

Seasons Corner Market

Plainfield Pike (Route 14) at
Sailor Way/I-295 South Ramps
Cranston, Rhode Island

PREPARED FOR

Colbea Enterprises LLC
7 Starline Way
Cranston, RI 02921

PREPARED BY



1 Cedar Street, Suite 400
Providence, RI 02903
401.272.8100

OCTOBER 2022

Table of Contents

1	Introduction.....	1
	Project Description	1
	Study Methodology.....	2
2	Existing Conditions	3
	Study Area.....	3
	Network Geometry	3
	Roadways.....	3
	Intersection.....	4
	Observed Traffic Volumes.....	4
	Seasonality	4
3	Future Conditions.....	8
	Background Traffic Growth.....	8
	Background Traffic Growth.....	9
	Planned Development	9
	2027 No-Build Traffic Volumes.....	9
	Site-Generated Traffic Volumes.....	11
	Trip Generation.....	11
	Trip Distribution and Assignment	12
	2027 Build Traffic Volumes.....	12
4	Traffic Operations	14
	Level of Service Criteria.....	14
	Signalized Intersections Capacity Analysis.....	15
	Unsignalized Intersections Capacity Analysis.....	16
	Plainfield Pike at North Drive	16
	Sailor Way at Northeast Drive	16
	Sailor Way at East Drive	16
	Sailor Way at Southeast Drive	16
5	Conclusions	1

List of Tables

Table No.	Description	Page
Table 1	Vehicular Crashes at Plainfield Pike at I-295 SB/Sailor Way Summary	7
Table 2	Trip Generation Summary	12
Table 3	Signalized Intersection Capacity Analysis Summary.....	15
Table 4	Unsignalized Intersection Capacity Analysis.....	17

List of Figures

Figure No.	Description	Page
Figure 1	2022 Existing Conditions Peak Hour Traffic Volumes	5
Figure 2	2027 No-Build Conditions Peak Hour Traffic Volumes	10
Figure 3	2027 Build Conditions Peak Hour Traffic Volumes.....	13



1

Introduction

VHB has performed a traffic impact and access study to evaluate the traffic impacts associated with the construction of a new Seasons Corner Market convenience store with an internal coffee shop and fueling facility including high speed diesel, to be located on the southwest corner of the Plainfield Pike (Route 14) at Sailor Way/I-295 South Ramps in Cranston, Rhode Island. This report describes the proposed development program and analyzes the project-related traffic impacts on roadways adjacent to the site.

Project Description

The development program consists of removing the existing building and installing a new 5,000± square-foot convenience store with an internal coffee shop, a 5-pump (10 vehicle fueling positions) fueling facility, and two additional fueling position for high-speed diesel. The site is located at 2050 Plainfield Pike (Route 14) in Cranston, Rhode Island. The coffee shop will be located within the convenience store and will not have seating. The site is bounded by Plainfield Pike to the north and Sailor Way to the east.

Based on current site plans, access to the site will be provided by one driveway located on the south side of Plainfield Pike (Route 14) and three driveways on the west side of Sailor Way. The North Drive is proposed to be located in approximately the same location on Plainfield Pike as the existing driveway (approximately 325 feet west of Sailor Way). The median on Plainfield Pike is proposed to be modified to allow westbound left-turns into the site. The analysis at the North Drive has been performed based on full access into the site and restricting left-turns out of the driveway. The Northeast Drive is located in approximately the same location as the existing driveway on the west side of Sailor Way. The East Drive is located in approximately the same location as the existing driveway on Sailor Way; however,

the width of the driveway has been reduced. The Southeast Drive is located slightly further south of the existing driveway and is proposed to be changed from full access to exit only under the proposed site plan to accommodate trucks exiting after using the high-speed diesel pumps.

Study Methodology

This Traffic Impact and Access Study has been prepared in general accordance with the standards of Traffic Engineering and Transportation Planning professions for the preparation of such reports. This traffic assessment was conducted in three phases. The first phase involved an assessment of existing traffic conditions in and around the proposed development area. This included an inventory of existing roadway geometrics and observations of traffic flow including peak period traffic counts.

The second phase utilized information assembled in the first phase and established the framework for evaluating the transportation impacts of future traffic conditions. In this phase, future traffic demands were forecasted for the study area roadways based on historical growth trends and other nearby proposed developments. The year 2027, which reflects a five (5) year horizon, was selected as the design year for analysis of this traffic impact and access study. The traffic analysis conducted in this phase identified existing and expected future roadway operations without the development of the site.

The third and final phase utilized information assembled in the second phase and established the framework for evaluating the transportation impacts of the proposed development project. In this phase the future traffic demands of the year 2027, from the second phase, were used as well as the trip generation for the proposed development of the site. The traffic analysis conducted in this phase identified future roadway operations which include necessary measures to mitigate any traffic-related impacts associated with the proposed site development.



2

Existing Conditions

Existing roadway and traffic conditions in the study area were determined based on field visits and traffic counts. The existing transportation conditions in the study area, including roadway geometrics, traffic controls, and peak hour traffic flows are described in the following sections.

Study Area

To effectively evaluate the transportation impacts associated with the proposed 5,000± square-foot (sf) convenience store with an internal coffee shop, a 5-pump (10 vehicle fueling positions) fueling facility, and an additional two high speed diesel, it was necessary to review the existing roadway system in the vicinity of the site. The area delineated for this study includes Plainfield Pike (Route 14) immediately adjacent to the site.

Network Geometry

Roadways

Plainfield Pike (Route 14)

Plainfield Pike (Route 14) is a two-lane (one lane in each direction) urban principal arterial running in a generally east/west direction within the project area. The roadway widens to two lanes in each direction through the I-295 interchange with turn lanes provided at major intersections. Plainfield Pike (Route 14) is under Rhode Island Department of Transportation

(RIDOT) jurisdiction and provides access between Scituate and Providence. The posted speed limit is 40 miles per hour (mph). Land use along Plainfield Pike is primarily retail/commercial properties within the project limits.

Intersection

Plainfield Pike (Route 14) at Sailor Way/I-295 South Ramps

Sailors Way intersects Plainfield Pike (Route 14) from the south and the I-295 South ramps intersect Plainfield Pike from the north to form a four-way signalized intersection. The eastbound, Plainfield Pike approach consists of one lane that widens to three lanes (a left turn lane, through lane, and a shared through/right-turn lane). The westbound Plainfield Pike approach consists of one left-turn lane, two through lanes and a channelized right-turn lane. The Sailor Way (northbound) approach consists of one wide/undelineated lane that operates as a shared left-turn/through lane and a right turn lane. The I-295 South ramp (southbound) approach consists of one wide travel lane that splits into a signalized shared left-turn/through lane and a channelized right-turn lane that operates under yield condition. There are sidewalks and crosswalks along the north side of Plainfield Pike with no pedestrian signal heads provided to cross the I-295 South ramps.

Observed Traffic Volumes

To assess traffic conditions in the vicinity of the site, turning movement counts (TMCs) were conducted at the Plainfield Pike (Route 14) at Sailor Way/I-295 South ramps intersection on March 1, 2022. Based on these counts, the weekday AM peak hour occurs between 8:00 a.m. and 9:00 a.m. and the weekday PM peak hour occurs between 4:00 p.m. and 5:00 p.m. It should be noted that these peak periods are the peak hours of both the site and the adjacent roadway network. Additional traffic observations were also performed in October 2022.

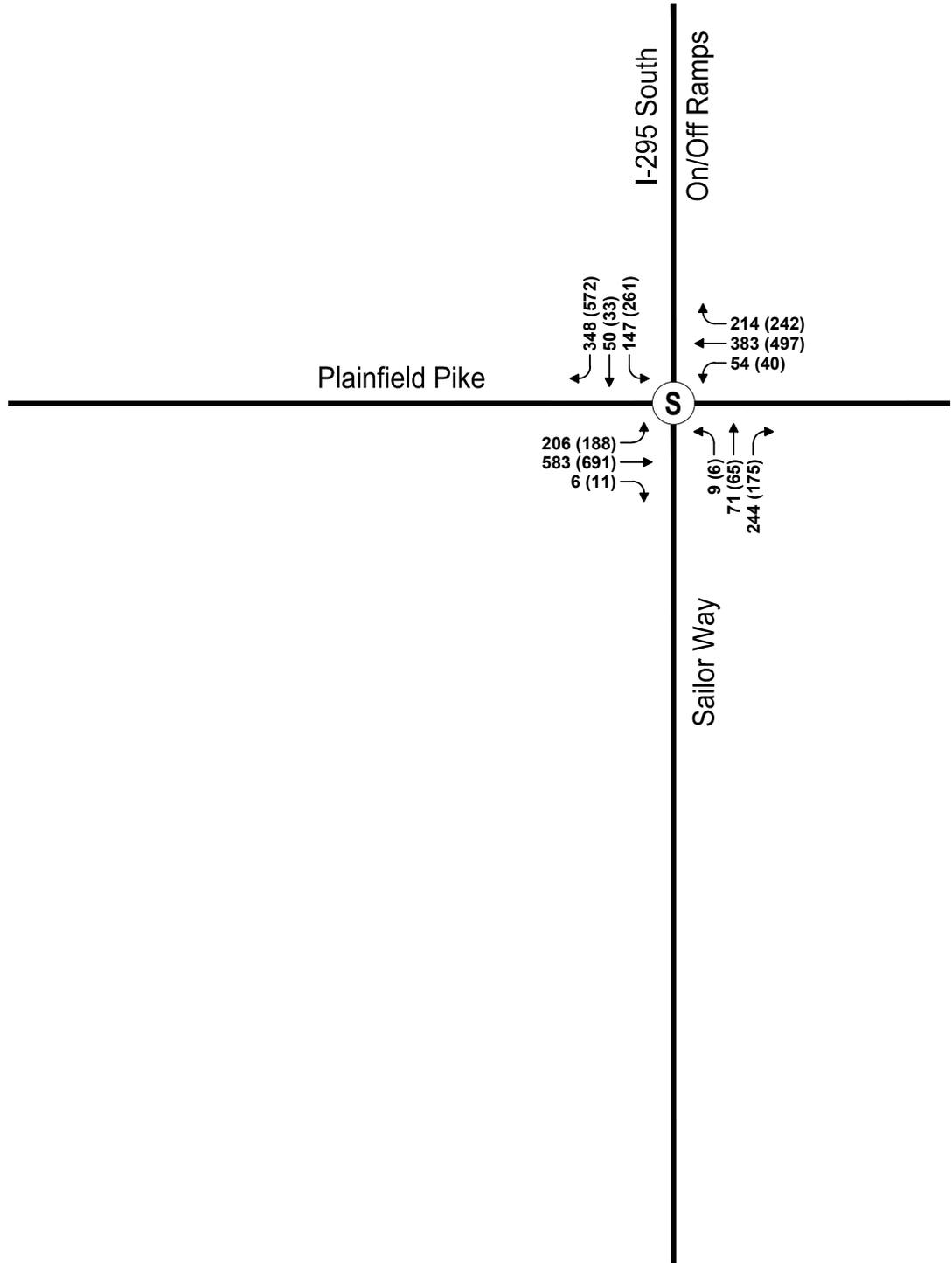
The TMCs are included in **Appendix A**.

Seasonality

To determine the seasonal fluctuation of traffic volumes within the study area, historical traffic data were reviewed from the RIDOT records. According to RIDOT seasonal adjustment factors, traffic volumes on a Tuesday in March are over 5% higher than average conditions. In order to remain conservative (overestimating traffic volumes), the existing traffic volumes were not reduced to represent average peak hour conditions. The existing weekday AM and PM peak hour traffic volume networks are summarized in **Figure 1**.

As shown in **Figure 1**, there are approximately 1,535 vehicles per hour (vph) (795 eastbound and 740 westbound) on Plainfield Pike (Route 14) in the vicinity of the site during the weekday AM peak hour. During the weekday PM peak hour there are 1,965 vph (890 eastbound and 1,075 westbound).

Legend	
XXX (XXX)	AM (PM) Traffic Volumes
NEG	Negligible
(S)	Traffic Signal



Not to Scale



2022 Existing Conditions
Peak Hour Traffic Volumes
Plainfield Pike
Cranston, Rhode Island

Figure 1

Crash Data

To identify crash trends at the study area of Plainfield Pike at Sailor Way/I-295 South ramps, VHB reviewed the latest crash data along the study corridor and study intersections. This data was obtained from the RIDOT crash database for the most recent five-year period, January 2017 to December 2021.

Table 1 below presents a summary of the vehicular crashes at the signalized Plainfield Pike at Sailor Way/I-295 South intersection. There was a total of 25 crashes reported at the intersection during the five-year study period. The most common type of collision was rear end crashes (12 of 25) with sideswipe – same direction (7 of 25) and angle crashes a close second (5 of 25). Crashes during the weekday AM and PM peak hours accounted were approximately 44%. No fatalities were reported during the five-year study period and none of the crashes reported personal injuries.

Table 1 Vehicular Crash Summary

Plainfield Pike at	Sailor Way/ I-295 South Ramps	Total
Year		
2017	4	4
2018	2	2
2019	<u>8</u>	<u>8</u>
2020	<u>2</u>	<u>3</u>
2021	<u>9</u>	<u>9</u>
Total	25	25
Collision Type		
Angle	5	5
Head-on	0	0
Rear-end	12	12
Sideswipe, opposite direction	0	0
Sideswipe, same direction	7	7
Single vehicle crash	1	1
Not Reported	<u>0</u>	<u>0</u>
Total	25	25
Crash Severity		
Fatal injury	0	0
Non-fatal injury	0	0
Property damage only (none injured)	25	25
Not Reported	<u>0</u>	<u>0</u>
Total	25	25
Time of Day		
Weekday, 7:00 AM - 9:00 AM	9	9
Weekday, 4:00 PM - 6:00 PM	2	2
Saturday, 11:00 AM - 2:00 PM	0	0
Weekday, other time	10	10
Weekend, other time	<u>3</u>	<u>3</u>
Total	25	25
Pavement Conditions		
Dry	21	21
Wet	2	2
Snow	2	2
Water (standing, moving)	0	0
Slush	<u>0</u>	<u>0</u>
Total	25	25
Non-Motorist (Bike, Pedestrian)		
Total	0	0

Source: RIDOT Crash Database



3

Future Conditions

Typically, transportation conditions in the study area can be expected to change in the future due to potential development/growth and planned transportation infrastructure improvements in the area. A five-year planning horizon is typically used. The traffic counts were performed in March 2022 and were used as the base conditions (Existing conditions). The traffic volumes were projected to the year 2027 to reflect growth without (“No-Build”) and with (“Build”) the development project and analyzed. The 2027 No-Build projected traffic volumes include growth in traffic volumes associated with generalized regional growth. The anticipated site-generated traffic volumes superimposed upon the 2027 No-Build peak hour traffic volume network reflect the 2027 Build peak hour conditions. The 2027 Build condition also includes the proposed mitigation measures, if any, that will be completed with the proposed site development.

Background Traffic Growth

Traffic growth on area roadways is a function of the expected land development, economic activity, and changes in demographics. Several methods can be used to estimate this growth. A procedure frequently employed is to estimate an annual percentage increase and apply that increase to study area traffic volumes. Another procedure is to identify estimated traffic generated by planned new major developments that would be expected to impact the project study area roadways. Both methods were utilized for this assessment. The study area is already densely populated under existing condition with limited area left to develop further. The following sections describe the procedures used to arrive at the No-Build traffic volume networks.

Background Traffic Growth

Population data from the U.S. Census and the Rhode Island Statewide Planning Program were reviewed for the City of Warwick. The U.S. Census reports that the population of Cranston is growing at an annual rate of approximately 0.31 percent per year since the 2014.

Based on standard traffic engineering practice, the various data sources used to project background growth, and the fact that the study area surrounding the site is already heavily developed, it is conservative (projecting higher than anticipated growth) to assume a growth rate of 0.5 percent per year for five years through 2027.

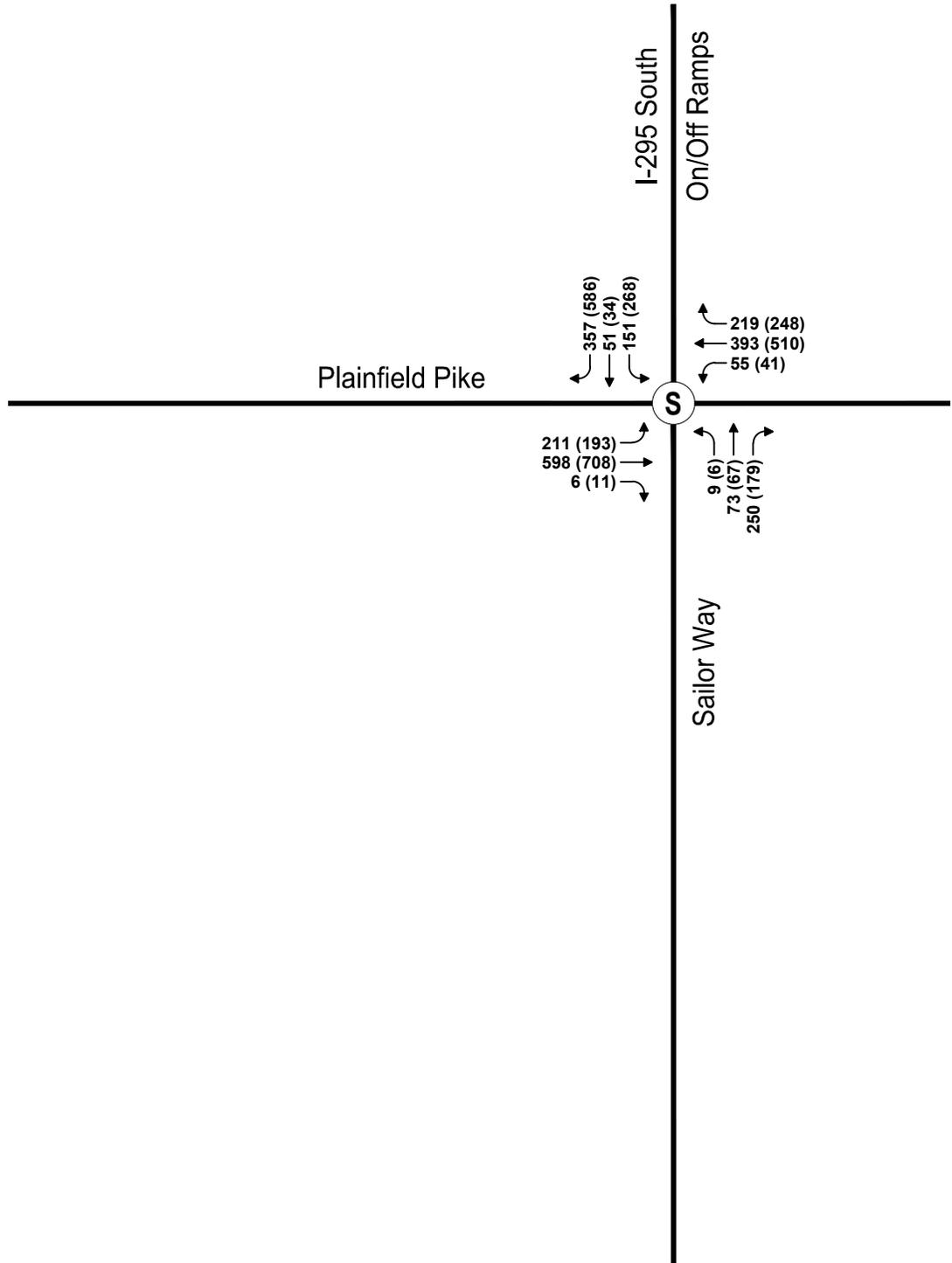
Planned Development

There are no planned developments in the vicinity of the project site that would have a significant impact on future traffic volumes. As stated above, the study area is already densely populated under existing condition with limited area left to develop further. Any minor developments that are constructed will be accounted for in the conservatively high annual background traffic growth discussed above.

2027 No-Build Traffic Volumes

The 2027 No-Build peak hour traffic volumes were determined by applying the 0.5 percent annual growth rate for five years to the 2022 peak hour traffic volumes. The 2027 No-Build condition peak hour traffic volumes for the weekday AM and PM peak periods are shown in **Figure 2**.

Legend	
XXX (XXX)	AM (PM) Traffic Volumes
NEG	Negligible
(S)	Traffic Signal



Not to Scale



2027 No-Build Conditions
Peak Hour Traffic Volumes
Plainfield Pike
Cranston, Rhode Island

Figure 2

Site-Generated Traffic Volumes

Design year 2027 Build traffic volumes were determined by estimating site-generated trips for the proposed development project and distributing these trips over the study area roadways. These site-generated trips were added to the 2027 No-Build traffic volumes to develop the Build weekday AM and PM peak hour traffic volumes. The following sections describe the procedures used to arrive at the Build traffic volume networks.

Trip Generation

In order to estimate the traffic impacts of the proposed Seasons Corner Market development, it is necessary to determine the traffic volumes expected to be generated. The following text discusses the procedures used to determine the expected trip generation of the proposed development.

Proposed Seasons Corner Market Trip Generation

For the purpose of this study, traffic projections for the proposed Seasons Corner Market development were derived from trip generation rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation*¹. After reviewing the trip generation characteristics, VHB used "Super Convenience Market/Gas Station" (Land Use Code [LUC] 960) to determine the traffic characteristics of the proposed project. **Table 2** summarizes the site-generated trips. VHB compared trip generation rates based on two methods (the number of fuel positions and peak hour traffic volumes on the adjacent street). Based on this comparison the projected trip generation based on the adjacent street traffic results in the highest volumes and was used for analysis purposes in order to be conservative in our assessment of traffic impacts of the proposed redevelopment of the site. The trip generation worksheets are included in **Appendix B**.

Pass-by Trips

Not all traffic generated by the site will be new traffic on study area roadways. A majority of the vehicle-trips generated by the proposed site will be drawn from the existing traffic streams passing the site in the form of pass-by traffic or from roadways in the vicinity of the site in the form of diverted-link traffic. The primary destination of pass-by traffic is elsewhere, and the primary trip will be resumed following a stop at the proposed site.

Based on data from ITE, pass-by trip rates of as high as 72 percent with a low rate of 53 percent were observed at similar sites. In order to present a conservative analysis (projecting higher than expected traffic volumes), it has been assumed in this analysis that only 53 percent of the traffic generated by the development for weekday AM and PM peak hours would be pass-by trips.

1 Trip Generation, 10th Edition, Institute of Transportation Engineers, Washington, D.C.

As shown in **Table 2**, the proposed Seasons Corner Market is projected to generate 186 (93 entering/93 exiting) new vehicle trips during the weekday AM and 162 (81 entering/81 exiting) new vehicle trips during the weekday PM peak hours.

Table 2 Trip Generation Summary

Time Period/ Movement	Gross Trips ¹	Pass-By Trips ²	Total New Trips
AM Peak³			
Enter	197	104	93
Exit	<u>197</u>	<u>104</u>	<u>93</u>
Total	394	208	186
PM Peak³			
Enter	172	91	81
Exit	<u>172</u>	<u>91</u>	<u>81</u>
Total	344	182	162

Source: Trip Generation, 10th Edition; Institute of Transportation Engineers (ITE); Washington, D.C.

1 Based on ITE Land Use Code (LUC) 960 (Super Convenience Market/Gas Station) for 1,969 vph during the AM peak hour and 2,295 vph during the PM peak hour.

2 Represents a 53% pass-by trips rate

3 Traffic volumes expressed in trips per hour

Trip Distribution and Assignment

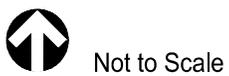
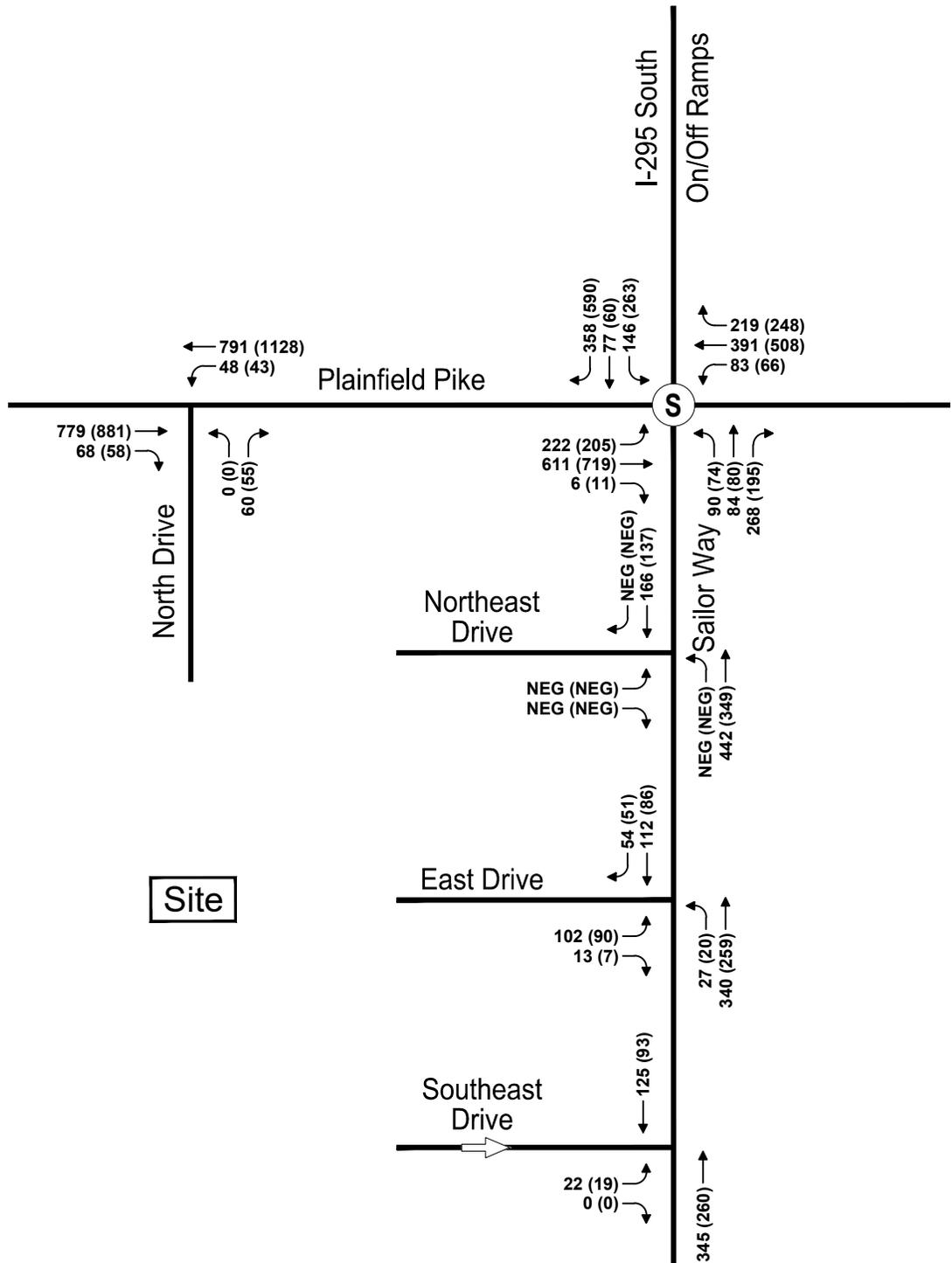
Having estimated project generated vehicle trips, the next step in the study is to determine the trip distribution of project traffic and assign these trips to the roadway network. The directional distribution of site traffic approaching and departing the development is a function of several variables. These include the population densities, shopping opportunities, competing uses, existing and proposed travel patterns, and the efficiency of the roadways leading to the site.

The trip distribution for this project was based on existing travel patterns. The projected new trips associated with the proposed development were distributed on the study area roadways based on 24 percent of the traffic to/from the north, 14 percent from the south, 34 percent to/from the west, and 28 percent to/from the east during the weekday AM peak hour and 31 percent of the traffic to/from the north, 9 percent from the south, 32 percent to/from the west, and 28 percent to/from the east during the weekday PM peak hour.

2027 Build Traffic Volumes

In order to evaluate the 2027 Build Condition, these site-generated and pass-by trips described above were added to the 2027 No-Build traffic volumes. The resulting 2027 Build condition weekday AM and weekday PM peak hour traffic volumes are shown in **Figure 3**.

Legend	
XXX (XXX)	AM (PM) Traffic Volumes
NEG	Negligible
(S)	Traffic Signal



2027 Build Conditions
Peak Hour Traffic Volumes
Plainfield Pike
Cranston, Rhode Island

Figure 3



4

Traffic Operations

VHB has prepared the following section of this memorandum to describe the quality of the traffic flow at the study intersections given the existing and projected travel demands. As a basis for this assessment, capacity analyses were conducted for the Plainfield Pike at Sailor Way/I-295 South ramps signalized intersection under existing conditions and future No-Build and Build conditions. The proposed unsignalized driveways were analyzed under future Build conditions. The analysis quantifies the impacts associated with projected new traffic generated by the proposed development. The capacity analyses were conducted using procedures contained in the 2000 Highway Capacity Manual². A discussion of the evaluation criteria and summary of the results of the signalized and unsignalized analyses is presented below.

Level of Service Criteria

Level of Service (LOS) is a term used to describe the different operating conditions that occur on a given roadway or intersection under various traffic volume loads. It is a qualitative measure of the effect of a number of factors including roadway geometrics, travel delay, and freedom to maneuver. Six levels of service are defined for each type of facility. Levels of service are given letter designations from A to F, with LOS A representing the best operating conditions and LOS F representing the worst.

The level of service designation is reported differently for signalized and unsignalized intersections. For signalized intersections, the analysis considers the operation of all traffic

² Highway Capacity Manual; Transportation Research Board, Washington, D.C. (2000).

entering the intersection and the level of service designation represents the overall traffic operating conditions at the intersection. For unsignalized intersections, the analysis assumes that traffic on the mainline is not affected by traffic on side streets. The LOS is only determined for left-turns from the main street and all movements from the minor street. The LOS at unsignalized intersections is typically reported for the worst movement, which is typically the minor street left turn movement or entire minor street approach if there is only one lane.

Signalized Intersections Capacity Analysis

Capacity analyses were conducted for the Plainfield Pike (Route 14) at Sailor Way/I-295 South ramps signalized intersection. For this study, the capacity analyses were completed using Synchro 11 software, with output based on the Highway Capacity Manual (HCM). A summary of the signalized capacity analyses is presented in the following section for the 2022 Existing, 2027 No-Build, and 2027 Build conditions for the weekday AM and weekday PM peak hour traffic volumes and is shown in **Table 3**. The HCM output is included in **Appendix D**.

Table 3 Signalized Intersection Capacity Analysis Summary

Intersection	Peak Hour	2022 Existing			2027 No-Build			2027 Build		
		V/C ¹	Delay ²	LOS ³	V/C	Delay	LOS	V/C	Delay	LOS
Plainfield Pike at Sailor Way/I-295	Weekday AM	0.63	23	C	0.64	24	C	0.71	27	C
	Weekday PM	0.78	31	C	0.80	32	C	0.86	33	C

- 1 Volume to capacity ratio
- 2 Vehicle delay expressed in seconds per vehicle
- 3 Level of Service

The analysis indicates that under Existing conditions, the Plainfield Pike at Sailor Way/I-295 South ramps traffic signal operates at LOS C during the weekday AM and weekday PM peak hours. The 95th percentile queues in the eastbound left-turn lane exceed the available storage resulting in more congestion than is represented in the Synchro analysis during the AM and PM peak hours. The intersection is projected to continue operating at LOS C during the weekday AM and PM peak hours under 2027 No-Build conditions with the same queuing issues on the eastbound approach.

The development is proposed to include improvements along Plainfield Pike associated with the project including modifications to the median to extend the storage length of the eastbound left-turn lane, through lane, and shared through/right-turn lane to accommodate the projected queues. With these improvements the intersection is projected to continue to operate at LOS C during the weekday AM and weekday PM peak hours under 2027 Build conditions. The increase in delays and queues at the intersection are projected to be minor.

Unsignalized Intersections Capacity Analysis

The proposed development is designed to have one driveway on Plainfield Pike and three driveways on Sailor Way. The traffic operations of these driveways are discussed below.

Plainfield Pike at North Drive

The North Drive, located on the south side of Plainfield Pike will operate as full access into the site and right-turn only out of the site. As discussed in the Signalized Intersection Capacity Analysis section, the Plainfield Pike median on the eastbound approach to Sailor Way/I-295 South ramps is proposed to be modified to increase the storage length of the eastbound left-turn lane, through lane, and shared through/right-turn lane to accommodate the projected queues. The geometric changes to the median and restriping will also accommodate westbound left-turns into the North Drive, including a 100-foot left turn lane.

The capacity analysis indicates that under 2027 Build conditions, the North Drive is projected to operate at LOS C. The Plainfield Pike westbound left-turn movement is projected to operate at a Level of Service (LOS) B during the weekday AM and PM peak hours. The calculated 95th percentile queues for this left-turn movement into the site are one vehicle during the weekday morning and evening peak hours.

Sailor Way at Northeast Drive

The Northeast Drive is located in approximately the same location as the existing driveway on the west side of Sailor Way. This driveway provides access to a small, overflow parking area including electric vehicle (EV) charging stations. These parking spaces are not expected to be high-turnover spaces; therefore, traffic volumes entering and exiting the Northeast Drive are projected to be minimal. Traffic operations at this intersection were not analyzed due to the minimal traffic volumes. The intersection is projected to operate better than the East Drive and Southeast Drive. It should be noted that the driveway is located approximately 150 feet south of the stop line at the Plainfield Pike at Sailor Way/I-295 South ramps intersection and the projected 95th percentile queues from the traffic signal are not projected to block this driveway.

Sailor Way at East Drive

The East Drive is located in approximately the same location as the existing driveway on the west side of Sailor Way; however, the width of the driveway has been reduced. The driveway is projected to operate at LOS B during the weekday AM and PM peak hours.

Sailor Way at Southeast Drive

The Southeast driveway is located on the west side of Sailor Way, slightly further south of the existing driveway, and is proposed to be changed from full access to exit only under the proposed site plan to accommodate trucks exiting after using the high-speed diesel pumps. The driveway is projected to operate at LOS B during the weekday AM and PM peak hours.

The capacity analyses are summarized in **Table 3** for the weekday morning and evening peak periods. The full analysis printouts are included in **Appendix C**.

It should be noted that the calculated delays, queues, and levels of service at the proposed driveways (shown in Table 3) are likely greater than they will actually be in the field because the capacity analyses do not take into account gaps created by the adjacent traffic signal and vehicles turning into adjacent driveways/side streets. The calculated delays are, therefore, overly conservative (overestimating the delay and queues on side streets/driveways). The traffic signal creates gaps in the traffic stream making it easier for vehicles to turn into and out of roads and driveways located near the traffic signal. There are also driveways located on the approach to the site where vehicles turning into and out of those driveways and side streets also create gaps in the traffic stream.

Table 4 Unsignalized Intersection Capacity Analysis

Location	Lane Group	2027 Proposed Condition		
		Dem ¹	Del ²	LOS ³
Weekday AM Peak Hour				
Plainfield Pike (Route 14) at Sailor Way/I-295 South Ramps	MB R	60	18	C
Sailor Way at East Drive	EB L/R	115	15	B
Sailor Way at Southeast Drive	EB L/R	22	13	B
Weekday PM Peak Hour				
Plainfield Pike (Route 14) at Sailor Way/I-295 South Ramps	MB R	55	20	C
Sailor Way at East Drive	EB L/R	97	13	B
Sailor Way at Southeast Drive	EB L/R	19	12	B

Source: VHB using Synchro 11 software.

1 Dem- vehicle demand

2 Del. - average delay in seconds per vehicle

3 LOS - level of service

EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; R = right; T = thru; L= left



5

Conclusions

The proposed development has been designed to provide efficient access/egress to and from the site. Off-site improvements will also be implemented to minimize queues and delays that currently occur on the eastbound approach to the Plainfield Pike at Sailor Way/I-195 South ramps intersection.

A majority of the site generated traffic will not be new traffic to the adjacent roadways. ITE data shows pass-by trip rates of as high as 72 percent with a low rate of 53 percent at similar sites. In order to present a conservative analysis (projecting higher than expected traffic volumes), it has been assumed in this analysis that only 53 percent of the traffic generated by the development for weekday morning and evening peak hours would be pass-by trips. Based on this conservative assumption, the proposed Seasons Corner Market is projected to generate 186 (93 entering/93 exiting) new vehicle trips during the weekday AM and 162 (81 entering/81 exiting) new vehicle trips during the weekday PM peak hours.

The development is proposed to include improvements along Plainfield Pike associated with the project including modifications to the median to extend the storage length of the eastbound left-turn lane, through lane, and shared through/right-turn lane to accommodate the projected queues at the Sailor Way/I-295 South ramps signalized intersection. With these improvements the intersection is projected to continue to operate at LOS C during the weekday AM and weekday PM peak hours under 2027 Build conditions. The increase in delays and queues are projected to be minor and the additional storage on the eastbound approach will help minimize the backups that currently occur during peak periods.

Access to and from the proposed Seasons Corner Market will be provided via one driveway on Plainfield Pike and three driveways located on the west side of Sailor Way. All driveways are projected to operate at acceptable levels of service (LOS C or better).

The North Drive, located on the south side of Plainfield Pike, will provide full access into the site and right turn only out of the site. The Plainfield Pike median is proposed to be modified and the roadway will be restriped to accommodate westbound left-turns into the North Drive, including a 100-foot left turn lane.

The Northeast Drive will provide access to a small, overflow parking with a few electric vehicle (EV) charging stations. These parking spaces are not expected to be high-turnover spaces; therefore, traffic volumes entering and exiting the Northeast Drive are projected to be minimal and the driveway is projected to operate efficiently. The driveway is located approximately 150 feet south of the stop line at the Plainfield Pike at Sailor Way/I-295 South ramps intersection and the projected 95th percentile queues are not projected to block this driveway.

The East Drive is located in approximately the same location as the existing driveway on Sailor Way; however, the width of the driveway has been reduced. The driveway is projected to operate at LOS B during the weekday AM and PM peak hours.

The Southeast driveway is located slightly further south of the existing driveway and is proposed to be changed from full access to exit only under the proposed site plan to accommodate trucks exiting after using the high-speed diesel pumps. The driveway is projected to operate at LOS B during the weekday AM and PM peak hours.

Appendix A – Traffic Count Data



Location Map: 228441 Cranston, RI

Precision Data Industries, LLC 157 Washington Street, Suite 2, Hudson, MA 01749 ph: 508-875-0100 email: datarequests@pdillc.com



Client: VHB	Engineer: Z. Tiang	Site Code: 52516.19	Date: Tues 3/1/2022	PDI Job # 228441	City, State: Cranston, RI
----------------	-----------------------	------------------------	------------------------	---------------------	------------------------------

PDI File #: **228441 A**
 Location: **N: I-295 SB Ramps S: Sailor Way**
 Location: **E: Plainfield Pike (Route 14) W: Plainfield Pike (Route 14)**
 City, State: **Cranston, RI**
 Client: **VHJB/ Z. Tiang**
 Site Code: **52516.19**
 Count Date: **Tuesday, March 1, 2022**
 Start Time: **8:00 AM**
 End Time: **10:00 AM**
 Class:



Cars and Heavy Vehicles (Combined)

	I-295 SB Ramps					Plainfield Pike (Route 14)					Sailor Way					Plainfield Pike (Route 14)					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	102	18	36	1	157	59	105	20	0	184	74	20	1	0	95	1	171	55	0	227	663
8:15 AM	102	14	29	0	145	52	111	9	0	172	68	14	0	0	82	0	134	59	0	193	592
8:30 AM	68	9	44	0	121	50	79	13	0	142	52	19	4	0	75	0	151	43	0	194	532
8:45 AM	76	9	38	0	123	53	88	12	0	153	50	18	4	0	72	5	127	49	0	181	529
Total	348	50	147	1	546	214	383	54	0	651	244	71	9	0	324	6	583	206	0	795	2316
9:00 AM	65	8	24	0	97	53	86	12	1	152	50	10	0	0	60	2	132	47	0	181	490
9:15 AM	75	6	31	0	112	52	102	10	1	165	29	17	2	0	48	3	117	31	0	151	476
9:30 AM	52	7	22	0	81	42	82	10	0	134	26	4	1	0	31	1	133	44	0	178	424
9:45 AM	59	9	34	0	102	37	92	10	0	139	34	14	2	0	50	5	102	35	0	142	433
Total	251	30	111	0	392	184	362	42	2	590	139	45	5	0	189	11	484	157	0	652	1823
Grand Total	599	80	258	1	938	398	745	96	2	1241	383	116	14	0	513	17	1067	363	0	1447	4139
Approach %	63.9	8.5	27.5	0.1		32.1	60.0	7.7	0.2		74.7	22.6	2.7	0.0		1.2	73.7	25.1	0.0		
Total %	14.5	1.9	6.2	0.0	22.7	9.6	18.0	2.3	0.0	30.0	9.3	2.8	0.3	0.0	12.4	0.4	25.8	8.8	0.0	35.0	
Exiting Leg Total	878					1710					193					1358					4139
Cars	538	68	228	1	835	367	675	80	2	1124	361	103	9	0	473	15	970	306	0	1291	3723
% Cars	89.8	85.0	88.4	100.0	89.0	92.2	90.6	83.3	100.0	90.6	94.3	88.8	64.3	0.0	92.2	88.2	90.9	84.3	0.0	89.2	89.9
Exiting Leg Total	777					1561					163					1222					3723
Heavy Vehicles	61	12	30	0	103	31	70	16	0	117	22	13	5	0	40	2	97	57	0	156	416
% Heavy Vehicles	10.2	15.0	11.6	0.0	11.0	7.8	9.4	16.7	0.0	9.4	5.7	11.2	35.7	0.0	7.8	11.8	9.1	15.7	0.0	10.8	10.1
Exiting Leg Total	101					149					30					136					416

Peak Hour Analysis from 08:00 AM to 10:00 AM begins at:

8:00 AM	I-295 SB Ramps					Plainfield Pike (Route 14)					Sailor Way					Plainfield Pike (Route 14)					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	102	18	36	1	157	59	105	20	0	184	74	20	1	0	95	1	171	55	0	227	663
8:15 AM	102	14	29	0	145	52	111	9	0	172	68	14	0	0	82	0	134	59	0	193	592
8:30 AM	68	9	44	0	121	50	79	13	0	142	52	19	4	0	75	0	151	43	0	194	532
8:45 AM	76	9	38	0	123	53	88	12	0	153	50	18	4	0	72	5	127	49	0	181	529
Total Volume	348	50	147	1	546	214	383	54	0	651	244	71	9	0	324	6	583	206	0	795	2316
% Approach Total	63.7	9.2	26.9	0.2		32.9	58.8	8.3	0.0		75.3	21.9	2.8	0.0		0.8	73.3	25.9	0.0		
PHF	0.853	0.694	0.835	0.250	0.869	0.907	0.863	0.675	0.000	0.885	0.824	0.888	0.563	0.000	0.853	0.300	0.852	0.873	0.000	0.876	0.873
Cars	310	43	121	1	475	192	352	46	0	590	233	61	7	0	301	5	533	180	0	718	2084
Cars %	89.1	86.0	82.3	100.0	87.0	89.7	91.9	85.2	0.0	90.6	95.5	85.9	77.8	0.0	92.9	83.3	91.4	87.4	0.0	90.3	90.0
Heavy Vehicles	38	7	26	0	71	22	31	8	0	61	11	10	2	0	23	1	50	26	0	77	232
Heavy Vehicles %	10.9	14.0	17.7	0.0	13.0	10.3	8.1	14.8	0.0	9.4	4.5	14.1	22.2	0.0	7.1	16.7	8.6	12.6	0.0	9.7	10.0
Cars Enter Leg	310	43	121	1	475	192	352	46	0	590	233	61	7	0	301	5	533	180	0	718	2084
Heavy Enter Leg	38	7	26	0	71	22	31	8	0	61	11	10	2	0	23	1	50	26	0	77	232
Total Entering Leg	348	50	147	1	546	214	383	54	0	651	244	71	9	0	324	6	583	206	0	795	2316
Cars Exiting Leg	434					887					94					669					2084
Heavy Exiting Leg	58					87					16					71					232
Total Exiting Leg	492					974					110					740					2316

PDI File #: **228441 A**
 Location: **N: I-295 SB Ramps S: Sailor Way**
 Location: **E: Plainfield Pike (Route 14) W: Plainfield Pike (Route 14)**
 City, State: **Cranston, RI**
 Client: **VHJB/ Z. Tiang**
 Site Code: **52516.19**
 Count Date: **Tuesday, March 1, 2022**
 Start Time: **8:00 AM**
 End Time: **10:00 AM**
 Class:



Cars

	I-295 SB Ramps					Plainfield Pike (Route 14)					Sailor Way					Plainfield Pike (Route 14)					Total					
	from North					from East					from South					from West										
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total						
8:00 AM	92	14	24	1	131	53	101	18	0	172	72	16	1	0	89	1	157	49	0	207	599					
8:15 AM	91	13	25	0	129	44	102	8	0	154	66	13	0	0	79	0	130	50	0	180	542					
8:30 AM	61	8	39	0	108	45	70	11	0	126	46	19	3	0	68	0	137	36	0	173	475					
8:45 AM	66	8	33	0	107	50	79	9	0	138	49	13	3	0	65	4	109	45	0	158	468					
Total	310	43	121	1	475	192	352	46	0	590	233	61	7	0	301	5	533	180	0	718	2084					
9:00 AM	58	6	23	0	87	46	78	11	1	136	48	10	0	0	58	2	120	43	0	165	446					
9:15 AM	69	5	31	0	105	51	88	9	1	149	27	15	0	0	42	3	102	21	0	126	422					
9:30 AM	48	6	21	0	75	41	74	8	0	123	25	4	1	0	30	1	121	36	0	158	386					
9:45 AM	53	8	32	0	93	37	83	6	0	126	28	13	1	0	42	4	94	26	0	124	385					
Total	228	25	107	0	360	175	323	34	2	534	128	42	2	0	172	10	437	126	0	573	1639					
Grand Total	538	68	228	1	835	367	675	80	2	1124	361	103	9	0	473	15	970	306	0	1291	3723					
Approach %	64.4	8.1	27.3	0.1		32.7	60.1	7.1	0.2		76.3	21.8	1.9	0.0		1.2	75.1	23.7	0.0							
Total %	14.5	1.8	6.1	0.0	22.4	9.9	18.1	2.1	0.1	30.2	9.7	2.8	0.2	0.0	12.7	0.4	26.1	8.2	0.0	34.7						
Exiting Leg Total						777					1561					163					1222					3723

Peak Hour Analysis from 08:00 AM to 10:00 AM begins at:

	I-295 SB Ramps					Plainfield Pike (Route 14)					Sailor Way					Plainfield Pike (Route 14)					Total					
	from North					from East					from South					from West										
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total						
8:00 AM	92	14	24	1	131	53	101	18	0	172	72	16	1	0	89	1	157	49	0	207	599					
8:15 AM	91	13	25	0	129	44	102	8	0	154	66	13	0	0	79	0	130	50	0	180	542					
8:30 AM	61	8	39	0	108	45	70	11	0	126	46	19	3	0	68	0	137	36	0	173	475					
8:45 AM	66	8	33	0	107	50	79	9	0	138	49	13	3	0	65	4	109	45	0	158	468					
Total Volume	310	43	121	1	475	192	352	46	0	590	233	61	7	0	301	5	533	180	0	718	2084					
% Approach Total	65.3	9.1	25.5	0.2		32.5	59.7	7.8	0.0		77.4	20.3	2.3	0.0		0.7	74.2	25.1	0.0							
PHF	0.842	0.768	0.776	0.250	0.906	0.906	0.863	0.639	0.000	0.858	0.809	0.803	0.583	0.000	0.846	0.313	0.849	0.900	0.000	0.867	0.870					
Entering Leg	310	43	121	1	475	192	352	46	0	590	233	61	7	0	301	5	533	180	0	718	2084					
Exiting Leg						434					887					94					669					2084
Total						909					1477					395					1387					4168

PDI File #: **228441 A**
 Location: **N: I-295 SB Ramps S: Sailor Way**
 Location: **E: Plainfield Pike (Route 14) W: Plainfield Pike (Route 14)**
 City, State: **Cranston, RI**
 Client: **VHJB/ Z. Tiang**
 Site Code: **52516.19**
 Count Date: **Tuesday, March 1, 2022**
 Start Time: **8:00 AM**
 End Time: **10:00 AM**



Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)

	I-295 SB Ramps					Plainfield Pike (Route 14)					Sailor Way					Plainfield Pike (Route 14)					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	10	4	12	0	26	6	4	2	0	12	2	4	0	0	6	0	14	6	0	20	64
8:15 AM	11	1	4	0	16	8	9	1	0	18	2	1	0	0	3	0	4	9	0	13	50
8:30 AM	7	1	5	0	13	5	9	2	0	16	6	0	1	0	7	0	14	7	0	21	57
8:45 AM	10	1	5	0	16	3	9	3	0	15	1	5	1	0	7	1	18	4	0	23	61
Total	38	7	26	0	71	22	31	8	0	61	11	10	2	0	23	1	50	26	0	77	232
9:00 AM	7	2	1	0	10	7	8	1	0	16	2	0	0	0	2	0	12	4	0	16	44
9:15 AM	6	1	0	0	7	1	14	1	0	16	2	2	2	0	6	0	15	10	0	25	54
9:30 AM	4	1	1	0	6	1	8	2	0	11	1	0	0	0	1	0	12	8	0	20	38
9:45 AM	6	1	2	0	9	0	9	4	0	13	6	1	1	0	8	1	8	9	0	18	48
Total	23	5	4	0	32	9	39	8	0	56	11	3	3	0	17	1	47	31	0	79	184
Grand Total	61	12	30	0	103	31	70	16	0	117	22	13	5	0	40	2	97	57	0	156	416
Approach %	59.2	11.7	29.1	0.0		26.5	59.8	13.7	0.0		55.0	32.5	12.5	0.0		1.3	62.2	36.5	0.0		
Total %	14.7	2.9	7.2	0.0	24.8	7.5	16.8	3.8	0.0	28.1	5.3	3.1	1.2	0.0	9.6	0.5	23.3	13.7	0.0	37.5	
Exiting Leg Total	101					149					30					136					416
Buses	7	0	1	0	8	1	14	0	0	15	1	0	0	0	1	0	11	5	0	16	40
% Buses	11.5	0.0	3.3	0.0	7.8	3.2	20.0	0.0	0.0	12.8	4.5	0.0	0.0	0.0	2.5	0.0	11.3	8.8	0.0	10.3	9.6
Exiting Leg Total	6					13					0					21					40
Single-Unit Trucks	36	9	28	0	73	29	44	12	0	85	14	11	3	0	28	2	61	36	0	99	285
% Single-Unit	59.0	75.0	93.3	0.0	70.9	93.5	62.9	75.0	0.0	72.6	63.6	84.6	60.0	0.0	70.0	100.0	62.9	63.2	0.0	63.5	68.5
Exiting Leg Total	76					103					23					83					285
Articulated Trucks	18	3	1	0	22	1	12	4	0	17	7	2	2	0	11	0	25	16	0	41	91
% Articulated	29.5	25.0	3.3	0.0	21.4	3.2	17.1	25.0	0.0	14.5	31.8	15.4	40.0	0.0	27.5	0.0	25.8	28.1	0.0	26.3	21.9
Exiting Leg Total	19					33					7					32					91

Peak Hour Analysis from 08:00 AM to 10:00 AM begins at:

8:00 AM	I-295 SB Ramps					Plainfield Pike (Route 14)					Sailor Way					Plainfield Pike (Route 14)					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	10	4	12	0	26	6	4	2	0	12	2	4	0	0	6	0	14	6	0	20	64
8:15 AM	11	1	4	0	16	8	9	1	0	18	2	1	0	0	3	0	4	9	0	13	50
8:30 AM	7	1	5	0	13	5	9	2	0	16	6	0	1	0	7	0	14	7	0	21	57
8:45 AM	10	1	5	0	16	3	9	3	0	15	1	5	1	0	7	1	18	4	0	23	61
Total Volume	38	7	26	0	71	22	31	8	0	61	11	10	2	0	23	1	50	26	0	77	232
% Approach Total	53.5	9.9	36.6	0.0		36.1	50.8	13.1	0.0		47.8	43.5	8.7	0.0		1.3	64.9	33.8	0.0		
PHF	0.864	0.438	0.542	0.000	0.683	0.688	0.861	0.667	0.000	0.847	0.458	0.500	0.500	0.000	0.821	0.250	0.694	0.722	0.000	0.837	0.906
Buses	4	0	1	0	5	0	5	0	0	5	0	0	0	0	0	0	6	1	0	7	17
Buses %	10.5	0.0	3.8	0.0	7.0	0.0	16.1	0.0	0.0	8.2	0.0	0.0	0.0	0.0	0.0	0.0	12.0	3.8	0.0	9.1	7.3
Single-Unit Trucks	25	6	24	0	55	21	18	7	0	46	8	8	0	0	16	1	36	19	0	56	173
Single-Unit %	65.8	85.7	92.3	0.0	77.5	95.5	58.1	87.5	0.0	75.4	72.7	80.0	0.0	0.0	69.6	100.0	72.0	73.1	0.0	72.7	74.6
Articulated Trucks	9	1	1	0	11	1	8	1	0	10	3	2	2	0	7	0	8	6	0	14	42
Articulated %	23.7	14.3	3.8	0.0	15.5	4.5	25.8	12.5	0.0	16.4	27.3	20.0	100.0	0.0	30.4	0.0	16.0	23.1	0.0	18.2	18.1
Buses	4	0	1	0	5	0	5	0	0	5	0	0	0	0	0	0	6	1	0	7	17
Single-Unit Trucks	25	6	24	0	55	21	18	7	0	46	8	8	0	0	16	1	36	19	0	56	173
Articulated Trucks	9	1	1	0	11	1	8	1	0	10	3	2	2	0	7	0	8	6	0	14	42
Total Entering Leg	38	7	26	0	71	22	31	8	0	61	11	10	2	0	23	1	50	26	0	77	232
Buses	1					7					0					9					17
Single-Unit Trucks	48					68					14					43					173
Articulated Trucks	9					12					2					19					42
Total Exiting Leg	58					87					16					71					232

PDI File #: **228441 A**
 Location: **N: I-295 SB Ramps S: Sailor Way**
 Location: **E: Plainfield Pike (Route 14) W: Plainfield Pike (Route 14)**
 City, State: **Cranston, RI**
 Client: **VHJB/ Z. Tiang**
 Site Code: **52516.19**
 Count Date: **Tuesday, March 1, 2022**
 Start Time: **8:00 AM**
 End Time: **10:00 AM**
 Class:



Buses

	I-295 SB Ramps					Plainfield Pike (Route 14)					Sailor Way					Plainfield Pike (Route 14)					Total	
	from North					from East					from South					from West						
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total		
8:00 AM	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	4	
8:15 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	1	0	1	3	
8:30 AM	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3	
8:45 AM	2	0	0	0	2	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	7	
Total	4	0	1	0	5	0	5	0	0	5	0	0	0	0	0	0	6	1	0	7	17	
9:00 AM	1	0	0	0	1	1	2	0	0	3	1	0	0	0	1	0	3	0	0	3	8	
9:15 AM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	1	3	0	4	8	
9:30 AM	2	0	0	0	2	0	1	0	0	1	0	0	0	0	0	0	1	1	0	2	5	
9:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2	
Total	3	0	0	0	3	1	9	0	0	10	1	0	0	0	1	0	5	4	0	9	23	
Grand Total	7	0	1	0	8	1	14	0	0	15	1	0	0	0	1	0	11	5	0	16	40	
Approach %	87.5	0.0	12.5	0.0		6.7	93.3	0.0	0.0		100.0	0.0	0.0	0.0		0.0	68.8	31.3	0.0			
Total %	17.5	0.0	2.5	0.0	20.0	2.5	35.0	0.0	0.0	37.5	2.5	0.0	0.0	0.0	2.5	0.0	27.5	12.5	0.0	40.0		
Exiting Leg Total						6					13					0					21	40

Peak Hour Analysis from 08:00 AM to 10:00 AM begins at:

8:45 AM	I-295 SB Ramps					Plainfield Pike (Route 14)					Sailor Way					Plainfield Pike (Route 14)					Total	
	from North					from East					from South					from West						
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total		
8:45 AM	2	0	0	0	2	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	7	
9:00 AM	1	0	0	0	1	1	2	0	0	3	1	0	0	0	1	0	3	0	0	3	8	
9:15 AM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	1	3	0	4	8	
9:30 AM	2	0	0	0	2	0	1	0	0	1	0	0	0	0	0	0	1	1	0	2	5	
Total Volume	5	0	0	0	5	1	9	0	0	10	1	0	0	0	1	0	8	4	0	12	28	
% Approach Total	100.0	0.0	0.0	0.0	0.0	10.0	90.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	66.7	33.3	0.0	0.0		
PHF	0.625	0.000	0.000	0.000	0.625	0.250	0.563	0.000	0.000	0.625	0.250	0.000	0.000	0.000	0.250	0.000	0.667	0.333	0.000	0.750	0.875	
Entering Leg	5	0	0	0	5	1	9	0	0	10	1	0	0	0	1	0	8	4	0	12	28	
Exiting Leg						5					9					0					14	28
Total						10					19					1					26	56

PDI File #: **228441 A**
 Location: **N: I-295 SB Ramps S: Sailor Way**
 Location: **E: Plainfield Pike (Route 14) W: Plainfield Pike (Route 14)**
 City, State: **Cranston, RI**
 Client: **VHJB/ Z. Tiang**
 Site Code: **52516.19**
 Count Date: **Tuesday, March 1, 2022**
 Start Time: **8:00 AM**
 End Time: **10:00 AM**
 Class:



Single-Unit Trucks

	I-295 SB Ramps					Plainfield Pike (Route 14)					Sailor Way					Plainfield Pike (Route 14)					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	8	4	11	0	23	6	1	1	0	8	2	4	0	0	6	0	10	5	0	15	52
8:15 AM	9	0	4	0	13	8	7	1	0	16	1	1	0	0	2	0	4	7	0	11	42
8:30 AM	1	1	4	0	6	4	6	2	0	12	4	0	0	0	4	0	11	4	0	15	37
8:45 AM	7	1	5	0	13	3	4	3	0	10	1	3	0	0	4	1	11	3	0	15	42
Total	25	6	24	0	55	21	18	7	0	46	8	8	0	0	16	1	36	19	0	56	173
9:00 AM	2	1	1	0	4	6	6	1	0	13	1	0	0	0	1	0	6	1	0	7	25
9:15 AM	5	0	0	0	5	1	8	0	0	9	2	2	2	0	6	0	9	4	0	13	33
9:30 AM	1	1	1	0	3	1	6	1	0	8	0	0	0	0	0	0	5	6	0	11	22
9:45 AM	3	1	2	0	6	0	6	3	0	9	3	1	1	0	5	1	5	6	0	12	32
Total	11	3	4	0	18	8	26	5	0	39	6	3	3	0	12	1	25	17	0	43	112
Grand Total	36	9	28	0	73	29	44	12	0	85	14	11	3	0	28	2	61	36	0	99	285
Approach %	49.3	12.3	38.4	0.0		34.1	51.8	14.1	0.0		50.0	39.3	10.7	0.0		2.0	61.6	36.4	0.0		
Total %	12.6	3.2	9.8	0.0	25.6	10.2	15.4	4.2	0.0	29.8	4.9	3.9	1.1	0.0	9.8	0.7	21.4	12.6	0.0	34.7	
Exiting Leg Total	76					103					23					83					285

Peak Hour Analysis from 08:00 AM to 10:00 AM begins at:

8:00 AM	I-295 SB Ramps					Plainfield Pike (Route 14)					Sailor Way					Plainfield Pike (Route 14)					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	8	4	11	0	23	6	1	1	0	8	2	4	0	0	6	0	10	5	0	15	52
8:15 AM	9	0	4	0	13	8	7	1	0	16	1	1	0	0	2	0	4	7	0	11	42
8:30 AM	1	1	4	0	6	4	6	2	0	12	4	0	0	0	4	0	11	4	0	15	37
8:45 AM	7	1	5	0	13	3	4	3	0	10	1	3	0	0	4	1	11	3	0	15	42
Total Volume	25	6	24	0	55	21	18	7	0	46	8	8	0	0	16	1	36	19	0	56	173
% Approach Total	45.5	10.9	43.6	0.0		45.7	39.1	15.2	0.0		50.0	50.0	0.0	0.0		1.8	64.3	33.9	0.0		
PHF	0.694	0.375	0.545	0.000	0.598	0.656	0.643	0.583	0.000	0.719	0.500	0.500	0.000	0.000	0.667	0.250	0.818	0.679	0.000	0.933	0.832
Entering Leg	25	6	24	0	55	21	18	7	0	46	8	8	0	0	16	1	36	19	0	56	173
Exiting Leg	48					68					14					43					173
Total	103					114					30					99					346

PDI File #: **228441 A**
 Location: **N: I-295 SB Ramps S: Sailor Way**
 Location: **E: Plainfield Pike (Route 14) W: Plainfield Pike (Route 14)**
 City, State: **Cranston, RI**
 Client: **VHJB/ Z. Tiang**
 Site Code: **52516.19**
 Count Date: **Tuesday, March 1, 2022**
 Start Time: **8:00 AM**
 End Time: **10:00 AM**
 Class:



Articulated Trucks

	I-295 SB Ramps					Plainfield Pike (Route 14)					Sailor Way					Plainfield Pike (Route 14)					Total					
	from North					from East					from South					from West										
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total						
8:00 AM	2	0	0	0	2	0	2	1	0	3	0	0	0	0	0	0	2	1	0	3	8					
8:15 AM	2	1	0	0	3	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	5					
8:30 AM	4	0	1	0	5	1	3	0	0	4	2	0	1	0	3	0	2	3	0	5	17					
8:45 AM	1	0	0	0	1	0	3	0	0	3	0	2	1	0	3	0	4	1	0	5	12					
Total	9	1	1	0	11	1	8	1	0	10	3	2	2	0	7	0	8	6	0	14	42					
9:00 AM	4	1	0	0	5	0	0	0	0	0	0	0	0	0	0	0	3	3	0	6	11					
9:15 AM	1	1	0	0	2	0	2	1	0	3	0	0	0	0	0	0	5	3	0	8	13					
9:30 AM	1	0	0	0	1	0	1	1	0	2	1	0	0	0	1	0	6	1	0	7	11					
9:45 AM	3	0	0	0	3	0	1	1	0	2	3	0	0	0	3	0	3	3	0	6	14					
Total	9	2	0	0	11	0	4	3	0	7	4	0	0	0	4	0	17	10	0	27	49					
Grand Total	18	3	1	0	22	1	12	4	0	17	7	2	2	0	11	0	25	16	0	41	91					
Approach %	81.8	13.6	4.5	0.0		5.9	70.6	23.5	0.0		63.6	18.2	18.2	0.0		0.0	61.0	39.0	0.0							
Total %	19.8	3.3	1.1	0.0	24.2	1.1	13.2	4.4	0.0	18.7	7.7	2.2	2.2	0.0	12.1	0.0	27.5	17.6	0.0	45.1						
Exiting Leg Total						19					33					7					32					91

Peak Hour Analysis from 08:00 AM to 10:00 AM begins at:

8:30 AM	I-295 SB Ramps					Plainfield Pike (Route 14)					Sailor Way					Plainfield Pike (Route 14)					Total					
	from North					from East					from South					from West										
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total						
8:30 AM	4	0	1	0	5	1	3	0	0	4	2	0	1	0	3	0	2	3	0	5	17					
8:45 AM	1	0	0	0	1	0	3	0	0	3	0	2	1	0	3	0	4	1	0	5	12					
9:00 AM	4	1	0	0	5	0	0	0	0	0	0	0	0	0	0	0	3	3	0	6	11					
9:15 AM	1	1	0	0	2	0	2	1	0	3	0	0	0	0	0	0	5	3	0	8	13					
Total Volume	10	2	1	0	13	1	8	1	0	10	2	2	2	0	6	0	14	10	0	24	53					
% Approach Total	76.9	15.4	7.7	0.0		10.0	80.0	10.0	0.0		33.3	33.3	33.3	0.0		0.0	58.3	41.7	0.0							
PHF	0.625	0.500	0.250	0.000	0.650	0.250	0.667	0.250	0.000	0.625	0.250	0.250	0.500	0.000	0.500	0.000	0.700	0.833	0.000	0.750	0.779					
Entering Leg	10	2	1	0	13	1	8	1	0	10	2	2	2	0	6	0	14	10	0	24	53					
Exiting Leg						13					17					3					20	53				
Total						26					27					9					44					106

PDI File #: **228441 A**
 Location: **N: I-295 SB Ramps S: Sailor Way**
 Location: **E: Plainfield Pike (Route 14) W: Plainfield Pike (Route 14)**
 City, State: **Cranston, RI**
 Client: **VHJB/ Z. Tiang**
 Site Code: **52516.19**
 Count Date: **Tuesday, March 1, 2022**
 Start Time: **3:00 PM**
 End Time: **5:00 PM**
 Class:



Cars and Heavy Vehicles (Combined)

	I-295 SB Ramps					Plainfield Pike (Route 14)					Sailor Way					Plainfield Pike (Route 14)					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
3:00 PM	112	6	44	0	162	43	115	10	0	168	61	15	3	0	79	3	134	39	0	176	585
3:15 PM	125	4	77	0	206	56	111	6	1	174	38	11	4	0	53	1	143	44	0	188	621
3:30 PM	146	7	56	0	209	54	133	12	0	199	54	27	4	0	85	1	190	53	0	244	737
3:45 PM	127	10	58	0	195	62	125	10	0	197	46	11	1	0	58	2	146	39	0	187	637
Total	510	27	235	0	772	215	484	38	1	738	199	64	12	0	275	7	613	175	0	795	2580
4:00 PM	134	6	72	0	212	65	137	4	0	206	49	25	2	0	76	3	152	50	0	205	699
4:15 PM	132	12	69	0	213	55	132	7	0	194	26	12	0	0	38	5	121	46	0	172	617
4:30 PM	136	9	65	0	210	64	119	13	0	196	55	16	3	0	74	1	224	43	0	268	748
4:45 PM	170	6	55	0	231	58	109	16	2	185	45	12	1	0	58	2	194	49	0	245	719
Total	572	33	261	0	866	242	497	40	2	781	175	65	6	0	246	11	691	188	0	890	2783
Grand Total	1082	60	496	0	1638	457	981	78	3	1519	374	129	18	0	521	18	1304	363	0	1685	5363
Approach %	66.1	3.7	30.3	0.0		30.1	64.6	5.1	0.2		71.8	24.8	3.5	0.0		1.1	77.4	21.5	0.0		
Total %	20.2	1.1	9.2	0.0	30.5	8.5	18.3	1.5	0.1	28.3	7.0	2.4	0.3	0.0	9.7	0.3	24.3	6.8	0.0	31.4	
Exiting Leg Total	949					2177					156					2081					5363
Cars	1020	54	479	0	1553	450	933	63	3	1449	360	125	16	0	501	17	1262	340	0	1619	5122
% Cars	94.3	90.0	96.6	0.0	94.8	98.5	95.1	80.8	100.0	95.4	96.3	96.9	88.9	0.0	96.2	94.4	96.8	93.7	0.0	96.1	95.5
Exiting Leg Total	915					2104					134					1969					5122
Heavy Vehicles	62	6	17	0	85	7	48	15	0	70	14	4	2	0	20	1	42	23	0	66	241
% Heavy Vehicles	5.7	10.0	3.4	0.0	5.2	1.5	4.9	19.2	0.0	4.6	3.7	3.1	11.1	0.0	3.8	5.6	3.2	6.3	0.0	3.9	4.5
Exiting Leg Total	34					73					22					112					241

Peak Hour Analysis from 03:00 PM to 05:00 PM begins at:

4:00 PM	I-295 SB Ramps					Plainfield Pike (Route 14)					Sailor Way					Plainfield Pike (Route 14)					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
4:00 PM	134	6	72	0	212	65	137	4	0	206	49	25	2	0	76	3	152	50	0	205	699
4:15 PM	132	12	69	0	213	55	132	7	0	194	26	12	0	0	38	5	121	46	0	172	617
4:30 PM	136	9	65	0	210	64	119	13	0	196	55	16	3	0	74	1	224	43	0	268	748
4:45 PM	170	6	55	0	231	58	109	16	2	185	45	12	1	0	58	2	194	49	0	245	719
Total Volume	572	33	261	0	866	242	497	40	2	781	175	65	6	0	246	11	691	188	0	890	2783
% Approach Total	66.1	3.8	30.1	0.0		31.0	63.6	5.1	0.3		71.1	26.4	2.4	0.0		1.2	77.6	21.1	0.0		
PHF	0.841	0.688	0.906	0.000	0.937	0.931	0.907	0.625	0.250	0.948	0.795	0.650	0.500	0.000	0.809	0.550	0.771	0.940	0.000	0.830	0.930
Cars	548	30	255	0	833	239	471	33	2	745	167	64	4	0	235	10	676	177	0	863	2676
Cars %	95.8	90.9	97.7	0.0	96.2	98.8	94.8	82.5	100.0	95.4	95.4	98.5	66.7	0.0	95.5	90.9	97.8	94.1	0.0	97.0	96.2
Heavy Vehicles	24	3	6	0	33	3	26	7	0	36	8	1	2	0	11	1	15	11	0	27	107
Heavy Vehicles %	4.2	9.1	2.3	0.0	3.8	1.2	5.2	17.5	0.0	4.6	4.6	1.5	33.3	0.0	4.5	9.1	2.2	5.9	0.0	3.0	3.8
Cars Enter Leg	548	30	255	0	833	239	471	33	2	745	167	64	4	0	235	10	676	177	0	863	2676
Heavy Enter Leg	24	3	6	0	33	3	26	7	0	36	8	1	2	0	11	1	15	11	0	27	107
Total Entering Leg	572	33	261	0	866	242	497	40	2	781	175	65	6	0	246	11	691	188	0	890	2783
Cars Exiting Leg	480					1100					73					1023					2676
Heavy Exiting Leg	15					29					11					52					107
Total Exiting Leg	495					1129					84					1075					2783

PDI File #: **228441 A**
 Location: **N: I-295 SB Ramps S: Sailor Way**
 Location: **E: Plainfield Pike (Route 14) W: Plainfield Pike (Route 14)**
 City, State: **Cranston, RI**
 Client: **VHJB/ Z. Tiang**
 Site Code: **52516.19**
 Count Date: **Tuesday, March 1, 2022**
 Start Time: **3:00 PM**
 End Time: **5:00 PM**
 Class:



Cars

	I-295 SB Ramps					Plainfield Pike (Route 14)					Sailor Way					Plainfield Pike (Route 14)					Total					
	from North					from East					from South					from West										
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total						
3:00 PM	100	5	42	0	147	41	111	8	0	160	59	15	3	0	77	3	127	38	0	168	552					
3:15 PM	117	4	72	0	193	55	105	5	1	166	37	11	4	0	52	1	136	41	0	178	589					
3:30 PM	137	7	55	0	199	53	125	8	0	186	54	24	4	0	82	1	181	47	0	229	696					
3:45 PM	118	8	55	0	181	62	121	9	0	192	43	11	1	0	55	2	142	37	0	181	609					
Total	472	24	224	0	720	211	462	30	1	704	193	61	12	0	266	7	586	163	0	756	2446					
4:00 PM	126	6	69	0	201	63	126	3	0	192	46	25	1	0	72	3	147	46	0	196	661					
4:15 PM	126	11	67	0	204	55	129	4	0	188	26	12	0	0	38	4	116	42	0	162	592					
4:30 PM	132	8	65	0	205	64	114	12	0	190	52	15	2	0	69	1	219	40	0	260	724					
4:45 PM	164	5	54	0	223	57	102	14	2	175	43	12	1	0	56	2	194	49	0	245	699					
Total	548	30	255	0	833	239	471	33	2	745	167	64	4	0	235	10	676	177	0	863	2676					
Grand Total	1020	54	479	0	1553	450	933	63	3	1449	360	125	16	0	501	17	1262	340	0	1619	5122					
Approach %	65.7	3.5	30.8	0.0		31.1	64.4	4.3	0.2		71.9	25.0	3.2	0.0		1.1	77.9	21.0	0.0							
Total %	19.9	1.1	9.4	0.0	30.3	8.8	18.2	1.2	0.1	28.3	7.0	2.4	0.3	0.0	9.8	0.3	24.6	6.6	0.0	31.6						
Exiting Leg Total						915					2104					134					1969					5122

Peak Hour Analysis from 03:00 PM to 05:00 PM begins at:

	I-295 SB Ramps					Plainfield Pike (Route 14)					Sailor Way					Plainfield Pike (Route 14)					Total					
	from North					from East					from South					from West										
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total						
4:00 PM	126	6	69	0	201	63	126	3	0	192	46	25	1	0	72	3	147	46	0	196	661					
4:15 PM	126	11	67	0	204	55	129	4	0	188	26	12	0	0	38	4	116	42	0	162	592					
4:30 PM	132	8	65	0	205	64	114	12	0	190	52	15	2	0	69	1	219	40	0	260	724					
4:45 PM	164	5	54	0	223	57	102	14	2	175	43	12	1	0	56	2	194	49	0	245	699					
Total Volume	548	30	255	0	833	239	471	33	2	745	167	64	4	0	235	10	676	177	0	863	2676					
% Approach Total	65.8	3.6	30.6	0.0		32.1	63.2	4.4	0.3		71.1	27.2	1.7	0.0		1.2	78.3	20.5	0.0							
PHF	0.835	0.682	0.924	0.000	0.934	0.934	0.913	0.589	0.250	0.970	0.803	0.640	0.500	0.000	0.816	0.625	0.772	0.903	0.000	0.830	0.924					
Entering Leg	548	30	255	0	833	239	471	33	2	745	167	64	4	0	235	10	676	177	0	863	2676					
Exiting Leg						480					1100					73					1023					2676
Total						1313					1845					308					1886					5352

PDI File #: **228441 A**
 Location: **N: I-295 SB Ramps S: Sailor Way**
 Location: **E: Plainfield Pike (Route 14) W: Plainfield Pike (Route 14)**
 City, State: **Cranston, RI**
 Client: **VHJB/ Z. Tiang**
 Site Code: **52516.19**
 Count Date: **Tuesday, March 1, 2022**
 Start Time: **3:00 PM**
 End Time: **5:00 PM**



Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)

	I-295 SB Ramps					Plainfield Pike (Route 14)					Sailor Way					Plainfield Pike (Route 14)					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
3:00 PM	12	1	2	0	15	2	4	2	0	8	2	0	0	0	2	0	7	1	0	8	33
3:15 PM	8	0	5	0	13	1	6	1	0	8	1	0	0	0	1	0	7	3	0	10	32
3:30 PM	9	0	1	0	10	1	8	4	0	13	0	3	0	0	3	0	9	6	0	15	41
3:45 PM	9	2	3	0	14	0	4	1	0	5	3	0	0	0	3	0	4	2	0	6	28
Total	38	3	11	0	52	4	22	8	0	34	6	3	0	0	9	0	27	12	0	39	134
4:00 PM	8	0	3	0	11	2	11	1	0	14	3	0	1	0	4	0	5	4	0	9	38
4:15 PM	6	1	2	0	9	0	3	3	0	6	0	0	0	0	0	1	5	4	0	10	25
4:30 PM	4	1	0	0	5	0	5	1	0	6	3	1	1	0	5	0	5	3	0	8	24
4:45 PM	6	1	1	0	8	1	7	2	0	10	2	0	0	0	2	0	0	0	0	0	20
Total	24	3	6	0	33	3	26	7	0	36	8	1	2	0	11	1	15	11	0	27	107
Grand Total	62	6	17	0	85	7	48	15	0	70	14	4	2	0	20	1	42	23	0	66	241
Approach %	72.9	7.1	20.0	0.0		10.0	68.6	21.4	0.0		70.0	20.0	10.0	0.0		1.5	63.6	34.8	0.0		
Total %	25.7	2.5	7.1	0.0	35.3	2.9	19.9	6.2	0.0	29.0	5.8	1.7	0.8	0.0	8.3	0.4	17.4	9.5	0.0	27.4	
Exiting Leg Total	34					73					22					112					241
Buses	9	0	4	0	13	2	8	2	0	12	2	0	0	0	2	0	8	2	0	10	37
% Buses	14.5	0.0	23.5	0.0	15.3	28.6	16.7	13.3	0.0	17.1	14.3	0.0	0.0	0.0	10.0	0.0	19.0	8.7	0.0	15.2	15.4
Exiting Leg Total	4					14					2					17					37
Single-Unit Trucks	31	3	11	0	45	3	24	6	0	33	9	2	2	0	13	1	21	13	0	35	126
% Single-Unit	50.0	50.0	64.7	0.0	52.9	42.9	50.0	40.0	0.0	47.1	64.3	50.0	100.0	0.0	65.0	100.0	50.0	56.5	0.0	53.0	52.3
Exiting Leg Total	18					41					10					57					126
Articulated Trucks	22	3	2	0	27	2	16	7	0	25	3	2	0	0	5	0	13	8	0	21	78
% Articulated	35.5	50.0	11.8	0.0	31.8	28.6	33.3	46.7	0.0	35.7	21.4	50.0	0.0	0.0	25.0	0.0	31.0	34.8	0.0	31.8	32.4
Exiting Leg Total	12					18					10					38					78

Peak Hour Analysis from 03:00 PM to 05:00 PM begins at:

	I-295 SB Ramps					Plainfield Pike (Route 14)					Sailor Way					Plainfield Pike (Route 14)					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
3:15 PM	8	0	5	0	13	1	6	1	0	8	1	0	0	0	1	0	7	3	0	10	32
3:30 PM	9	0	1	0	10	1	8	4	0	13	0	3	0	0	3	0	9	6	0	15	41
3:45 PM	9	2	3	0	14	0	4	1	0	5	3	0	0	0	3	0	4	2	0	6	28
4:00 PM	8	0	3	0	11	2	11	1	0	14	3	0	1	0	4	0	5	4	0	9	38
Total Volume	34	2	12	0	48	4	29	7	0	40	7	3	1	0	11	0	25	15	0	40	139
% Approach Total	70.8	4.2	25.0	0.0		10.0	72.5	17.5	0.0		63.6	27.3	9.1	0.0		0.0	62.5	37.5	0.0		
PHF	0.944	0.250	0.600	0.000	0.857	0.500	0.659	0.438	0.000	0.714	0.583	0.250	0.250	0.000	0.688	0.000	0.694	0.625	0.000	0.667	0.848
Buses	6	0	3	0	9	2	6	1	0	9	2	0	0	0	2	0	7	2	0	9	29
Buses %	17.6	0.0	25.0	0.0	18.8	50.0	20.7	14.3	0.0	22.5	28.6	0.0	0.0	0.0	18.2	0.0	28.0	13.3	0.0	22.5	20.9
Single-Unit Trucks	20	1	8	0	29	1	15	3	0	19	2	1	1	0	4	0	11	8	0	19	71
Single-Unit %	58.8	50.0	66.7	0.0	60.4	25.0	51.7	42.9	0.0	47.5	28.6	33.3	100.0	0.0	36.4	0.0	44.0	53.3	0.0	47.5	51.1
Articulated Trucks	8	1	1	0	10	1	8	3	0	12	3	2	0	0	5	0	7	5	0	12	39
Articulated %	23.5	50.0	8.3	0.0	20.8	25.0	27.6	42.9	0.0	30.0	42.9	66.7	0.0	0.0	45.5	0.0	28.0	33.3	0.0	30.0	28.1
Buses	6	0	3	0	9	2	6	1	0	9	2	0	0	0	2	0	7	2	0	9	29
Single-Unit Trucks	20	1	8	0	29	1	15	3	0	19	2	1	1	0	4	0	11	8	0	19	71
Articulated Trucks	8	1	1	0	10	1	8	3	0	12	3	2	0	0	5	0	7	5	0	12	39
Total Entering Leg	34	2	12	0	48	4	29	7	0	40	7	3	1	0	11	0	25	15	0	40	139
Buses	4					12					1					12					29
Single-Unit Trucks	10					21					4					36					71
Articulated Trucks	8					11					4					16					39
Total Exiting Leg	22					44					9					64					139

PDI File #: **228441 A**
 Location: **N: I-295 SB Ramps S: Sailor Way**
 Location: **E: Plainfield Pike (Route 14) W: Plainfield Pike (Route 14)**
 City, State: **Cranston, RI**
 Client: **VHJB/ Z. Tiang**
 Site Code: **52516.19**
 Count Date: **Tuesday, March 1, 2022**
 Start Time: **3:00 PM**
 End Time: **5:00 PM**
 Class:



Buses

	I-295 SB Ramps					Plainfield Pike (Route 14)					Sailor Way					Plainfield Pike (Route 14)					Total		
	from North					from East					from South					from West							
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total			
3:00 PM	1	0	1	0	2	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	4		
3:15 PM	0	0	3	0	3	1	1	0	0	2	1	0	0	0	1	0	0	0	0	0	6		
3:30 PM	2	0	0	0	2	1	2	0	0	3	0	0	0	0	0	0	2	0	0	2	7		
3:45 PM	1	0	0	0	1	0	0	1	0	1	1	0	0	0	1	0	3	1	0	4	7		
Total	4	0	4	0	8	2	4	2	0	8	2	0	0	0	2	0	5	1	0	6	24		
4:00 PM	3	0	0	0	3	0	3	0	0	3	0	0	0	0	0	0	2	1	0	3	9		
4:15 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
4:30 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2		
4:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1		
Total	5	0	0	0	5	0	4	0	0	4	0	0	0	0	0	0	3	1	0	4	13		
Grand Total	9	0	4	0	13	2	8	2	0	12	2	0	0	0	2	0	8	2	0	10	37		
Approach %	69.2	0.0	30.8	0.0		16.7	66.7	16.7	0.0		100.0	0.0	0.0	0.0		0.0	80.0	20.0	0.0				
Total %	24.3	0.0	10.8	0.0	35.1	5.4	21.6	5.4	0.0	32.4	5.4	0.0	0.0	0.0	5.4	0.0	21.6	5.4	0.0	27.0			
Exiting Leg Total						4					14					2					17		37

Peak Hour Analysis from 03:00 PM to 05:00 PM begins at:

3:15 PM	I-295 SB Ramps					Plainfield Pike (Route 14)					Sailor Way					Plainfield Pike (Route 14)					Total		
	from North					from East					from South					from West							
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total			
3:15 PM	0	0	3	0	3	1	1	0	0	2	1	0	0	0	1	0	0	0	0	0	6		
3:30 PM	2	0	0	0	2	1	2	0	0	3	0	0	0	0	0	0	2	0	0	2	7		
3:45 PM	1	0	0	0	1	0	0	1	0	1	1	0	0	0	1	0	3	1	0	4	7		
4:00 PM	3	0	0	0	3	0	3	0	0	3	0	0	0	0	0	0	2	1	0	3	9		
Total Volume	6	0	3	0	9	2	6	1	0	9	2	0	0	0	2	0	7	2	0	9	29		
% Approach Total	66.7	0.0	33.3	0.0		22.2	66.7	11.1	0.0		100.0	0.0	0.0	0.0		0.0	77.8	22.2	0.0				
PHF	0.500	0.000	0.250	0.000	0.750	0.500	0.500	0.250	0.000	0.750	0.500	0.000	0.000	0.000	0.500	0.000	0.583	0.500	0.000	0.563	0.806		
Entering Leg	6	0	3	0	9	2	6	1	0	9	2	0	0	0	2	0	7	2	0	9	29		
Exiting Leg						4					12					1					12		29
Total						13					21					3					21		58

PDI File #: **228441 A**
 Location: **N: I-295 SB Ramps S: Sailor Way**
 Location: **E: Plainfield Pike (Route 14) W: Plainfield Pike (Route 14)**
 City, State: **Cranston, RI**
 Client: **VHJB/ Z. Tiang**
 Site Code: **52516.19**
 Count Date: **Tuesday, March 1, 2022**
 Start Time: **3:00 PM**
 End Time: **5:00 PM**
 Class:



Single-Unit Trucks

	I-295 SB Ramps					Plainfield Pike (Route 14)					Sailor Way					Plainfield Pike (Route 14)					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
3:00 PM	6	1	1	0	8	1	1	1	0	3	2	0	0	0	2	0	5	0	0	5	18
3:15 PM	7	0	2	0	9	0	3	1	0	4	0	0	0	0	0	0	4	3	0	7	20
3:30 PM	5	0	1	0	6	0	4	1	0	5	0	1	0	0	1	0	4	4	0	8	20
3:45 PM	5	1	3	0	9	0	1	0	0	1	0	0	0	0	0	0	1	1	0	2	12
Total	23	2	7	0	32	1	9	3	0	13	2	1	0	0	3	0	14	8	0	22	70
4:00 PM	3	0	2	0	5	1	7	1	0	9	2	0	1	0	3	0	2	0	0	2	19
4:15 PM	3	0	1	0	4	0	1	1	0	2	0	0	0	0	0	1	3	2	0	6	12
4:30 PM	2	0	0	0	2	0	3	0	0	3	3	1	1	0	5	0	2	3	0	5	15
4:45 PM	0	1	1	0	2	1	4	1	0	6	2	0	0	0	2	0	0	0	0	0	10
Total	8	1	4	0	13	2	15	3	0	20	7	1	2	0	10	1	7	5	0	13	56
Grand Total	31	3	11	0	45	3	24	6	0	33	9	2	2	0	13	1	21	13	0	35	126
Approach %	68.9	6.7	24.4	0.0		9.1	72.7	18.2	0.0		69.2	15.4	15.4	0.0		2.9	60.0	37.1	0.0		
Total %	24.6	2.4	8.7	0.0	35.7	2.4	19.0	4.8	0.0	26.2	7.1	1.6	1.6	0.0	10.3	0.8	16.7	10.3	0.0	27.8	
Exiting Leg Total	18					41					10					57					126

Peak Hour Analysis from 03:00 PM to 05:00 PM begins at:

3:15 PM	I-295 SB Ramps					Plainfield Pike (Route 14)					Sailor Way					Plainfield Pike (Route 14)					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
3:15 PM	7	0	2	0	9	0	3	1	0	4	0	0	0	0	0	0	4	3	0	7	20
3:30 PM	5	0	1	0	6	0	4	1	0	5	0	1	0	0	1	0	4	4	0	8	20
3:45 PM	5	1	3	0	9	0	1	0	0	1	0	0	0	0	0	0	1	1	0	2	12
4:00 PM	3	0	2	0	5	1	7	1	0	9	2	0	1	0	3	0	2	0	0	2	19
Total Volume	20	1	8	0	29	1	15	3	0	19	2	1	1	0	4	0	11	8	0	19	71
% Approach Total	69.0	3.4	27.6	0.0		5.3	78.9	15.8	0.0		50.0	25.0	25.0	0.0		0.0	57.9	42.1	0.0		
PHF	0.714	0.250	0.667	0.000	0.806	0.250	0.536	0.750	0.000	0.528	0.250	0.250	0.250	0.000	0.333	0.000	0.688	0.500	0.000	0.594	0.888
Entering Leg	20	1	8	0	29	1	15	3	0	19	2	1	1	0	4	0	11	8	0	19	71
Exiting Leg																4					36
Total	39					40					8					55					142

PDI File #: **228441 A**
 Location: **N: I-295 SB Ramps S: Sailor Way**
 Location: **E: Plainfield Pike (Route 14) W: Plainfield Pike (Route 14)**
 City, State: **Cranston, RI**
 Client: **VHJB/ Z. Tiang**
 Site Code: **52516.19**
 Count Date: **Tuesday, March 1, 2022**
 Start Time: **3:00 PM**
 End Time: **5:00 PM**
 Class:



Articulated Trucks

	I-295 SB Ramps					Plainfield Pike (Route 14)					Sailor Way					Plainfield Pike (Route 14)					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
3:00 PM	5	0	0	0	5	1	2	0	0	3	0	0	0	0	0	0	2	1	0	3	11
3:15 PM	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	6
3:30 PM	2	0	0	0	2	0	2	3	0	5	0	2	0	0	2	0	3	2	0	5	14
3:45 PM	3	1	0	0	4	0	3	0	0	3	2	0	0	0	2	0	0	0	0	0	9
Total	11	1	0	0	12	1	9	3	0	13	2	2	0	0	4	0	8	3	0	11	40
4:00 PM	2	0	1	0	3	1	1	0	0	2	1	0	0	0	1	0	1	3	0	4	10
4:15 PM	2	1	1	0	4	0	2	2	0	4	0	0	0	0	0	0	2	2	0	4	12
4:30 PM	1	1	0	0	2	0	2	1	0	3	0	0	0	0	0	0	2	0	0	2	7
4:45 PM	6	0	0	0	6	0	2	1	0	3	0	0	0	0	0	0	0	0	0	0	9
Total	11	2	2	0	15	1	7	4	0	12	1	0	0	0	1	0	5	5	0	10	38
Grand Total	22	3	2	0	27	2	16	7	0	25	3	2	0	0	5	0	13	8	0	21	78
Approach %	81.5	11.1	7.4	0.0		8.0	64.0	28.0	0.0		60.0	40.0	0.0	0.0		0.0	61.9	38.1	0.0		
Total %	28.2	3.8	2.6	0.0	34.6	2.6	20.5	9.0	0.0	32.1	3.8	2.6	0.0	0.0	6.4	0.0	16.7	10.3	0.0	26.9	
Exiting Leg Total	12					18					10					38					78

Peak Hour Analysis from 03:00 PM to 05:00 PM begins at:

3:30 PM	I-295 SB Ramps					Plainfield Pike (Route 14)					Sailor Way					Plainfield Pike (Route 14)					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
3:30 PM	2	0	0	0	2	0	2	3	0	5	0	2	0	0	2	0	3	2	0	5	14
3:45 PM	3	1	0	0	4	0	3	0	0	3	2	0	0	0	2	0	0	0	0	0	9
4:00 PM	2	0	1	0	3	1	1	0	0	2	1	0	0	0	1	0	1	3	0	4	10
4:15 PM	2	1	1	0	4	0	2	2	0	4	0	0	0	0	0	0	2	2	0	4	12
Total Volume	9	2	2	0	13	1	8	5	0	14	3	2	0	0	5	0	6	7	0	13	45
% Approach Total	69.2	15.4	15.4	0.0		7.1	57.1	35.7	0.0		60.0	40.0	0.0	0.0		0.0	46.2	53.8	0.0		
PHF	0.750	0.500	0.500	0.000	0.813	0.250	0.667	0.417	0.000	0.700	0.375	0.250	0.000	0.000	0.625	0.000	0.500	0.583	0.000	0.650	0.804
Entering Leg	9	2	2	0	13	1	8	5	0	14	3	2	0	0	5	0	6	7	0	13	45
Exiting Leg																7					17
Total	23					25					12					30					90

Appendix B – Trip Generation

Super Convenience Market/Gas Station (960)

Vehicle Trip Ends vs: AM Peak Hour Traffic on Adj. St.
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 9

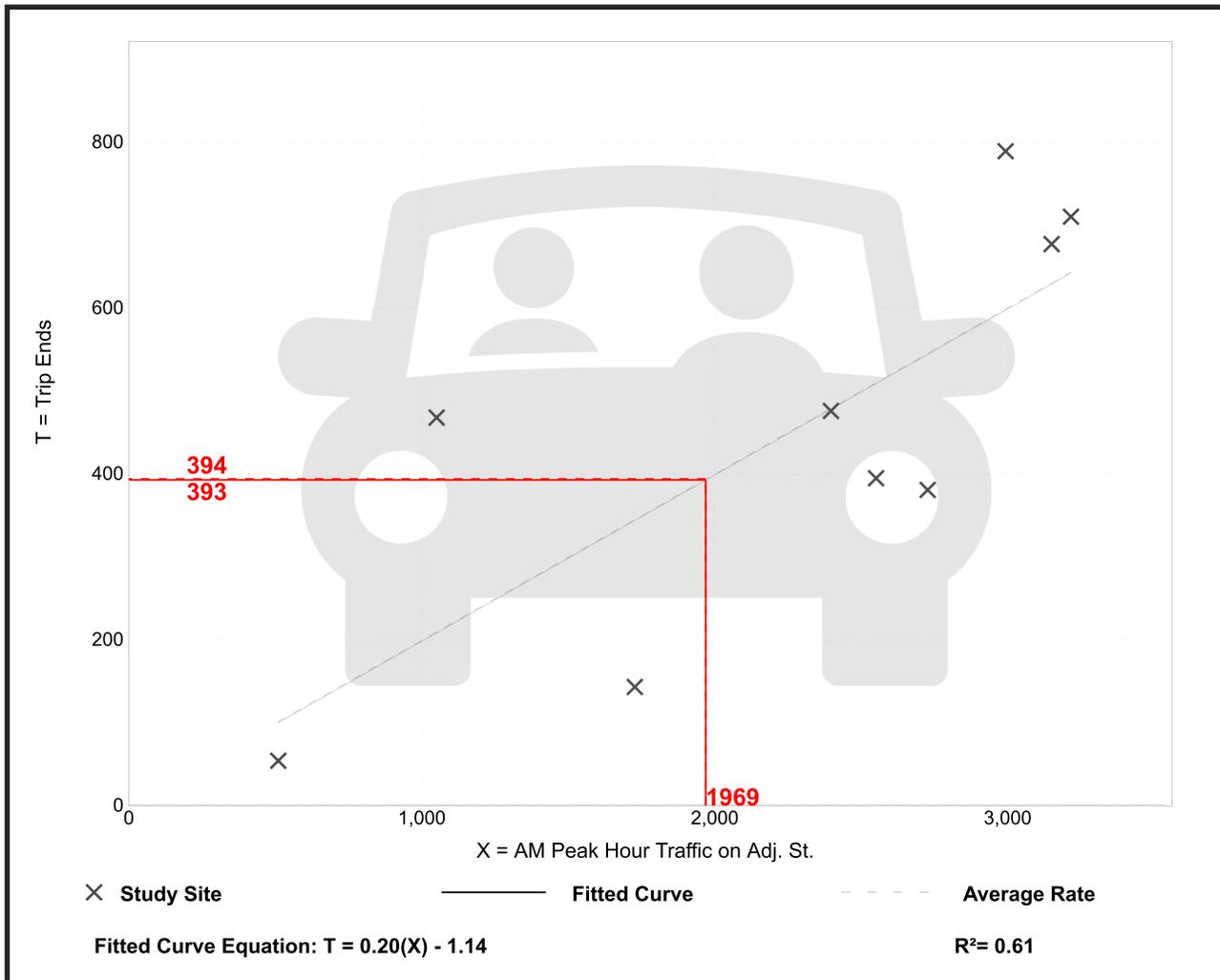
Avg. AM Peak Hour Traffic on Adj. St.: 2258

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per AM Peak Hour Traffic on Adj. St.

Average Rate	Range of Rates	Standard Deviation
0.20	0.08 - 0.45	0.08

Data Plot and Equation



Super Convenience Market/Gas Station (960)

Vehicle Trip Ends vs: PM Peak Hour Traffic on Adj. St.
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 9

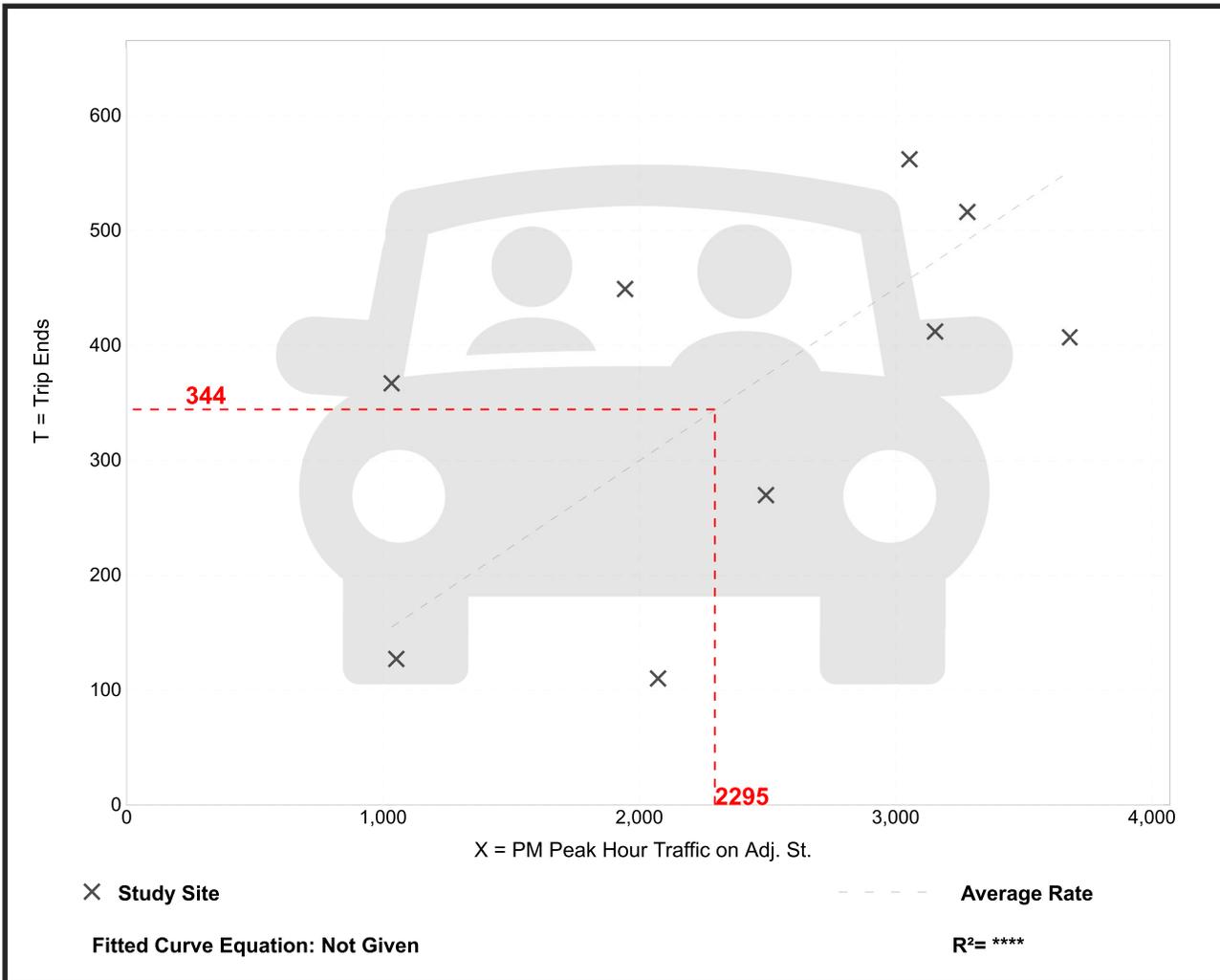
Avg. PM Peak Hour Traffic on Adj. St.: 2418

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per PM Peak Hour Traffic on Adj. St.

Average Rate	Range of Rates	Standard Deviation
0.15	0.05 - 0.35	0.07

Data Plot and Equation



ITE TRIP GENERATION WORKSHEET
 (10th Edition, Updated 2017)

LANDUSE: Gasoline/Service Station with Convenience Market
LANDUSE CODE: 960 Independent Variable --- Vehicle Fueling Positions
SETTING/LOCATION: General Urban/Suburban
JOB NAME: Vehicle Fueling Positions: 12
JOB NUMBER:

WEEKDAY

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	13	--	230.52	125.67	355.60	14	10	24.0	50%	50%
AM PEAK OF GENERATOR	18	--	21.30	9.00	49.31	14	10	24.0	50%	50%
PM PEAK OF GENERATOR	19	--	20.25	9.83	37.42	14	10	24.0	50%	50%
AM PEAK (ADJACENT ST)	39	--	28.08	5.40	49.31	14	10	24.0	50%	50%
PM PEAK (ADJACENT ST)	48	--	22.96	8.75	44.83	14	10	24.0	50%	50%

TRIPS:

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	2,766	1,383	1,383	N/A	N/A	N/A
AM PEAK OF GENERATOR	256	128	128	N/A	N/A	N/A
PM PEAK OF GENERATOR	243	122	122	N/A	N/A	N/A
AM PEAK (ADJACENT ST)	337	168	168	N/A	N/A	N/A
PM PEAK (ADJACENT ST)	276	138	138	N/A	N/A	N/A

SATURDAY

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	1	--	291.67	291.67	291.67	12	12	12	50%	50%
PEAK OF GENERATOR	13	--	23.26	9.80	39.50	14	10	16.0	50%	50%

TRIPS:

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	N/A	N/A	N/A	N/A	N/A	N/A
PEAK OF GENERATOR	279	140	140	N/A	N/A	N/A

SUNDAY

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	--	--	--	--	--	--	--	--	--	--
PEAK OF GENERATOR	--	--	--	--	--	--	--	--	--	--

TRIPS:

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	N/A	N/A	N/A	N/A	N/A	N/A
PEAK OF GENERATOR	N/A	N/A	N/A	N/A	N/A	N/A

Appendix C – Intersection Capacity Analysis

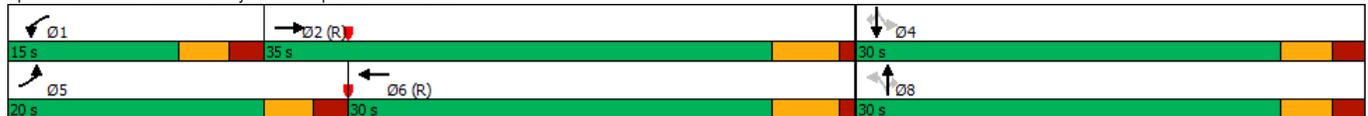


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	206	583	6	54	383	0	9	71	244	147	50	348
Future Volume (vph)	206	583	6	54	383	0	9	71	244	147	50	348
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	190		0	175		0	0		0	0		300
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25		25			25			25
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		52			52			32			32	
Link Distance (ft)		380			1008			234			589	
Travel Time (s)		5.0			13.2			5.0			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	224	641	0	59	416	0	0	87	265	0	214	378
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases								8	8	4		4
Detector Phase	5	2		1	6			8	8	4		4
Switch Phase												
Minimum Initial (s)	6.0	8.0		6.0	8.0		6.0	6.0	6.0	6.0		6.0
Minimum Split (s)	11.0	13.0		11.0	13.0		11.0	11.0	11.0	11.0		11.0
Total Split (s)	20.0	35.0		15.0	30.0		30.0	30.0	30.0	30.0		30.0
Total Split (%)	25.0%	43.8%		18.8%	37.5%		37.5%	37.5%	37.5%	37.5%		37.5%
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0		3.0
All-Red Time (s)	2.0	1.0		2.0	1.0		2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0		5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Min		None	C-Min		None	None	None	None		None
v/c Ratio	0.75	0.33		0.36	0.53		0.22	0.48	0.72	0.59		0.72
Control Delay	47.3	13.1		39.5	23.0		24.6	6.1	41.3	6.6		41.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Total Delay	47.3	13.1		39.5	23.0		24.6	6.1	41.3	6.6		41.3
Queue Length 50th (ft)	106	98		28	156		35	0	99	0		99
Queue Length 95th (ft)	#194	173		62	284		64	51	153	59		153
Internal Link Dist (ft)		300			928		154		509			509
Turn Bay Length (ft)	190			175								300
Base Capacity (vph)	339	1948		221	783		557	676	421	754		421
Starvation Cap Reductn	0	0		0	0		0	0	0	0		0
Spillback Cap Reductn	0	0		0	0		0	0	0	0		0
Storage Cap Reductn	0	0		0	0		0	0	0	0		0
Reduced v/c Ratio	0.66	0.33		0.27	0.53		0.16	0.39	0.51	0.50		0.50

Intersection Summary

Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Sailor Way/I-295 Ramps & Plainfield Pike





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↕	↗	↘	↕	↗	↘	↕	↗	↘	↕	↗
Traffic Volume (vph)	206	583	6	54	383	0	9	71	244	147	50	348
Future Volume (vph)	206	583	6	54	383	0	9	71	244	147	50	348
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00		0.96	1.00
Satd. Flow (prot)	1770	3533		1770	1863			1852	1583		1796	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.96	1.00		0.72	1.00
Satd. Flow (perm)	1770	3533		1770	1863			1782	1583		1349	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	224	634	7	59	416	0	10	77	265	160	54	378
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	206	0	0	294
Lane Group Flow (vph)	224	640	0	59	416	0	0	87	59	0	214	84
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	13.6	42.1		5.1	33.6			17.8	17.8		17.8	17.8
Effective Green, g (s)	13.6	42.1		5.1	33.6			17.8	17.8		17.8	17.8
Actuated g/C Ratio	0.17	0.53		0.06	0.42			0.22	0.22		0.22	0.22
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Vehicle Extension (s)	2.1	2.8		2.1	2.8			2.4	2.4		2.4	2.4
Lane Grp Cap (vph)	300	1859		112	782			396	352		300	352
v/s Ratio Prot	c0.13	0.18		0.03	c0.22							
v/s Ratio Perm								0.05	0.04		c0.16	0.05
v/c Ratio	0.75	0.34		0.53	0.53			0.22	0.17		0.71	0.24
Uniform Delay, d1	31.6	11.0		36.3	17.3			25.4	25.1		28.7	25.5
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	8.7	0.5		2.3	2.6			0.2	0.1		7.1	0.2
Delay (s)	40.3	11.5		38.6	19.9			25.6	25.3		35.9	25.8
Level of Service	D	B		D	B			C	C		D	C
Approach Delay (s)		18.9			22.2			25.3			29.4	
Approach LOS		B			C			C			C	
Intersection Summary												
HCM 2000 Control Delay		23.3										C
HCM 2000 Volume to Capacity ratio		0.63										
Actuated Cycle Length (s)		80.0			Sum of lost time (s)				15.0			
Intersection Capacity Utilization		61.5%			ICU Level of Service							B
Analysis Period (min)		15										

c Critical Lane Group

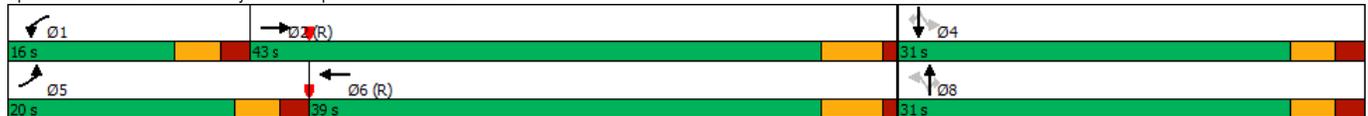


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	188	691	11	40	497	0	6	65	175	261	33	572
Future Volume (vph)	188	691	11	40	497	0	6	65	175	261	33	572
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	190		0	175		0	0		0	0		300
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		52			52			32			32	
Link Distance (ft)		380			1008			234			589	
Travel Time (s)		5.0			13.2			5.0			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	204	763	0	43	540	0	0	78	190	0	320	622
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases								8	8	4		4
Detector Phase	5	2		1	6			8	8	4		4
Switch Phase												
Minimum Initial (s)	6.0	8.0		6.0	8.0		6.0	6.0	6.0	6.0		6.0
Minimum Split (s)	11.0	13.0		11.0	13.0		11.0	11.0	11.0	11.0		11.0
Total Split (s)	20.0	43.0		16.0	39.0		31.0	31.0	31.0	31.0		31.0
Total Split (%)	22.2%	47.8%		17.8%	43.3%		34.4%	34.4%	34.4%	34.4%		34.4%
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0		3.0
All-Red Time (s)	2.0	1.0		2.0	1.0		2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0		5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Min		None	C-Min		None	None	None	None		None
v/c Ratio	0.78	0.41		0.31	0.72		0.15	0.33	0.33	0.33		0.88
Control Delay	56.9	15.6		44.4	30.5		24.5	5.5	5.5	5.5		23.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Total Delay	56.9	15.6		44.4	30.5		24.5	5.5	5.5	5.5		23.9
Queue Length 50th (ft)	110	157		24	278		31	0	0	0		118
Queue Length 95th (ft)	#204	208		55	#393		67	48	48	48		#334
Internal Link Dist (ft)		300			928			154				509
Turn Bay Length (ft)	190			175								300
Base Capacity (vph)	295	1840		216	760		531	601	601	601		744
Starvation Cap Reductn	0	0		0	0		0	0	0	0		0
Spillback Cap Reductn	0	0		0	0		0	0	0	0		0
Storage Cap Reductn	0	0		0	0		0	0	0	0		0
Reduced v/c Ratio	0.69	0.41		0.20	0.71		0.15	0.32	0.32	0.32		0.84

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Sailor Way/I-295 Ramps & Plainfield Pike





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗		↘	↗			↗	↘		↗	↘
Traffic Volume (vph)	188	691	11	40	497	0	6	65	175	261	33	572
Future Volume (vph)	188	691	11	40	497	0	6	65	175	261	33	572
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		0.96	1.00
Satd. Flow (prot)	1770	3531		1770	1863			1854	1583		1784	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.97	1.00		0.69	1.00
Satd. Flow (perm)	1770	3531		1770	1863			1799	1583		1294	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	204	751	12	43	540	0	7	71	190	284	36	622
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	136	0	0	282
Lane Group Flow (vph)	204	762	0	43	540	0	0	78	54	0	320	340
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	13.4	44.8		4.8	36.2			25.4	25.4		25.4	25.4
Effective Green, g (s)	13.4	44.8		4.8	36.2			25.4	25.4		25.4	25.4
Actuated g/C Ratio	0.15	0.50		0.05	0.40			0.28	0.28		0.28	0.28
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Vehicle Extension (s)	2.1	2.8		2.1	2.8			2.4	2.4		2.4	2.4
Lane Grp Cap (vph)	263	1757		94	749			507	446		365	446
v/s Ratio Prot	c0.12	0.22		0.02	c0.29							
v/s Ratio Perm								0.04	0.03		c0.25	0.21
v/c Ratio	0.78	0.43		0.46	0.72			0.15	0.12		0.88	0.76
Uniform Delay, d1	36.9	14.5		41.3	22.6			24.2	24.0		30.8	29.5
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	12.4	0.8		1.5	5.9			0.1	0.1		20.1	7.1
Delay (s)	49.2	15.3		42.9	28.6			24.3	24.1		50.9	36.7
Level of Service	D	B		D	C			C	C		D	D
Approach Delay (s)		22.4			29.6			24.2			41.5	
Approach LOS		C			C			C			D	
Intersection Summary												
HCM 2000 Control Delay			30.6			HCM 2000 Level of Service					C	
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)					15.0	
Intersection Capacity Utilization			79.1%			ICU Level of Service					D	
Analysis Period (min)			15									

c Critical Lane Group

3: Sailor Way/I-295 Ramps & Plainfield Pike

Timing Plan: Peak AM

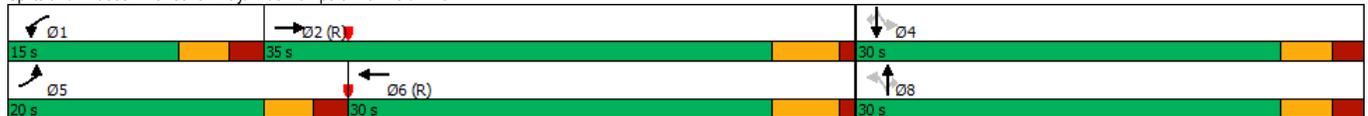


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗	↘	↖	↖			↖	↖		↖	↖
Traffic Volume (vph)	211	598	6	55	393	0	9	73	250	151	51	357
Future Volume (vph)	211	598	6	55	393	0	9	73	250	151	51	357
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	190		0	175		0	0		0	0		300
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		52			52			32			32	
Link Distance (ft)		380			1008			234			589	
Travel Time (s)		5.0			13.2			5.0			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	229	657	0	60	427	0	0	89	272	0	219	388
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases								8	8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	6.0	8.0		6.0	8.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	13.0		11.0	13.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	20.0	35.0		15.0	30.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	25.0%	43.8%		18.8%	37.5%		37.5%	37.5%	37.5%	37.5%	37.5%	37.5%
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	1.0		2.0	1.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	None
v/c Ratio	0.75	0.34		0.36	0.55		0.22	0.48	0.72	0.59		
Control Delay	47.5	13.4		39.7	23.8		24.5	6.1	41.7	6.6		
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		
Total Delay	47.5	13.4		39.7	23.8		24.5	6.1	41.7	6.6		
Queue Length 50th (ft)	108	102		29	164		36	0	101	0		
Queue Length 95th (ft)	#201	178		63	#300		66	51	157	59		
Internal Link Dist (ft)		300			928		154			509		
Turn Bay Length (ft)	190			175								300
Base Capacity (vph)	341	1937		221	773		557	681	420	761		
Starvation Cap Reductn	0	0		0	0		0	0	0	0		
Spillback Cap Reductn	0	0		0	0		0	0	0	0		
Storage Cap Reductn	0	0		0	0		0	0	0	0		
Reduced v/c Ratio	0.67	0.34		0.27	0.55		0.16	0.40	0.52	0.51		

Intersection Summary

Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Sailor Way/I-295 Ramps & Plainfield Pike



3: Sailor Way/I-295 Ramps & Plainfield Pike

Timing Plan: Peak AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗	↘	↘	↗	↘	↘	↗	↗	↘	↗	↗
Traffic Volume (vph)	211	598	6	55	393	0	9	73	250	151	51	357
Future Volume (vph)	211	598	6	55	393	0	9	73	250	151	51	357
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00		0.96	1.00
Satd. Flow (prot)	1770	3534		1770	1863			1852	1583		1796	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.96	1.00		0.72	1.00
Satd. Flow (perm)	1770	3534		1770	1863			1783	1583		1346	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	229	650	7	60	427	0	10	79	272	164	55	388
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	211	0	0	301
Lane Group Flow (vph)	229	657	0	60	427	0	0	89	61	0	219	87
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	13.8	41.9		5.1	33.2			18.0	18.0		18.0	18.0
Effective Green, g (s)	13.8	41.9		5.1	33.2			18.0	18.0		18.0	18.0
Actuated g/C Ratio	0.17	0.52		0.06	0.42			0.22	0.22		0.22	0.22
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Vehicle Extension (s)	2.1	2.8		2.1	2.8			2.4	2.4		2.4	2.4
Lane Grp Cap (vph)	305	1850		112	773			401	356		302	356
v/s Ratio Prot	c0.13	0.19		0.03	c0.23							
v/s Ratio Perm								0.05	0.04		c0.16	0.06
v/c Ratio	0.75	0.35		0.54	0.55			0.22	0.17		0.73	0.25
Uniform Delay, d1	31.5	11.1		36.3	17.8			25.3	25.0		28.7	25.4
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	9.0	0.5		2.7	2.8			0.2	0.2		7.7	0.2
Delay (s)	40.5	11.7		39.0	20.6			25.5	25.1		36.4	25.7
Level of Service	D	B		D	C			C	C		D	C
Approach Delay (s)		19.1			22.9			25.2			29.5	
Approach LOS		B			C			C			C	
Intersection Summary												
HCM 2000 Control Delay		23.5										C
HCM 2000 Volume to Capacity ratio		0.64										
Actuated Cycle Length (s)		80.0							15.0			
Intersection Capacity Utilization		62.6%										B
Analysis Period (min)		15										

c Critical Lane Group

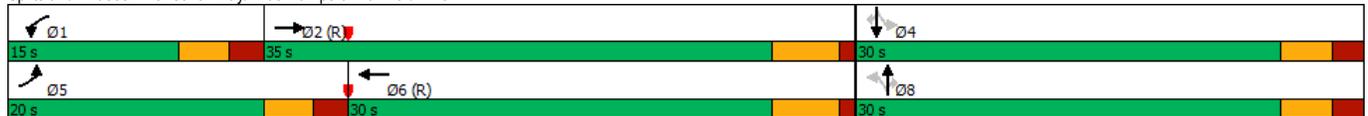


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖			↖	↖		↖	↖
Traffic Volume (vph)	222	611	6	83	391	0	90	84	268	146	77	358
Future Volume (vph)	222	611	6	83	391	0	90	84	268	146	77	358
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	175		0	0		0	0		300
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25		25			25			25
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		52			52			32			32	
Link Distance (ft)		380			1008			234			589	
Travel Time (s)		5.0			13.2			5.0			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	241	671	0	90	425	0	0	189	291	0	243	389
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases								8	8	4		4
Detector Phase	5	2		1	6			8	8	4	4	4
Switch Phase												
Minimum Initial (s)	6.0	8.0		6.0	8.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	13.0		11.0	13.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	20.0	35.0		15.0	30.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	25.0%	43.8%		18.8%	37.5%		37.5%	37.5%	37.5%	37.5%	37.5%	37.5%
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	1.0		2.0	1.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	None
v/c Ratio	0.80	0.39		0.49	0.59		0.72	0.47	0.84	0.57		
Control Delay	51.6	16.3		42.7	25.7		42.8	5.6	51.9	6.0		
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		
Total Delay	51.6	16.3		42.7	25.7		42.8	5.6	51.9	6.0		
Queue Length 50th (ft)	113	117		43	176		84	0	112	0		
Queue Length 95th (ft)	#217	182		87	#295		148	52	#204	59		
Internal Link Dist (ft)		300			928		154		509			
Turn Bay Length (ft)	250			175								300
Base Capacity (vph)	334	1713		221	726		325	694	362	762		
Starvation Cap Reductn	0	0		0	0		0	0	0	0		
Spillback Cap Reductn	0	0		0	0		0	0	0	0		
Storage Cap Reductn	0	0		0	0		0	0	0	0		
Reduced v/c Ratio	0.72	0.39		0.41	0.59		0.58	0.42	0.67	0.51		

Intersection Summary

Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Sailor Way/I-295 Ramps & Plainfield Pike





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	222	611	6	83	391	0	90	84	268	146	77	358	
Future Volume (vph)	222	611	6	83	391	0	90	84	268	146	77	358	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	1.00			1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85	
Fit Protected	0.95	1.00		0.95	1.00			0.97	1.00		0.97	1.00	
Satd. Flow (prot)	1770	3534		1770	1863			1816	1583		1804	1583	
Fit Permitted	0.95	1.00		0.95	1.00			0.56	1.00		0.62	1.00	
Satd. Flow (perm)	1770	3534		1770	1863			1041	1583		1160	1583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	241	664	7	90	425	0	98	91	291	159	84	389	
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	218	0	0	291	
Lane Group Flow (vph)	241	670	0	90	425	0	0	189	73	0	243	98	
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm	
Protected Phases	5	2		1	6			8			4		
Permitted Phases							8		8	4		4	
Actuated Green, G (s)	13.7	37.8		7.1	31.2			20.1	20.1		20.1	20.1	
Effective Green, g (s)	13.7	37.8		7.1	31.2			20.1	20.1		20.1	20.1	
Actuated g/C Ratio	0.17	0.47		0.09	0.39			0.25	0.25		0.25	0.25	
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.1	2.8		2.1	2.8			2.4	2.4		2.4	2.4	
Lane Grp Cap (vph)	303	1669		157	726			261	397		291	397	
v/s Ratio Prot	c0.14	0.19		0.05	c0.23								
v/s Ratio Perm								0.18	0.05		c0.21	0.06	
v/c Ratio	0.80	0.40		0.57	0.59			0.72	0.18		0.84	0.25	
Uniform Delay, d1	31.8	13.7		35.0	19.3			27.4	23.5		28.4	23.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2	12.7	0.7		3.3	3.4			8.8	0.1		17.9	0.2	
Delay (s)	44.5	14.5		38.3	22.7			36.2	23.7		46.3	24.1	
Level of Service	D	B		D	C			D	C		D	C	
Approach Delay (s)		22.4			25.4			28.6			32.6		
Approach LOS		C			C			C			C		
Intersection Summary													
HCM 2000 Control Delay			26.7		HCM 2000 Level of Service							C	
HCM 2000 Volume to Capacity ratio			0.71										
Actuated Cycle Length (s)			80.0		Sum of lost time (s)						15.0		
Intersection Capacity Utilization			64.6%		ICU Level of Service						C		
Analysis Period (min)			15										

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↑	↑	↑	
Traffic Volume (veh/h)	779	68	48	791	0	60
Future Volume (Veh/h)	779	68	48	791	0	60
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	847	74	52	860	0	65
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				380		
pX, platoon unblocked					0.82	
vC, conflicting volume			921		1848	884
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			921		1924	884
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		100	81
cM capacity (veh/h)			741		56	344
Direction, Lane #	EB 1	WB 1	WB 2	NB 1		
Volume Total	921	52	860	65		
Volume Left	0	52	0	0		
Volume Right	74	0	0	65		
cSH	1700	741	1700	344		
Volume to Capacity	0.54	0.07	0.51	0.19		
Queue Length 95th (ft)	0	6	0	17		
Control Delay (s)	0.0	10.2	0.0	17.9		
Lane LOS		B		C		
Approach Delay (s)	0.0	0.6		17.9		
Approach LOS				C		
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			55.5%		ICU Level of Service	B
Analysis Period (min)			15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	102	13	27	340	112	54
Future Volume (Veh/h)	102	13	27	340	112	54
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	111	14	29	370	122	59
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					234	
pX, platoon unblocked						
vC, conflicting volume	580	152	181			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	580	152	181			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	76	98	98			
cM capacity (veh/h)	467	895	1394			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	125	399	181			
Volume Left	111	29	0			
Volume Right	14	0	59			
cSH	493	1394	1700			
Volume to Capacity	0.25	0.02	0.11			
Queue Length 95th (ft)	25	2	0			
Control Delay (s)	14.8	0.7	0.0			
Lane LOS	B	A				
Approach Delay (s)	14.8	0.7	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.0			
Intersection Capacity Utilization		45.0%		ICU Level of Service	A	
Analysis Period (min)			15			

Proposed Condition AM
10: Sailor Way at Southeast Drive

Proposed Condition
Timing Plan: Peak AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Volume (veh/h)	22	0	0	0	0	0	0	345	0	0	125	0
Future Volume (Veh/h)	22	0	0	0	0	0	0	345	0	0	125	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	0	0	0	0	0	0	375	0	0	136	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											404	
pX, platoon unblocked												
vC, conflicting volume	511	511	136	511	511	375	136			375		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	511	511	136	511	511	375	136			375		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	100	100	100	100	100			100		
cM capacity (veh/h)	473	466	913	473	466	671	1448			1183		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	24	0	375	136								
Volume Left	24	0	0	0								
Volume Right	0	0	0	0								
cSH	473	1700	1448	1183								
Volume to Capacity	0.05	0.00	0.00	0.00								
Queue Length 95th (ft)	4	0	0	0								
Control Delay (s)	13.0	0.0	0.0	0.0								
Lane LOS	B	A										
Approach Delay (s)	13.0	0.0	0.0	0.0								
Approach LOS	B	A										
Intersection Summary												
Average Delay			0.6									
Intersection Capacity Utilization			28.2%								A	
Analysis Period (min)			15									

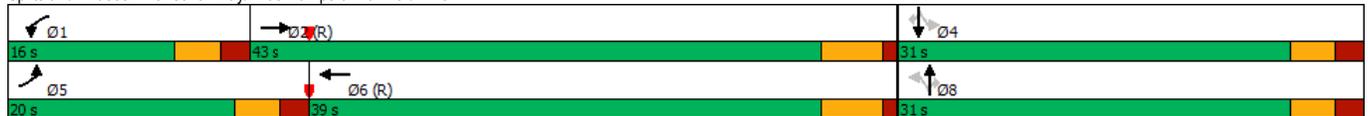


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗	↘	↖	↖			↖	↖		↖	↖
Traffic Volume (vph)	205	719	11	66	508	0	74	80	195	263	60	590
Future Volume (vph)	205	719	11	66	508	0	74	80	195	263	60	590
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	175		0	0		0	0		300
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		52			52			32			32	
Link Distance (ft)		380			1008			234			589	
Travel Time (s)		5.0			13.2			5.0			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	223	794	0	72	552	0	0	167	212	0	351	641
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases								8	8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	6.0	8.0		6.0	8.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	13.0		11.0	13.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	20.0	43.0		16.0	39.0		31.0	31.0	31.0	31.0	31.0	31.0
Total Split (%)	22.2%	47.8%		17.8%	43.3%		34.4%	34.4%	34.4%	34.4%	34.4%	34.4%
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	1.0		2.0	1.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	None
v/c Ratio	0.82	0.52		0.44	0.85		0.48	0.32	0.32	0.90	0.82	0.82
Control Delay	61.2	20.3		46.9	41.2		31.4	5.1	5.1	58.5	21.7	21.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.2	20.3		46.9	41.2		31.4	5.1	5.1	58.5	21.7	21.7
Queue Length 50th (ft)	122	168		40	284		77	0	0	195	139	139
Queue Length 95th (ft)	#230	226		80	#415		147	50	50	#384	#365	#365
Internal Link Dist (ft)		300			928		154			509		
Turn Bay Length (ft)	250			175								300
Base Capacity (vph)	295	1543		216	703		347	668	668	391	784	784
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.51		0.33	0.79		0.48	0.32	0.32	0.90	0.82	0.82

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Sailor Way/I-295 Ramps & Plainfield Pike





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↘	↕	↗	↘	↕	↗		↕	↗		↕	↗	
Traffic Volume (vph)	205	719	11	66	508	0	74	80	195	263	60	590	
Future Volume (vph)	205	719	11	66	508	0	74	80	195	263	60	590	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	1.00			1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		0.96	1.00	
Satd. Flow (prot)	1770	3531		1770	1863			1819	1583		1790	1583	
Flt Permitted	0.95	1.00		0.95	1.00			0.56	1.00		0.63	1.00	
Satd. Flow (perm)	1770	3531		1770	1863			1043	1583		1177	1583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	223	782	12	72	552	0	80	87	212	286	65	641	
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	142	0	0	258	
Lane Group Flow (vph)	223	793	0	72	552	0	0	167	70	0	351	383	
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm	
Protected Phases	5	2		1	6			8			4		
Permitted Phases							8		8	4		4	
Actuated Green, G (s)	13.8	38.0		7.1	31.3			29.9	29.9		29.9	29.9	
Effective Green, g (s)	13.8	38.0		7.1	31.3			29.9	29.9		29.9	29.9	
Actuated g/C Ratio	0.15	0.42		0.08	0.35			0.33	0.33		0.33	0.33	
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.1	2.8		2.1	2.8			2.4	2.4		2.4	2.4	
Lane Grp Cap (vph)	271	1490		139	647			346	525		391	525	
v/s Ratio Prot	c0.13	0.22		0.04	c0.30								
v/s Ratio Perm								0.16	0.04		c0.30	0.24	
v/c Ratio	0.82	0.53		0.52	0.85			0.48	0.13		0.90	0.73	
Uniform Delay, d1	36.9	19.4		39.8	27.2			23.9	21.0		28.6	26.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2	17.3	1.4		1.6	13.4			0.7	0.1		22.3	4.6	
Delay (s)	54.2	20.7		41.4	40.7			24.6	21.1		50.9	31.1	
Level of Service	D	C		D	D			C	C		D	C	
Approach Delay (s)		28.1			40.7			22.6			38.1		
Approach LOS		C			D			C			D		
Intersection Summary													
HCM 2000 Control Delay			33.3		HCM 2000 Level of Service						C		
HCM 2000 Volume to Capacity ratio			0.86										
Actuated Cycle Length (s)			90.0		Sum of lost time (s)					15.0			
Intersection Capacity Utilization			84.1%		ICU Level of Service					E			
Analysis Period (min)			15										

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↑	↑	↑	
Traffic Volume (veh/h)	881	58	43	1128	0	55
Future Volume (Veh/h)	881	58	43	1128	0	55
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	958	63	47	1226	0	60
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				380		
pX, platoon unblocked					0.72	
vC, conflicting volume			1021		2310	990
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1021		2625	990
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		100	80
cM capacity (veh/h)			680		18	299
Direction, Lane #	EB 1	WB 1	WB 2	NB 1		
Volume Total	1021	47	1226	60		
Volume Left	0	47	0	0		
Volume Right	63	0	0	60		
cSH	1700	680	1700	299		
Volume to Capacity	0.60	0.07	0.72	0.20		
Queue Length 95th (ft)	0	6	0	18		
Control Delay (s)	0.0	10.7	0.0	20.0		
Lane LOS		B		C		
Approach Delay (s)	0.0	0.4		20.0		
Approach LOS				C		
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			69.4%		ICU Level of Service	C
Analysis Period (min)			15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	90	7	20	259	86	51
Future Volume (Veh/h)	90	7	20	259	86	51
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)	98	8	22	282	93	55
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					234	
pX, platoon unblocked						
vC, conflicting volume	446	120	148			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	446	120	148			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	83	99	98			
cM capacity (veh/h)	561	931	1434			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	106	304	148			
Volume Left	98	22	0			
Volume Right	8	0	55			
cSH	578	1434	1700			
Volume to Capacity	0.18	0.02	0.09			
Queue Length 95th (ft)	17	1	0			
Control Delay (s)	12.6	0.7	0.0			
Lane LOS	B	A				
Approach Delay (s)	12.6	0.7	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			2.8			
Intersection Capacity Utilization			37.8%	ICU Level of Service	A	
Analysis Period (min)			15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Volume (veh/h)	19	0	0	0	0	0	0	260	0	0	93	0
Future Volume (Veh/h)	19	0	0	0	0	0	0	260	0	0	93	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	0	0	0	0	0	0	283	0	0	101	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											404	
pX, platoon unblocked												
vC, conflicting volume	384	384	101	384	384	283	101			283		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	384	384	101	384	384	283	101			283		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	100	100	100	100	100			100		
cM capacity (veh/h)	574	550	954	574	550	756	1491			1279		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	21	0	283	101								
Volume Left	21	0	0	0								
Volume Right	0	0	0	0								
cSH	574	1700	1491	1279								
Volume to Capacity	0.04	0.00	0.00	0.00								
Queue Length 95th (ft)	3	0	0	0								
Control Delay (s)	11.5	0.0	0.0	0.0								
Lane LOS	B	A										
Approach Delay (s)	11.5	0.0	0.0	0.0								
Approach LOS	B	A										
Intersection Summary												
Average Delay			0.6									
Intersection Capacity Utilization			23.7%							A		
ICU Level of Service												
Analysis Period (min)			15									