0.85	0.85	0.89	0.80	0.24
Avail Cap(c_a), veh/h	307	458	481	459	483	753	511	494	511	515	741	745
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.1	26.3	26.3	23.0	28.7	18.1	41.6	32.5	32.5	34.2	24.0	14.6
Incr Delay (d2), s/veh	17.3	0.2	0.2	0.5	0.8	1.9	10.6	11.5	11.2	14.0	6.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	1.5	1.6	2.6	4.4	7.5	2.1	8.7	8.9	8.5	11.9	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.4	26.5	26.5	23.4	29.5	20.0	52.2	44.0	43.7	48.2	30.4	14.7
LnGrp LOS	D	C	C	C	C	B	D	D	D	D	C	B
Approach Vol, veh/h		438			886			819			1114	
Approach Delay, s/veh		38.7			23.2			44.7			33.4	
Approach LOS		D			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.4	26.7	11.0	27.8	10.5	40.6	11.0	27.8
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	26.0	25.0	6.0	23.0	26.0	25.0	6.0	23.0
Max Q Clear Time (g_c+I1), s	18.7	19.5	8.0	5.5	6.1	27.3	8.0	22.7
Green Ext Time (p_c), s	0.6	2.2	0.0	0.8	0.2	0.0	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	34.2
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	439	222	23	11	320	102	59	0	38	124	1	515
Future Volume (veh/h)	439	222	23	11	320	102	59	0	38	124	1	515
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.98	0.99		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1900	1900	1900	1870	1870	1870	1811	1870	1885
Adj Flow Rate, veh/h	467	453	24	12	340	109	63	0	40	132	1	548
Peak Hour Factor	0.94	0.49	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	0	0	0	2	2	2	6	2	1
Cap, veh/h	536	1001	844	43	390	122	281	14	150	559	682	880
Arrive On Green	0.20	0.54	0.54	0.29	0.29	0.29	0.36	0.00	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1781	1870	1576	19	1350	424	610	37	411	1324	1870	1552
Grp Volume(v), veh/h	467	453	24	461	0	0	103	0	0	132	1	548
Grp Sat Flow(s),veh/h/ln	1781	1870	1576	1794	0	0	1059	0	0	1324	1870	1552
Q Serve(g_s), s	17.6	14.8	0.7	7.7	0.0	0.0	4.8	0.0	0.0	0.6	0.0	24.0
Cycle Q Clear(g_c), s	17.6	14.8	0.7	24.5	0.0	0.0	6.1	0.0	0.0	6.7	0.0	24.0
Prop In Lane	1.00		1.00	0.03		0.24	0.61		0.39	1.00		1.00
Lane Grp Cap(c), veh/h	536	1001	844	555	0	0	444	0	0	559	682	880
V/C Ratio(X)	0.87	0.45	0.03	0.83	0.00	0.00	0.23	0.00	0.00	0.24	0.00	0.62
Avail Cap(c_a), veh/h	542	1085	914	628	0	0	444	0	0	559	682	880
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.76	0.76	0.76	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.4	14.2	11.0	33.9	0.0	0.0	21.9	0.0	0.0	22.3	20.2	14.9
Incr Delay (d2), s/veh	11.3	0.2	0.0	8.4	0.0	0.0	1.2	0.0	0.0	1.0	0.0	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	6.1	0.2	11.7	0.0	0.0	1.8	0.0	0.0	2.3	0.0	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.7	14.5	11.0	42.3	0.0	0.0	23.1	0.0	0.0	23.3	20.2	18.2
LnGrp LOS	C	B	B	D	A	A	C	A	A	C	C	B
Approach Vol, veh/h		944			461			103			681	
Approach Delay, s/veh		21.9			42.3			23.1			19.2	
Approach LOS		C			D			C			B	
Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		41.5		58.5		41.5	24.7	33.9				
Change Period (Y+Rc), s		5.0		5.0		5.0	5.0	5.0				
Max Green Setting (Gmax), s		32.0		58.0		32.0	20.0	33.0				
Max Q Clear Time (g_c+I1), s		8.1		16.8		26.0	19.6	26.5				
Green Ext Time (p_c), s		0.7		3.3		1.5	0.1	1.6				
Intersection Summary												
HCM 6th Ctrl Delay			25.4									
HCM 6th LOS			C									

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	238	397	484	0
Future Volume (vph)	0	0	238	397	484	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0	
Lane Util. Factor				1.00	1.00	
Frpb, ped/bikes				1.00	1.00	
Flpb, ped/bikes				1.00	1.00	
Frt				1.00	1.00	
Flt Protected				0.98	1.00	
Satd. Flow (prot)				1864	1845	
Flt Permitted				0.59	1.00	
Satd. Flow (perm)				1117	1845	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	259	432	526	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	691	526	0
Confl. Peds. (#/hr)	1		3			3
Confl. Bikes (#/hr)						1
Heavy Vehicles (%)	0%	1%	0%	0%	3%	0%
Turn Type			custom	NA	NA	
Protected Phases			5 8	2 8	6	
Permitted Phases			2			
Actuated Green, G (s)				74.8	65.9	
Effective Green, g (s)				74.8	65.9	
Actuated g/C Ratio				0.80	0.70	
Clearance Time (s)					5.0	
Vehicle Extension (s)					3.0	
Lane Grp Cap (vph)				1034	1300	
v/s Ratio Prot				c0.13	c0.29	
v/s Ratio Perm				c0.41		
v/c Ratio				0.67	0.40	
Uniform Delay, d1				4.0	5.7	
Progression Factor				2.14	1.00	
Incremental Delay, d2				1.2	0.2	
Delay (s)				9.8	5.9	
Level of Service				A	A	
Approach Delay (s)	0.0			9.8	5.9	
Approach LOS	A			A	A	

Intersection Summary

HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	93.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	243	74	596	244	45	439
Future Volume (vph)	243	74	596	244	45	439
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0			5.0
Lane Util. Factor	1.00	1.00	1.00			1.00
Frpb, ped/bikes	1.00	0.98	0.99			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	0.96			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1787	1546	1778			1862
Flt Permitted	0.95	1.00	1.00			0.73
Satd. Flow (perm)	1787	1546	1778			1361
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	259	79	634	260	48	467
RTOR Reduction (vph)	0	61	15	0	0	0
Lane Group Flow (vph)	259	18	879	0	0	515
Confl. Peds. (#/hr)	15	4		12	12	
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	1%	2%	0%	4%	7%	1%
Turn Type	Prot	pm+ov	NA		pm+pt	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	17.6	21.3	57.2			65.9
Effective Green, g (s)	17.6	21.3	57.2			65.9
Actuated g/C Ratio	0.19	0.23	0.61			0.70
Clearance Time (s)	5.0	5.0	5.0			5.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	336	434	1087			979
v/s Ratio Prot	c0.14	0.00	c0.49			c0.02
v/s Ratio Perm		0.01				0.35
v/c Ratio	0.77	0.04	0.81			0.53
Uniform Delay, d1	36.0	28.1	13.9			6.5
Progression Factor	1.00	1.00	0.32			0.23
Incremental Delay, d2	10.4	0.0	3.6			0.5
Delay (s)	46.5	28.2	8.1			2.0
Level of Service	D	C	A			A
Approach Delay (s)	42.2		8.1			2.0
Approach LOS	D		A			A

Intersection Summary

HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	93.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	87	158	0	754	682	0
Future Volume (vph)	87	158	0	754	682	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			5.0	5.0	
Lane Util. Factor	1.00			1.00	1.00	
Frpb, ped/bikes	0.97			1.00	1.00	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	0.91			1.00	1.00	
Flt Protected	0.98			1.00	1.00	
Satd. Flow (prot)	1654			1881	1881	
Flt Permitted	0.98			1.00	1.00	
Satd. Flow (perm)	1654			1881	1881	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	91	165	0	785	710	0
RTOR Reduction (vph)	65	0	0	0	0	0
Lane Group Flow (vph)	191	0	0	785	710	0
Confl. Peds. (#/hr)	15	8	29			29
Confl. Bikes (#/hr)		3				
Heavy Vehicles (%)	0%	0%	1%	1%	1%	5%
Turn Type	Prot			NA	NA	
Protected Phases	4			2	6	
Permitted Phases						
Actuated Green, G (s)	18.1			57.2	65.9	
Effective Green, g (s)	18.1			57.2	65.9	
Actuated g/C Ratio	0.19			0.61	0.70	
Clearance Time (s)	4.5			5.0	5.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	320			1150	1325	
v/s Ratio Prot	c0.12			c0.42	c0.38	
v/s Ratio Perm						
v/c Ratio	0.60			0.68	0.54	
Uniform Delay, d1	34.4			12.1	6.5	
Progression Factor	1.00			1.00	1.30	
Incremental Delay, d2	3.0			1.7	0.3	
Delay (s)	37.3			13.8	8.8	
Level of Service	D			B	A	
Approach Delay (s)	37.3			13.8	8.8	
Approach LOS	D			B	A	

Intersection Summary

HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	93.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group