PLANNING & DEVELOPMENT SERVICES

July 21, 2022

Applicant Name: Lokesh Krishnan, PE; LJA Engineering
Email: tkrishnan@lja.com
CC Email: pboecher@ehrainc.com, kdoe@lja.com, jatin@maverickeng.com
Planning Case No. 22-00100002

Re: BAXI RETAIL – TIA CONCURRENCE LETTER

The City of Sugar Land has reviewed the Baxi retail Traffic Impact Analysis and concurs with the study.

Should you have any questions regarding this letter please contact me at (281) 275-2218.

Sincerely,

Eleanor Hibbs

Eleanor Hibbs
Development Review Coordinator

LJA Engineering, Inc.

3600 West Sam Houston Parkway South
Suite 600
Houston, Texas 77042
TBPE № F-1386

Phone 713.953.5200
Fax 713.953.5026
www.ljaengineering.com
TBPLS № 10110501

Memorandum

To: City of Sugar Land

From: Lokesh Krishnan, P.E.

Date: 06/14/2022

Re: Baxi Retail Development Traffic Impact Analysis

Please see below for our responses to the comments on the Baxi Retail Development on 06/10/2022 from City of Sugar Land.

- Provide the weekday count dates for US90A and University Blvd. (YA) Weekday count was provided in the TIA, January 27th, 2022 (Note, US90A and Stadium Drive is the same intersection, University Stadium Drive changes to University Blvd south of US90A).
- Above the roadway surface. (YA) Changed wording to “3 feet above the roadway surface”

Please feel free to contact me at 713.953.5053, if you have any questions.

Sincerely,

Lokesh Krishnan, P.E.

Project Manager

BAXI RETAIL DEVELOPMENT
TRAFFIC IMPACT ANALYSIS

LJA Project No. 3127-2201

Lokesh Krishnan, PE
LJA Engineering, Inc.

LJA Engineering, Inc.
Public Infrastructure Division
3600 West Sam Houston Parkway, Suite 600
Houston, Texas 77042-3703
Phone: 713.953.5200
Fax: 713.953.5183
www.ljaengineering.com
FRN-F-1386

June 2022

BAXI RETAIL DEVELOPMENT
TRAFFIC IMPACT ANALYSIS

June 14, 2022

LJA Project No. 3127-2201

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June 2022

Executive Summary

This report presents the summary of findings for the Traffic Impact Analysis (TIA) prepared by LJA Engineering, Inc. (LJA) for the proposed Baxi Retail development in Sugar Land, Texas. This development site is located east of Stadium Drive north of US 90A and south of Imperial Boulevard. The proposed development will consist of two 5,000 square feet Restaurant and 15,000 square feet Retail space. Construction for this development is expected to be completed in 2023. Therefore, the study year for this TIA is 2023. This study aims to analyze the impacts of the traffic generated by the proposed development on the performance of the surrounding street network and determine the required mitigation measures to address any resulting deficiencies.

Access to this development will be provided via two access points. Driveway 1 will be located approximately 570' south of Imperial Boulevard along Silent Manor Drive at the existing driveway stub out. Driveway 2 will be located approximately 315' south of Imperial Boulevard along Stadium Drive. The study area for this TIA includes the street network located within one mile from the proposed development's access points.

The weekday AM and PM peak hour periods and the weekend peak hour period were analyzed in this TIA. The overall proposed development is expected to add 1,935 daily vehicle trips with 134 vehicle trips during the AM peak hour period and 194 vehicle trips during the PM peak hour period. The development is expected to add 211 vehicle trips during the weekend peak hour.

An average annualized growth rate of 2% was calculated using traffic projections from the Houston-Galveston Area Council (HGAC) Travel Demand Model. The 2% growth rate was applied to the 2022 traffic volumes to determine the future traffic volumes without the proposed development generated traffic (Future No Build Conditions). The traffic that this proposed development would generate was then added to the No-Build Conditions to establish the future Build Conditions.

Right and Left Turn Lane Analyses were completed at Driveway 2 along Stadium Drive and Driveway 1 along Silent Manor Dr per the National Cooperative Highway Research Program (NCHRP) Report 457 requirements for acceleration and deceleration lanes. The turn lane analyses are provided in the Recommendations section of this report.

Intersection Capacity Analyses were completed for the major intersections within the study area. Mitigation measures for this TIA require that when the LOS without development is LOS A, B, C or D, the minimum acceptable projected LOS shall be LOS D, and when the LOS without development is LOS E or F, the minimum acceptable projected LOS shall be equal to the LOS without development.

Based on the analysis, it was determined that the adjacent roadway network will accommodate the generated trips for the Baxi Retail development therefore, no mitigation will be required at any of the intersections within the study area. While no mitigation was identified to accommodate the development, there is a proposed median opening at Driveway 1. This would allow traffic traveling from the north to the site to access the development along Stadium Drive without having to u-turn at the next median opening. The following improvements are recommended for the Baxi Retail Development:

- Stripe continental crosswalks at the proposed driveways per City of Sugar Land request.
- Restrict objects to a height of 3 feet above the roadway surface within the intersection sight distance (ISD) triangles presented in **Figure 14**.

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Introduction

This report presents the summary of findings for the Traffic Impact Analysis (TIA) prepared by LJA Engineering, Inc. (LJA) for the proposed Baxi Retail development in Sugar Land, Texas. This development site is located east of Stadium Drive north of US 90A and south of Imperial Boulevard. The proposed development will consist of two 5,000 square feet Restaurant and 15,000 square feet Retail space. Construction for this development is expected to be completed in 2023. Therefore, the study year for this TIA is 2023. This study aims to analyze the impacts of the traffic generated by the proposed development on the performance of the surrounding street network and determine the required mitigation measures to address any resulting deficiencies.

Figure 1 shows the vicinity map and the existing street network within the study area**. Appendix A** provides a preliminary site plan of the proposed development. The site plan and TIA scope was discussed with the City of Sugar Land February 10, 2022. The meeting minutes from the scoping meeting are attached in **Appendix B**.

Existing Area Conditions

The study area for this TIA includes the major intersections within the surrounding street network. Major intersections within the study area include:

1. Highway US 90A and Stadium Drive/University Boulevard (Signalized)
2. Stadium Drive and Stadium Parking Lot/Imperial Lofts (Minor-Road Stop-Controlled)
3. Stadium Drive and Imperial Boulevard (Roundabout)
4. Imperial Boulevard and Silent Manor Drive (Minor-Road Stop-Controlled)

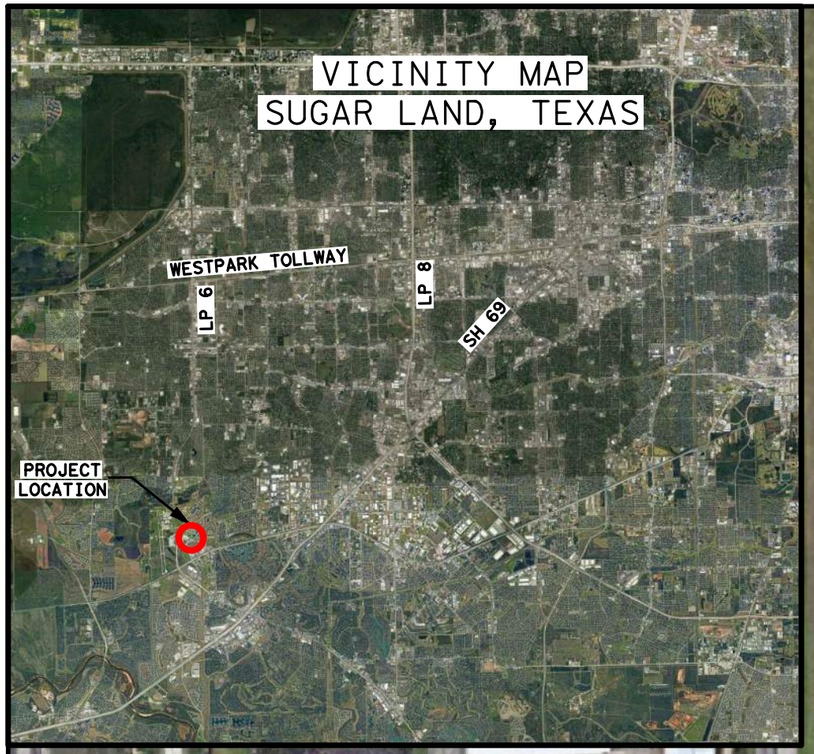
Within the study area, Highway US 90A is an eight-lane divided roadway that runs in an east-west direction with a posted speed limit of 50 mph. Stadium Drive is a four-lane divided roadway and a major collector that runs in a north-south divided roadway with a posted speed limit of 35 mph between US 90A and the stadium bridge, and a posted speed limit of 30 mph north of the bridge. Imperial Boulevard is a four-lane divided roadway and a major collector that runs in an east-west direction with a posted speed limit of 30 mph. Existing Lane configurations and traffic control features at all study intersections are presented in **Figure 2**.

Turning Movement Counts (TMCs) were collected for the study area intersections for the AM (7:15-8:15AM), PM (5:00-6:00PM) and Saturday (1:00-2:00PM) peaks. Counts were collected on August 10th, 2021, August 7th ,2021, January 27th, 2022 and February 19th, 2022. For Highway US 90A and Stadium Drive/University Boulevard, the City of Sugar Lands Power BI database was used to determine TMCs for the intersections for January 27th (Weekday) and February 19th (Weekend), 2022. **Figure 3** shows the 2022 existing AM and PM traffic volumes, and **Figure 4** shows the weekend peak traffic volumes.

An average annualized growth rate of 2% was calculated using traffic projections from the Houston-Galveston Area Council (HGAC) Travel Demand Model. The 2% growth rate was applied to the 2022 traffic volumes to determine the future traffic volumes without the proposed development generated traffic (Future No Build Conditions). The traffic that this proposed development would generate was then added to the No-Build Conditions to establish the future Build Conditions. Collected traffic counts are presented in **Appendix C.**

Proposed Area Conditions

Access to this development will be provided via two access points. Driveway 1 will be located approximately 570’ south of Imperial Boulevard along Silent Manor Drive at the existing driveway stub out. Driveway 2 will be located approximately 315’ south of Imperial Boulevard along Stadium Drive. The study area for this TIA includes the street network located within one mile from the proposed development’s access points.



BAXI RETAIL TIA

FIGURE 1

STUDY AREA CONDITIONS

LJA Engineering, Inc.
FRN - F-1386

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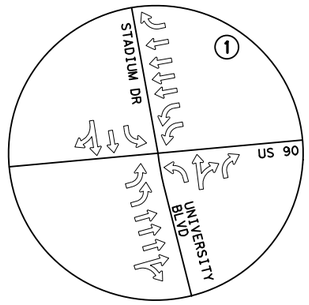

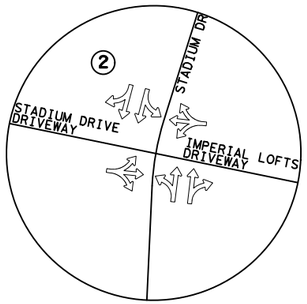

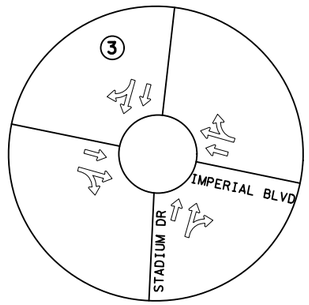

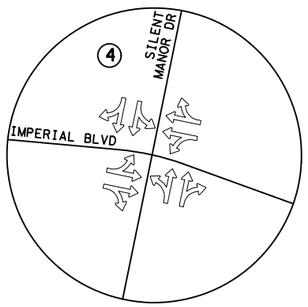

LEGEND

- PROPOSED DEVELOPMENT
- SIGNALIZED INTERSECTION
- STOP CONTROLLED INTERSECTION
- DIRECTION OF TRAFFIC

BAXI RETAIL TIA

FIGURE 2

EXISTING LANE CONFIGURATIONS

LJA Engineering, Inc.
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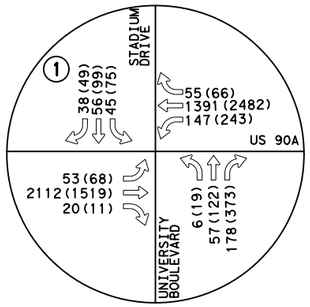

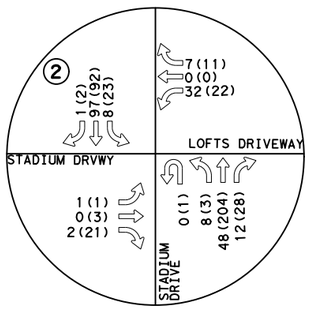

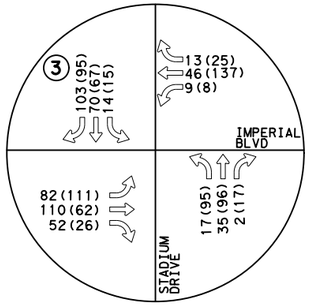

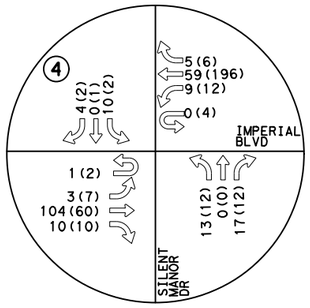

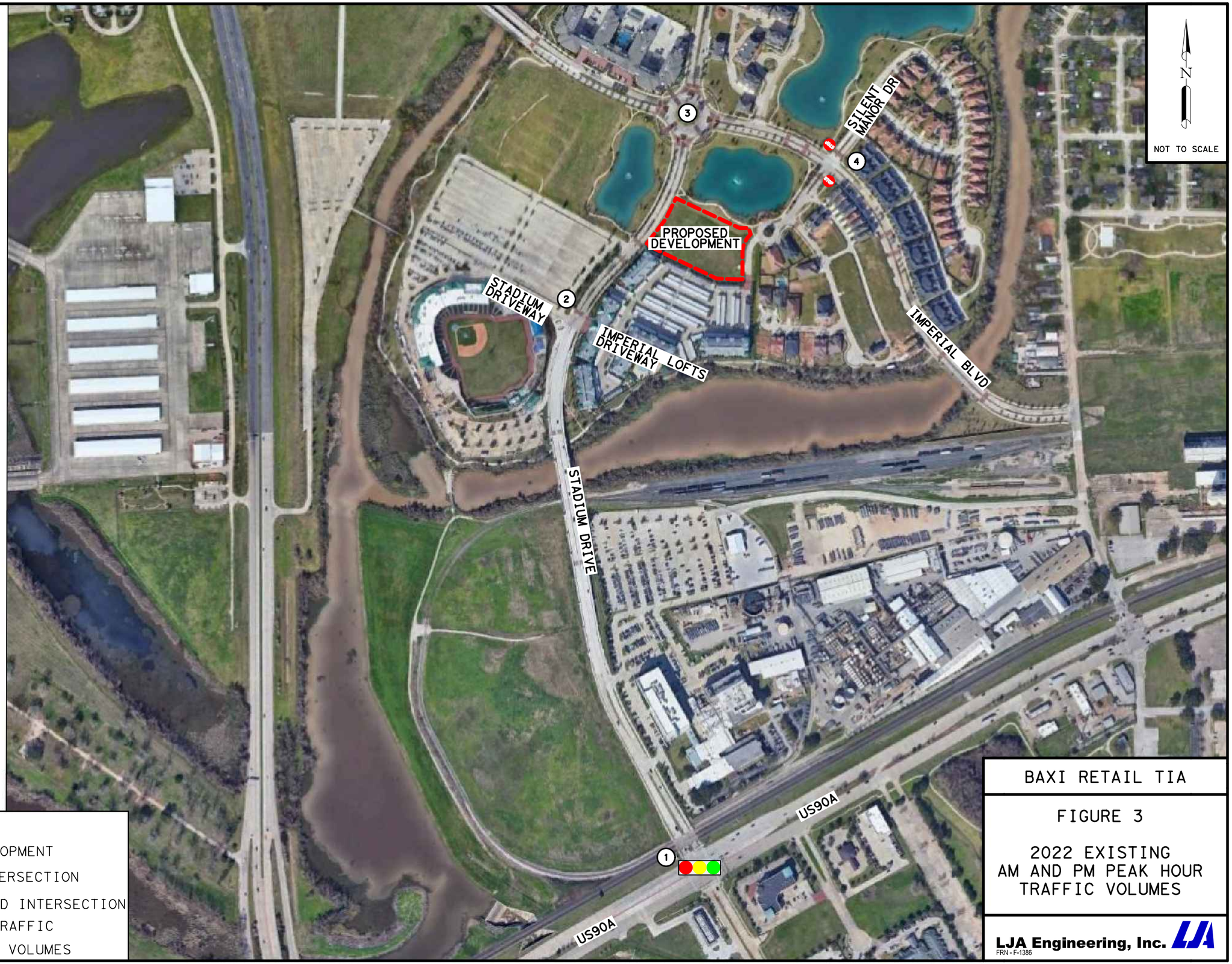

LEGEND

- PROPOSED DEVELOPMENT
- SIGNALIZED INTERSECTION
- STOP CONTROLLED INTERSECTION
- DIRECTION OF TRAFFIC
- XX (XX) AM (PM) TRAFFIC VOLUMES

$$$$$$SYSTIME$$$$$$ $DATE$
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BAXI RETAIL TIA

FIGURE 3

2022 EXISTING
AM AND PM PEAK HOUR
TRAFFIC VOLUMES

LJA Engineering, Inc.
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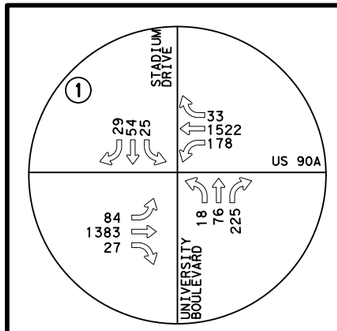

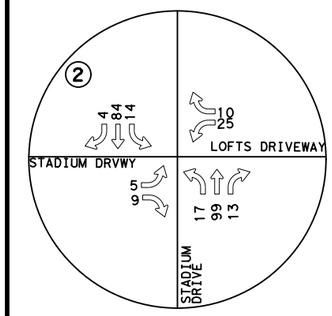

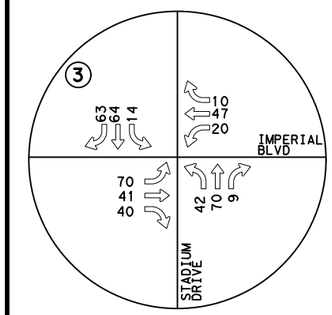

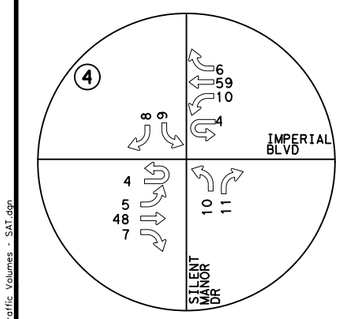

LEGEND

- PROPOSED DEVELOPMENT
- SIGNALIZED INTERSECTION
- STOP CONTROLLED INTERSECTION
- DIRECTION OF TRAFFIC
- XX AM(PM) TRAFFIC VOLUMES

BAXI RETAIL TIA

FIGURE 4

2022 EXISTING SATURDAY PEAK HOUR TRAFFIC VOLUMES

LJA Engineering, Inc.
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J:\3127\220\REPORT\2. Exhibits\1. CAD\Figure 4- Existing Traffic Volumes - SAT.dgn

Methodology

In order to evaluate the traffic impacts of the proposed development on the surrounding street network, future traffic conditions were analyzed without (No Build) and with (Build) the development's generated traffic. After the future Build Conditions were analyzed, mitigation measures were established in order to address any resulting deficiencies in the performance of the surrounding street network. The AM and PM peak hours were analyzed for each of the Existing, No Build, and Build scenarios. A total of 9 scenarios were analyzed for this study:

- 2022 Existing AM Conditions
- 2022 Existing PM Conditions
- 2022 Existing SAT Conditions
- 2023 No Build AM Conditions
- 2023 No Build PM Conditions
- 2023 No Build SAT Conditions
- 2023 Build AM Conditions
- 2023 Build PM Conditions
- 2023 Build SAT Conditions

Traffic Growth

An average annualized growth rate of two percent was calculated by comparing the 2021 projected traffic volumes to the projected 2045 traffic volumes in the Houston-Galveston Council (HGAC) Travel Demand Models. The growth rate was applied to the 2022 traffic volumes in order to determine the future traffic volumes without the proposed development generated traffic (Future No Build Conditions). The traffic that would be generated by this proposed development was then added to the No Build Conditions to establish the future Build Conditions. **Figure 5** shows the future AM and PM No Build traffic volumes and **Figure 6** shows the future weekend No Build traffic volumes for year 2023.

Trip Generation

The amount of traffic a proposed development will generate depends on a number of factors including the nature, size, and location of the proposed development. The Trip Generation Manual, 11th Edition which is published by the Institute of Transportation Engineers (ITE) is a compilation of trip generation studies, which have been performed at various sites throughout the United States. Standard engineering practice dictates the use of this manual to determine the amount of entering and exiting traffic a proposed development will generate during the peak hours of traffic by using rates or equations provided in the manual for various types of developments. **Table 1** shows the amount of traffic which will be generated by this proposed development. Trip generation calculations are presented in **Appendix D**.

Table 1: Peak Vehicle Trips Generated by the Proposed Development

Land Use	ITE	Daily Trips (vpd)			AM Peak Trips (vph)			PM Peak Trips (vph)			SAT Peak Trips (vph)		
	Code	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Shopping Center – 15,000 Sq. Ft.	822	431	432	863	23	15	38	52	52	104	50	49	99
Restaurant – 5,000 Sq. Ft	932	268	268	536	26	22	48	27	18	45	29	27	56
Restaurant – 5,000 Sq. Ft.	932	268	268	536	26	22	48	27	18	45	29	27	56
Total		**967**	**968**	**1,935**	**75**	**59**	**134**	**106**	**88**	**194**	**107**	**104**	**211**

The overall proposed development is expected to add 1,935 daily vehicle trips with 134 vehicle trips during the AM peak hour period, 194 vehicle trips during the PM peak hour period and 211 vehicle trips during the Saturday peak hour. Note, AM trips are dependent on the hours the proposed restaurants will be open. To remain conservative, the analysis assumes the restaurants will be open during the AM Peak hours. These traffic volumes were distributed to the surrounding roadway network according to the existing travel patterns within the study area (Refer to the Trip Distribution and Assignment section of this report for generated vehicle percentages and volumes).

Trip Distribution and Assignment

The proposed development's peak hour trips were distributed to the entrances and exits of the surrounding roadway network based on the existing traffic patterns within the study area. According to the routes that provide the shortest travel distance to their corresponding origins/destinations, generated traffic volumes were assigned to the study street network. Vehicle distribution and assignment percentages are presented in **Figure 7 and 8.** Generated traffic volumes are presented in **Figure 9 and 10**. Generated traffic volumes were then added to the No Build traffic volumes to determine the future 2023 Build traffic volumes. **Figures 11 and 12** show the total AM/PM peak and Weekend traffic volumes projected within the study area following the completion of this development. Note, the volumes provided in Figure 11 and 12 differ from the graphical volumes shown in the Synchro files, since Synchro does not include the trips generated by the Synchro TIA module in the graphical portion of the program. To compare the volumes, the combined volume or future volume from the Synchro report must be used.

Internal Capture

Internal Capture only applies to certain types of developments. These developments are presented in the Trip Generation Manual (Volume 1 of 3), 11th Edition, published by the Institute of Transportation Engineers (ITE). Internal Capture did not apply to this type of development and was not considered in this analysis.

Pass-by Reduction

A Pass-By Reduction factor may reduce the total external trips of the generated traffic to account for the projected traffic already traveling along the roadways adjacent to the proposed development. Pass-by Reduction methodologies are established by the Institute of Transportation Engineers (ITE) and only apply to certain development types. Pass-by Reduction did not apply to this type of development and was not considered in this analysis.

Modal Split

This study assumed that a portion of the restaurant land use trips would be pedestrian trips. These trips would originate from the nearby housing in the area. A 5% modal shift was assumed for the proposed development. **Table 2** provides a summary of the pedestrian generation.

Table 2: Pedestrian Trips Generated by the Proposed Development													
Land Use	**ITE**	**Daily Trips (vpd)**			**AM Peak Trips (vph)**			**PM Peak Trips (vph)**			**SAT Peak Trips (vph)**		
	Code	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Shopping Center – 15,000 Sq. Ft.	822	22	22	44	1	1	2	3	3	6	3	2	5
Restaurant – 5,000 Sq. Ft	932	13	13	26	1	1	2	1	1	2	1	1	2
Restaurant – 5,000 Sq. Ft.	932	13	13	26	1	1	2	1	1	2	1	1	2
Total		**48**	**48**	**96**	**3**	**3**	**6**	**5**	**5**	**10**	**5**	**4**	**9**

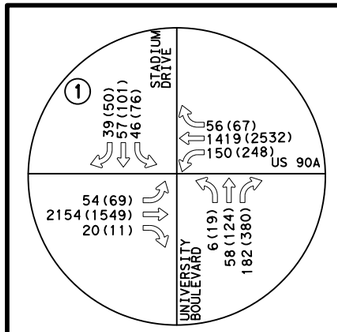
The proposed development is expected to add 96 daily pedestrian trips with 6 AM peak hour pedestrian trips, 10 PM peak hour pedestrian trips and 9 Saturday peak hour pedestrians. **Table 3** provides the adjusted Vehicle Trip Generation table to reflect the pedestrian shift.

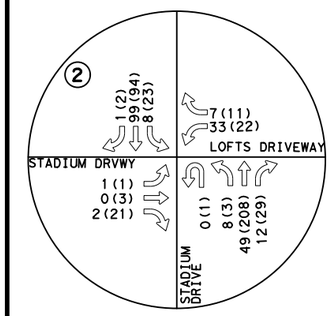
Table 3: Peak Vehicle Trips Generated by the Proposed Development - Adjusted													
Land Use	**ITE**	**Daily Trips (vpd)**			**AM Peak Trips (vph)**			**PM Peak Trips (vph)**			**SAT Peak Trips (vph)**		
	Code	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Shopping Center – 15,000 Sq. Ft.	822	409	410	819	22	14	36	49	49	98	47	47	94
Restaurant – 5,000 Sq. Ft	932	255	255	510	25	21	46	26	17	43	28	26	54
Restaurant – 5,000 Sq. Ft.	932	255	255	510	25	21	46	26	17	43	28	26	54
Total		**919**	**910**	**1,839**	**72**	**56**	**128**	**101**	**83**	**184**	**103**	**99**	**202**

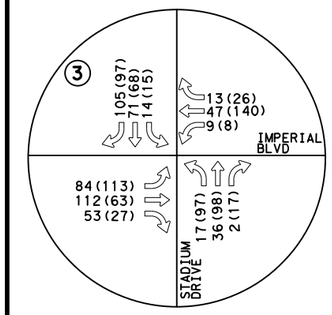
The overall adjusted vehicle trips for the proposed development are expected to be 1,839 daily vehicle trips with 128 vehicle trips during the AM peak hour period, 184 vehicle trips during the PM peak hour period and 202 vehicle trips during the Saturday peak hour period.

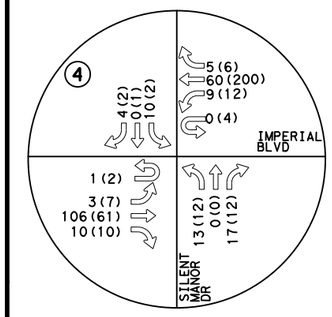
The pedestrian volumes generated by the development were determined to be low with a maximum of 10 pedestrian trips during the PM Peak hour. While the typical pedestrian volume is expected to be low, the nearby stadium is expected to generate higher pedestrian traffic between the stadium and nearby

residential. In order to accommodate the potential event pedestrian traffic, continental crosswalks are recommended on the at Driveway 2 along Stadium Drive.









LEGEND

- PROPOSED DEVELOPMENT
- SIGNALIZED INTERSECTION
- STOP CONTROLLED INTERSECTION
- DIRECTION OF TRAFFIC
- XX (XX) AM (PM) TRAFFIC VOLUMES

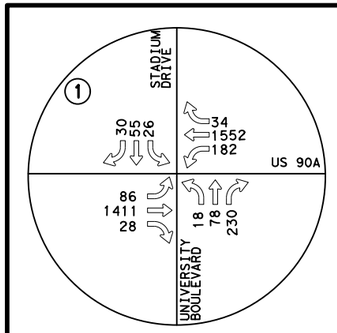
BAXI RETAIL TIA

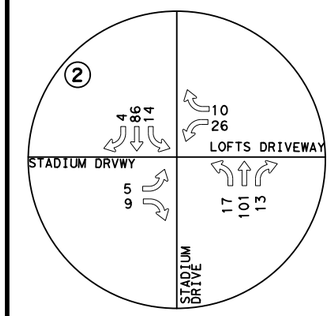
FIGURE 5

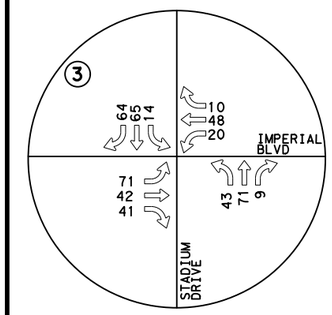
2023 NO BUILD
AM AND PM PEAK HOUR
TRAFFIC VOLUMES

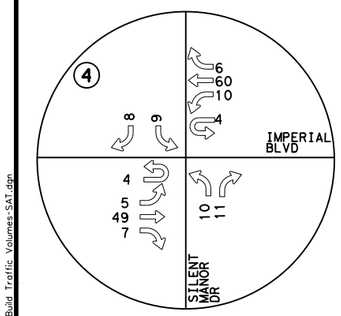
LJA Engineering, Inc.
FRN - F-1386

$$$$$SYSTIME$$$$$ $DATE$
$$$$$DGNSPECIFICATION$$$$$









LEGEND

- PROPOSED DEVELOPMENT
- SIGNALIZED INTERSECTION
- STOP CONTROLLED INTERSECTION
- DIRECTION OF TRAFFIC
- XX PEAK TRAFFIC VOLUMES

BAXI RETAIL TIA

FIGURE 6

2023 NO BUILD
SATURDAY PEAK HOUR
TRAFFIC VOLUMES

LJA Engineering, Inc.
FRN - F-1386

6/1/2022
11:20:32 AM
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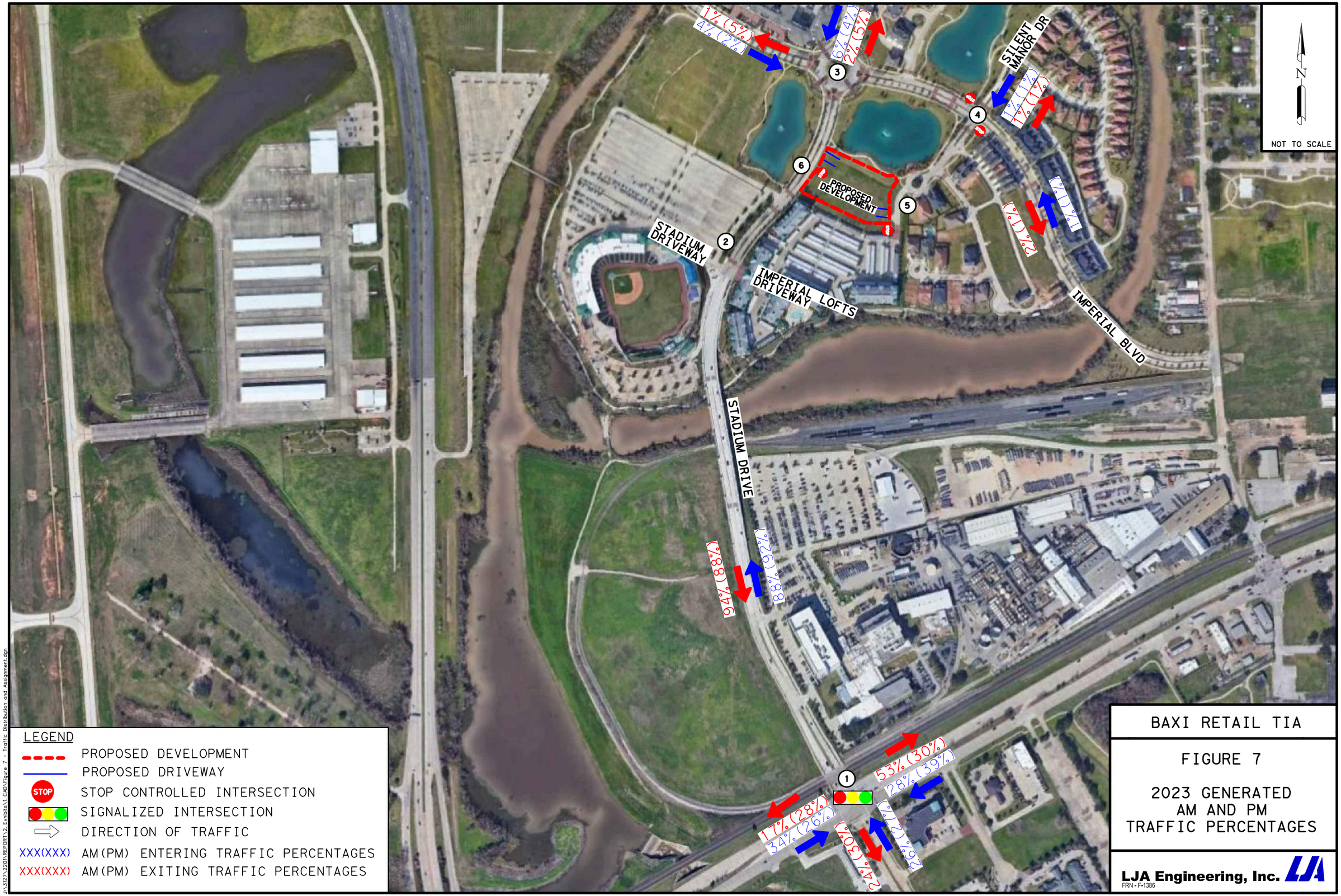
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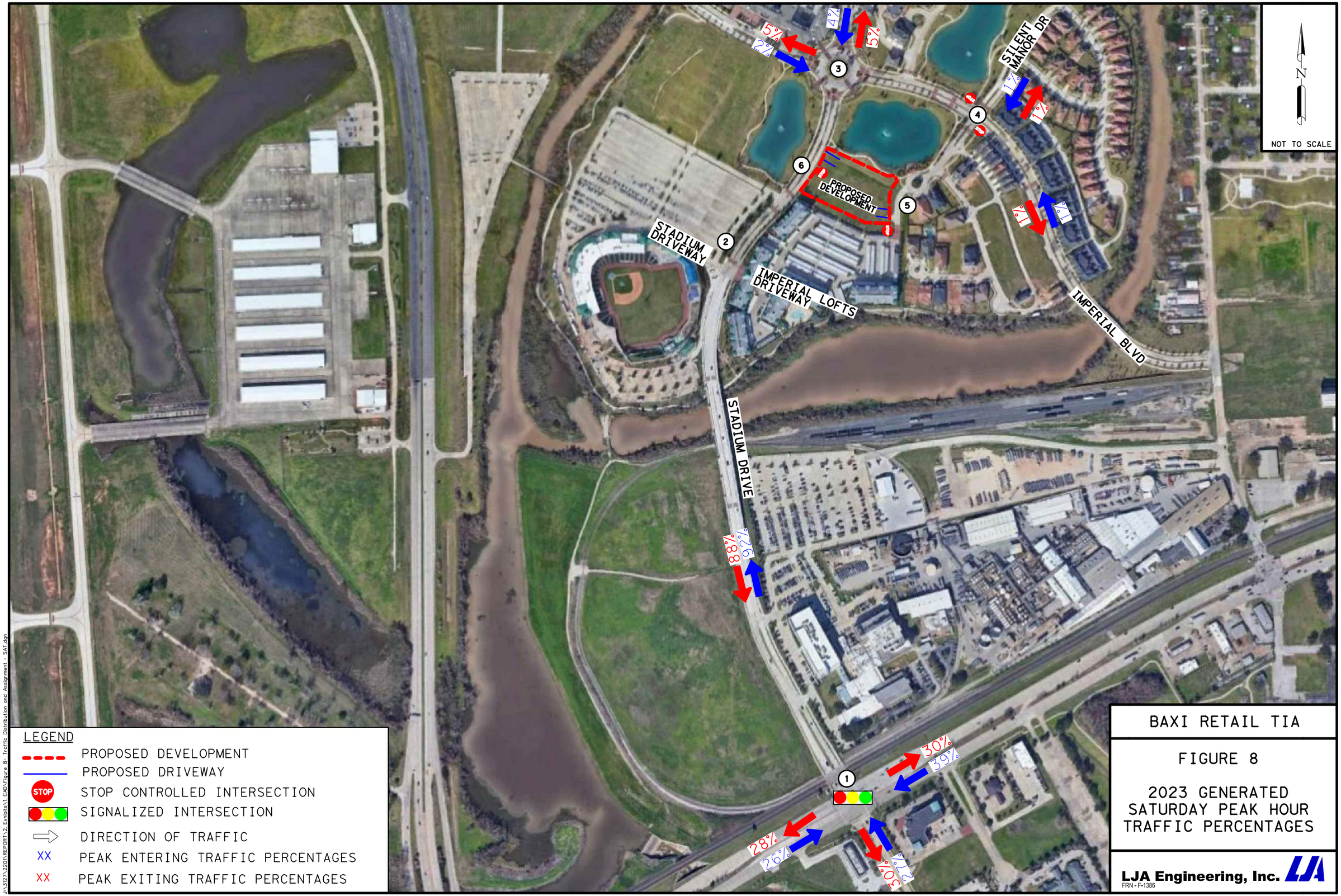
1% (1%)
1% (1%)
2% (1%)
PROPOSED DEVELOPMENT
STADIUM DRIVEWAY
IMPERIAL DRIVEWAY
LOFTS
IMPERIAL BLVD
STADIUM DRIVE
94% (88%)
88% (92%)
NOT TO SCALE
1
2
3
4
5
6
53% (30%)
28% (39%)
17% (28%)
34% (26%)
1% (2%)
24% (30%)
LEGEND
PROPOSED DEVELOPMENT
PROPOSED DRIVEWAY
STOP CONTROLLED INTERSECTION
SIGNALIZED INTERSECTION
DIRECTION OF TRAFFIC
XXX(XXX) AM(PM) ENTERING TRAFFIC PERCENTAGES
XXX(XXX) AM(PM) EXITING TRAFFIC PERCENTAGES
BAXI RETAIL TIA
FIGURE 7
2023 GENERATED AM AND PM TRAFFIC PERCENTAGES
LJA Engineering, Inc.
FRN - F-1386
6/1/2022
11:20:33 AM
J:\3127\220\REPORT\2 Exhibits\1 CAD\Figure 7 - Traffic Distribution and Assignment.dgn



LEGEND

- PROPOSED DEVELOPMENT
- PROPOSED DRIVEWAY
- STOP CONTROLLED INTERSECTION
- SIGNALIZED INTERSECTION
- DIRECTION OF TRAFFIC
- XX PEAK ENTERING TRAFFIC PERCENTAGES
- XX PEAK EXITING TRAFFIC PERCENTAGES

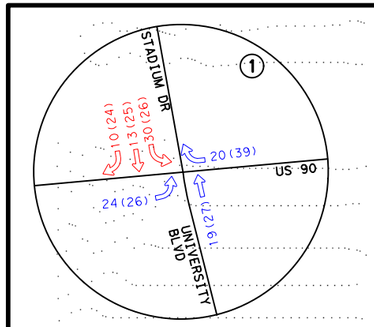
BAXI RETAIL TIA

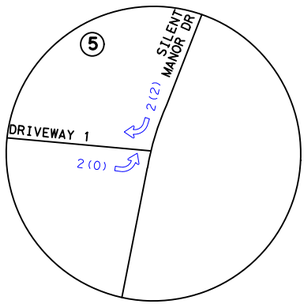
FIGURE 8

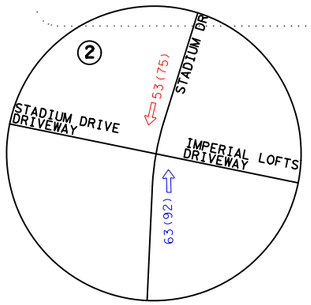
2023 GENERATED SATURDAY PEAK HOUR TRAFFIC PERCENTAGES

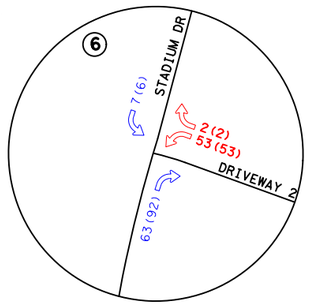
LJA Engineering, Inc.
FRN - F-1386

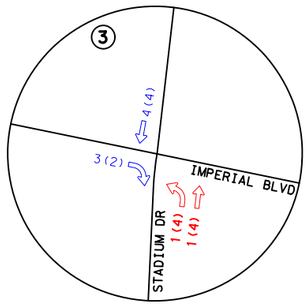
11:20:34 AM 6/1/2022
J:\312Y\220\REPORT\2. Exhibits\1 CAD\Figure 8- Traffic Distribution and Assignment - SAT.dgn

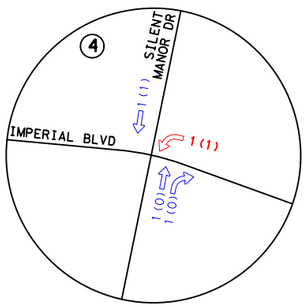












LEGEND

- PROPOSED DEVELOPMENT
- PROPOSED DRIVEWAY
- SIGNALIZED INTERSECTION
- STOP CONTROLLED INTERSECTION
- DIRECTION OF TRAFFIC
- XXX(XXX) AM(PM) ENTERING TRAFFIC VOLUMES
- XXX(XXX) AM(PM) EXITING TRAFFIC VOLUMES

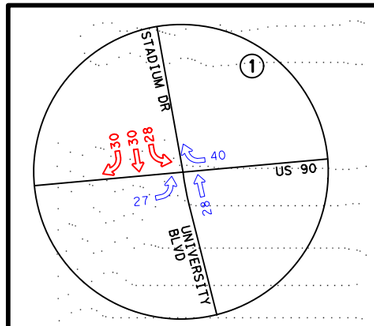
BAXI RETAIL TIA

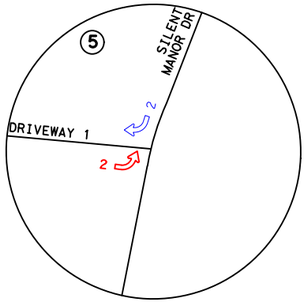
FIGURE 9

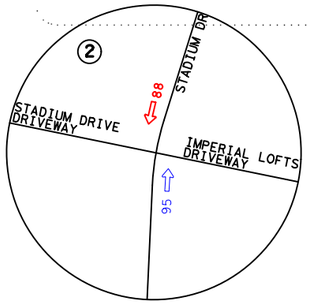
2023 GENERATED AM AND PM TRAFFIC VOLUMES

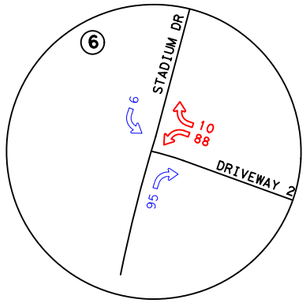
LJA Engineering, Inc.
FRN - F-1386

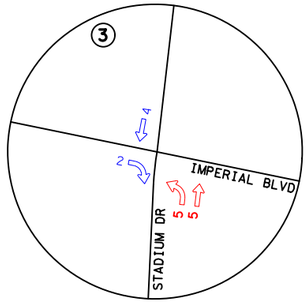
6/1/2022 11:20:35 AM J:\3127\220\REPORT\2. Exhibits\1. CAD\Figure 9- 2023 Generated Traffic.dgn

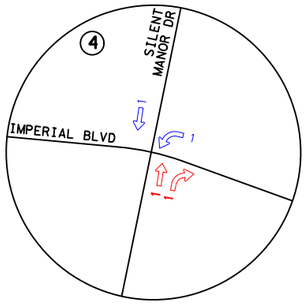












N

NOT TO SCALE

LEGEND

- PROPOSED DEVELOPMENT
- PROPOSED DRIVEWAY
- STOP CONTROLLED INTERSECTION
- DIRECTION OF TRAFFIC
- XX PEAK ENTERING TRAFFIC VOLUMES
- XX PEAK EXITING TRAFFIC VOLUMES

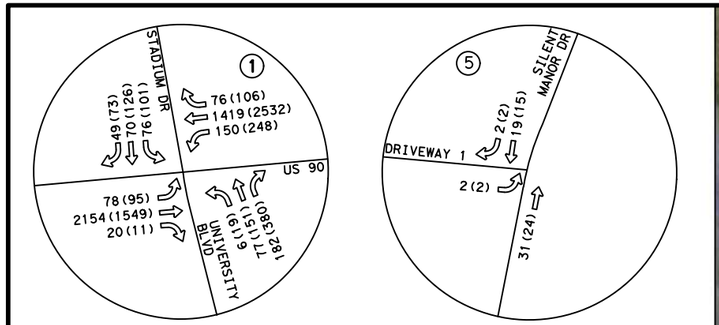
BAXI RETAIL TIA

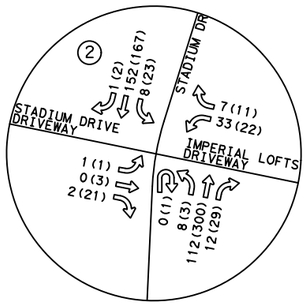
FIGURE 10

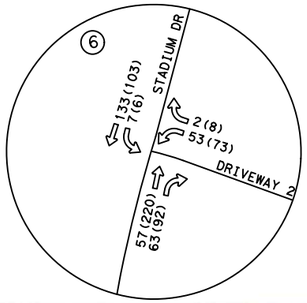
2023 GENERATED SATURDAY PEAK HOUR TRAFFIC VOLUMES

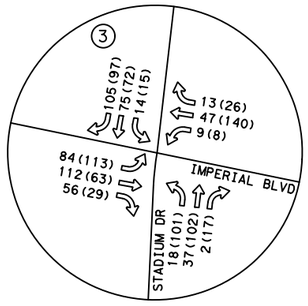
LJA Engineering, Inc.
FRN - F-1386

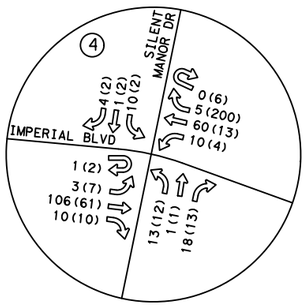
6/1/2022 11:20:36 AM J:\3127\220\REPORT\2. Exhibits\1. CAD\Figure 10- 2023 Generated Traffic - SAT.dgn











LEGEND

- PROPOSED DEVELOPMENT
- PROPOSED DRIVEWAY
- STOP CONTROLLED INTERSECTION
- SIGNALIZED INTERSECTION
- DIRECTION OF TRAFFIC
- XX(XX) AM(PM) TRAFFIC VOLUMES

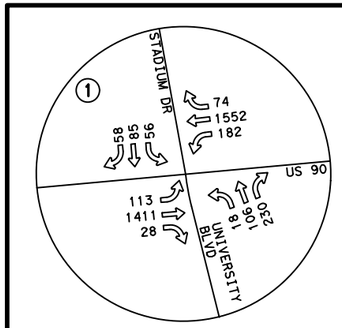
BAXI RETAIL TIA

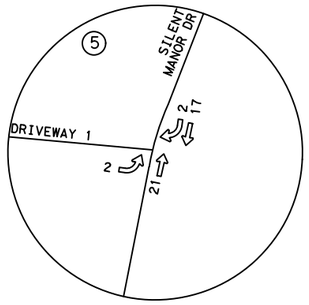
FIGURE 11

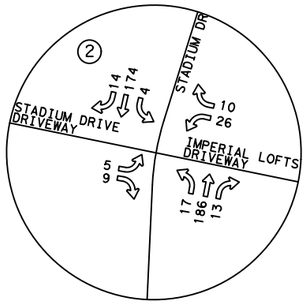
2023 BUILD
AM AND PM
TRAFFIC VOLUMES

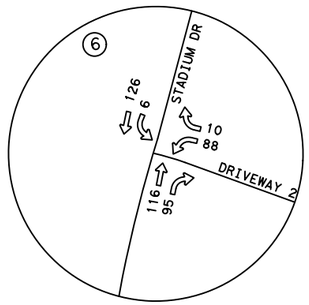
LJA Engineering, Inc.
FRN - F-1386

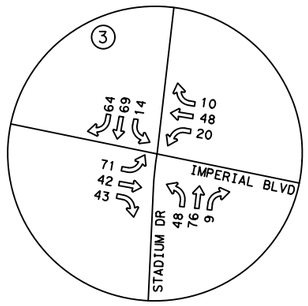
7/12/2022 11:15:54 AM J:\3127\220\REPORT\2. Exhibits\1. CAD\Figure 11- 2023 Build Traffic Volumes.dgn

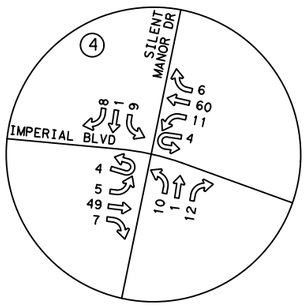












LEGEND

- PROPOSED DEVELOPMENT
- PROPOSED DRIVEWAY
- STOP CONTROLLED INTERSECTION
- SIGNALIZED INTERSECTION
- DIRECTION OF TRAFFIC
- XX PEAK TRAFFIC VOLUMES

BAXI RETAIL TIA

FIGURE 12

2023 BUILD
SATURDAY PEAK HOUR
TRAFFIC VOLUMES

LJA Engineering, Inc.
FRN - F-1386

6/1/2022
11:20:38 AM
...\3127\220\REPORT\2. Exhibits\1. CAD\Figure 12- 2023 Build Traffic Volumes - SAT.dgn

Intersection Capacity Analysis

The Highway Capacity Manual, 6th Edition (HCM) provides procedures used to evaluate the operations of all types of transportation facilities, including both signalized and unsignalized intersections. These procedures require the input of the intersection geometrics, operational characteristics, and traffic volumes to determine the maximum capacity the intersection can handle and calculate the amount of average delay a driver will experience as they travel through the intersection. Following these procedures, a Level of Service (LOS) is given to each of the controlled movements at an intersection based on the average amount of control delay drivers experience traveling through the intersection. Control delay is the delay experienced by drivers due to a traffic control device (such as a stop sign, a yield sign, or a traffic signal). It includes the time associated with drivers slowing down as they approach the intersection, the delay associated with traveling through the intersection in the desired direction, as well as the time it takes drivers to accelerate back to their desired speed. There are six Levels of Service assigned to a controlled movement at an intersection (A through F). Generally, a LOS D or better is considered acceptable. LOS E represents a condition where the demand volume approaches the maximum capacity for a particular movement or the intersection in general, and a LOS F represents a condition where the demand volume exceeds the capacity.

For signalized intersections and all-way stop-controlled intersections, a LOS is calculated for each lane group at the intersection. An overall LOS is also calculated by aggregating the delays at the intersection weighted by the traffic volumes. For one-way and two-way stop-controlled intersections, an overall LOS is not defined. A LOS is only calculated for the movements controlled with a stop sign, a yield sign, or a left-turning traffic that must yield to the opposing conflicting traffic at the intersection. **Table 4** shows the criteria for each of the levels of service as listed in the HCM for intersections and intersection lane groups for both unsignalized and signalized intersections. Complete Capacity Analyses output files are presented in **Appendix F**.

Table 4: Level of Service Criteria for Intersections and Intersection Lane Groups

Level of Service	Average Amount of Control Delay (sec/veh)	
	Unsignalized Intersections	Signalized Intersections
A	0 – 10	0 – 10
B	10 – 15	10 – 20
C	15 – 25	20 – 35
D	25 – 35	35 – 55
E	35 – 50	55 – 80
F	> 50	> 80

Highway US 90A and Stadium Drive/University Boulevard

The intersection of US 90A and Stadium Drive/University Boulevard is signalized intersection. The eastbound approach consists of two left turn lane, three through lanes and one shared through/right turn lanes. The southbound approach consists of one left turn lane, one through lane and one shared through/right turn lane. The westbound approach consists of two left turn lanes, four through lanes and one right turn lane. The northbound approach consists of one left turn lane, one shared through/right turn lane and one right turn lane. **Table 5** provides the summary of the MOEs at this intersection for the peak hours.

Table 5: Summary of MOEs at Highway 90A & Stadium Dr - Delay(sec)/LOS					
Roadway	**Highway 90A**		**Stadium Dr**		**Intersection**
Lane Group	**EB**	**WB**	**NB**	**SB**	
2022 Existing AM	36.0/D	26.1/C	44.2/D	42.6/D	32.8/C
2022 Existing PM	21.5/C	39.5/D	**452.9/F**	**61.8/E**	**77.4/E**
2023 No Build AM	37.2/D	26.2/C	44.3/D	42.6/D	33.5/D
2023 No Build PM	21.4/C	40.4/D	**470.8/F**	**62.3/E**	**79.6/E**
2023 Build AM	37.4/D	26.7/C	47.5/D	45.0/D	34.3/D
2023 Build PM	20.7/D	45.0/D	**>500/F**	**67.7/E**	**93.3/F**
Weekend					
2022 Existing Saturday	27.6/C	31.6/C	**99.0/F**	47.3/D	36.6/D
2023 No Build Saturday	28.8/C	31.9/C	**100.3/F**	46.8/D	37.1/D
2023 Build Saturday	27.5/C	30.3/C	**160.1/F**	48.9/D	36.6/D

The intersection is expected to operate at unacceptable levels of operation in all scenarios on multiple approaches. Since various approaches at the signal are operating at LOS F in the existing conditions and No Build conditions, the signal is not operating at unacceptable levels due to the proposed development. Signal timings can be optimized to improve the overall operations; however, no mitigation is recommended due to the development.

Stadium Drive and Stadium Parking Lot/Imperial Lofts

The intersection of Stadium Drive with the Stadium Parking Lot and Imperial Lofts is a minor-road stop-controlled intersection with stop control at the Stadium Parking Lot and Imperial Lofts. The eastbound approach to this intersection consists of one shared left/right turn lane. The southbound approach consists of one shared left/through lane and one shared through/right lane. The westbound approach consists of one shared left/right turn lane. The northbound approach consists of one shared left/through lane and one shared through/right turn lane. **Table 6** provides the summary of the MOEs at this intersection for the peak hours.

Table 6: Summary of MOEs at Stadium Dr & Stadium Driveway/Imperial Lofts Driveway				
Roadway	**Stadium Dr**		**Stadium Driveway/Imperial Lofts Driveway**	
Lane Group	**NB**	**SB**	**EB**	**WB**
2022 Existing AM	0.6/A	0.6/A	9.0/A	9.6/B
2022 Existing PM	0.1/A	1.6/A	9.2/A	11.0/B
2023 No Build AM	0.9/A	0.5/A	9.0/A	9.6/B
2023 No Build PM	0.1/A	1.6/A	9.2/A	11/B
2023 Build AM	0.5/A	0.4/A	9.3/A	10.4/B
2023 Build PM	0.1/A	1.1/A	9.7/A	12.5/B
Weekend				
2022 Existing Saturday	1.0/A	1.0/A	9.2/A	10/B
2023 No Build Saturday	1.0/A	1.0/A	9.2/A	10.1/B
2023 Build Saturday	0.6/A	0.6/A	9.9/A	11.4/B

The HCM 6th edition does not provide procedures to calculate the overall intersection LOS for minor-road stop-controlled intersections, and therefore, an overall intersection LOS is not defined for this intersection. All corresponding intersection movements are expected to operate at acceptable levels once the proposed development is completed; therefore, mitigation will not be required at this intersection due to the LOS.

Stadium Drive and Imperial Boulevard

The intersection of Stadium Drive and Imperial Boulevard is an unsignalized roundabout. All approaches have two entering lanes. **Table 7** provides the summary of the MOEs at this intersection for the peak hours.

Table 7: Summary of MOEs at Stadium Dr & Imperial Blvd - Delay(sec)/LOS				
Roadway	**Stadium Dr**		**Imperial Blvd**	
Lane Group	**EB**	**WB**	**NB**	**SB**
2022 Existing AM	4.2/A	3.4/A	3.8/A	3.5/A
2022 Existing PM	4.1/A	5/A	4.9/A	4.1/A
2023 No Build AM	4.2/A	3.4/A	3.8/A	3.5/A
2023 No Build PM	4.1/A	5.1/A	4.9/A	4.1/A
2023 Build AM	4.2/A	3.5/A	3.8/A	3.5/A
2023 Build PM	4.2/A	5.1/A	5/A	4.2/A
Weekend				
2022 Existing Saturday	3.7/A	3.7/A	3.9/A	3.5/A
2023 No Build Saturday	3.7/A	3.7/A	3.9/A	3.5/A
2023 Build Saturday	3.7/A	3.8/A	4.0/A	3.5/A

All corresponding intersection movements are expected to operate at acceptable levels once the proposed development is completed; therefore, mitigation will not be required at this intersection due to the LOS.

Imperial Boulevard and Silent Manor Drive

The intersection of Imperial Boulevard with Silent Manor Drive is a minor-road stop-controlled intersection with stop control along Silent Manor Drive. The eastbound approach to this intersection consists of one shared left/through lane and one shared through/right lane. The southbound approach to this intersection consists of one shared left/through lane and one shared through/right lane. The

westbound approach to this intersection consists of one shared left/through lane and one shared through/right lane. The northbound approach to this intersection consists of one shared left/through lane and one shared through/right lane. **Table 8** provides the summary of the MOEs at this intersection for the peak hours.

Table 8: Summary of MOEs at Silent Manor Dr & Imperial Blvd - Delay(sec)/LOS				
Roadway	**Imperial Blvd**		**Silent Manor Dr**	
Lane Group	**EB**	**WB**	**NB**	**SB**
2022 Existing AM	0.3/A	0.9/A	9.2/A	9.4/A
2022 Existing PM	1.0/A	0.6/A	9.5/A	10.2/B
2023 No Build AM	0.2/A	0.9/A	9.2/A	9.4/A
2023 No Build PM	1.0/A	0.6/A	9.5/A	10.3/B
2023 Build AM	0.2/A	1.0/A	9.3/A	9.5/A
2023 Build PM	1.0/B	0.7/A	9.5/A	10.5/B
Weekend				
2022 Existing Saturday	1.1/A	1.4/A	9.0/A	9.1/A
2023 No Build Saturday	1.0/A	1.4/A	9.0/A	9.1/A
2023 Build Saturday	1.0/A	1.5/A	9.1/A	9.2/A

All corresponding intersection movements are expected to operate at acceptable levels once the proposed development is completed; therefore, mitigation will not be required at this intersection due to the LOS.

Silent Manor Drive and Driveway 1

The intersection of Silent Manor Drive and Driveway 1 is a minor-road stop-controlled intersection with stop control along Driveway 1. The eastbound approach to this intersection consists of one shared left/right lane. The southbound approach to this intersection consists of one shared through/right lane. The northbound approach to this intersection consists of one shared left/through lane. **Table 9** provides the summary of the MOEs at this intersection for the peak hours.

Table 9: Summary of MOEs at Silent Manor Dr & Driveway 1 - Delay(sec)/LOS			
Roadway	**Silent Manor Dr**		**Driveway 1**
Lane Group	**NB**	**SB**	**EB**
2023 Build AM	0/A	0/A	8.8/A
2023 Build PM	0/A	0/A	8.7/A
Weekend			
2023 Build Saturday	0/A	0/A	8.7/A

Stadium Drive and Driveway 2

The intersection of Stadium Drive and Driveway 2 is a minor-road stop-controlled intersection with stop control along Driveway 2. The westbound approach to this intersection consists of one shared left/right lane. The northbound approach to this intersection consists of one shared through/right lane. The southbound approach to this intersection consists of one shared left/through lane. **Table 10** provides the summary of the MOEs at this intersection for the peak hours.

Table 10: Summary of MOEs at Stadium Dr & Driveway 2 - Delay(sec)/LOS			
Roadway	**Driveway 2**	**Stadium Dr**	
Lane Group	**WB**	**NB**	**SB**
2023 Build AM	9.9/A	0.0/A	0.4/A
2023 Build PM	11.7/B	0.0/A	0.4/A
Weekend			
2023 Build Saturday	10.9/B	0.0/A	0.4/A

All corresponding intersection movements are expected to operate at acceptable levels once the proposed development is completed; therefore, mitigation will not be required at this intersection due to the LOS.

Right and Left Turn Lane Analyses

Right and Left Turn Lane Analyses were completed at Driveway 2 along Stadium Drive and Driveway 1 along Silent Manor Dr per the National Cooperative Highway Research Program (NCHRP) Report 457 guidelines for acceleration and deceleration lanes. The guidance provided requires the turning movements at the intersection and the speed limit. **Appendix G** provides the criteria for the turn lanes. This analysis determined that deceleration lanes were not warranted.

Median Opening Spacing Analysis

Median Opening Spacing Analysis was completed for Driveway 2 along Stadium Drive to determine if a median opening would meet criteria set in the City of Sugar Land Engineering Design Standards. Per the major thoroughfare plan, Stadium Drive is identified as a major collector (C4D). **Appendix H** provides minimum standards for opening spacing from the Engineering Design Standards.

The minimum acceptable opening spacing for the intersection of a Collector with a driveway is 250' with a 50' median opening. Therefore, the proposed driveway opening would need to be 250' north of the stadium driveway and 250' south of the Imperial Roundabout. **Figure 13** shows the proposed driveway location that would meet the minimum opening spacing criteria.

Sight Distance Analysis

Sight distance analysis was completed for Driveway 2 along Stadium Drive per the AASHTO Green Book 7th edition criteria. Case B1 (Left Turn from Stop) and Case B2 (Right Turn from Stop) were applied to the driveway. Figure 14 provides an exhibit showing the sight distance analysis. The AASHTO criteria assumes that the driver's eye is 3.5 feet above the roadway, and therefore objects taller than 3.5 feet within the sight distance triangle should be restricted to a height of 3.5 feet. However, previous sight distance analysis completed within the City of Sugar Land where requested to restrict objects to a height of 3 feet, therefore this analysis recommends restricting objects to a height of 3 feet above the roadway surface within the sight distance triangles.

NOT TO SCALE

BAXI RETAIL TIA

FIGURE 13

MEDIAN SPACING EXHIBIT

LJA Engineering, Inc.
FRN - F-1386

6/1/2022 10:12:17 AM
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BAXI RETAIL TIA

FIGURE 14

SIGHT DISTANCE EXHIBIT

LJA Engineering, Inc.

FRN - F-1386

Conclusion

The proposed Baxi Retail development is expected to be complete by the end of 2023. The site will have access located along Stadium Drive and Silent Manor Drive and will consist of retail and restaurant land uses. The analysis provided in this report determined that the adjacent roadway network will accommodate the generated trips for the Baxi Retail development. No mitigation will be required at any of the intersection within the study area as a result of MOE impacts or driveway warrants.

Recommendations

The following improvements are recommended for the Baxi Retail Development:

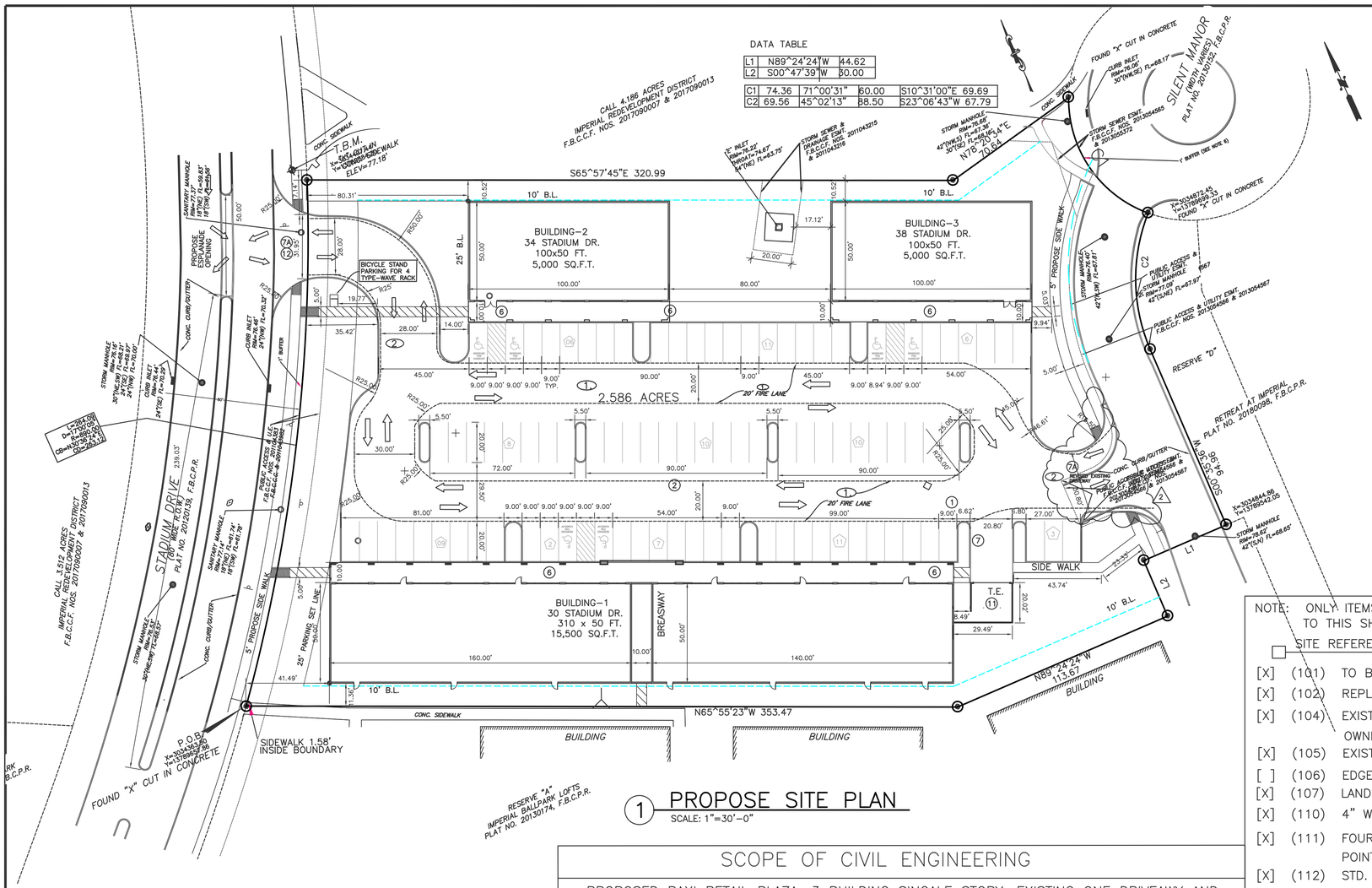
- Stripe continental crosswalks at the proposed driveways per City of Sugar Land request.
- Restrict objects to a height of 3 feet above the roadway surface within the intersection sight distance (ISD) triangles presented in **Figure 14**.

References

1. Highway Capacity Manual 6th edition, Transportation Research Board, National Research Council, Washington D.C., 2016.
2. TxDOT Access Management Manual, Texas Department of Transportation, July 2011
3. A Policy on Geometric Design of Highways and Street, 2018 7th Edition, American Association of State Highway and Transportation Officials, Washington D.C., 2018.
4. Trip Generation Manual, 2021 11th Edition, Institute of Transportation Engineers

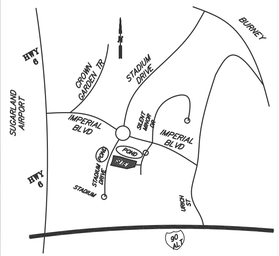
Appendix A

Proposed Site Plan



1 PROPOSE SITE PLAN
SCALE: 1"=30'-0"

PARKING ANALYSIS				
PARKING CALCULATION OF BUILDING AREA				
BUILDING TAG	USED	GROSS AREA	EXEMPT AREA	INCLUDED AREA
BUILDING #1	SHOPPING	15,158 sf	4,547 sf	10,611 sf
BUILDING #2	RESTAURANT	5,000 sf	1,500 sf	3,500 sf
BUILDING #3	RESTAURANT	5,000 sf	1,500 sf	3,500 sf
TOTAL INCLUDED AREA				17,611sf
CITY OF SUGAR LAND PARKING REQUIREMENTS SHOPPING CENTER <40,000 SF-- 1 SPACE 200SF 17,600/200 = 88 SPACE REQUIRED 83+6 HC-89 PROVIDED				
BICYCLE PARKING ANYLSIS REQUIRED-2 NO PER 120 CAR SPACES PROVIDED-92/120- 4 PARKING				



KEY MAP PAGE 568 J

VICINITY MAP NOT TO SCALE

SITE SUMMARY			
DESCRIPTION	EXISTING	PROPOSED	
LOT AREA	2.586 AC (112,646 S.F)	2.586 AC (112,646 S.F)	
FLOOR PAD AREA BUILDING -1 (S.F.) BUILDING -2 BUILDING -3	----	RETAIL SHOP- 15,500 SF RETAIL ------ 5,000 SF RETAIL ------ 5,000 SF	
SIDEWALK WITHIN PROPERTY	--------	6,411S.F	
PAVEMENT,DRV AREA	6,120 SF	42,304 S.F	
ENCLOSURE	--------	543 S.F	
IMPERVIOUS AREA INCLUDING BLDG. FOOT PRINT	6,120 SF	74,758 S.F (1.7162AC) 78.19%	TOTAL IMPERVIOUS 80,876 S.F 1.8567 AC 70.50%
LANDSCAPE AREA	0%	33,232 S.F (0.7929AC)	PERVIOUS 0.7629 AC 29.50%

LEGEND

	GRATE INLET TYPE 'A'
	JUNCTION BOX
	CATCH BASIN
	TIE UP
HP	HIGH POINT
	LIGHT POLE
	WYE CLEANOUT
	CLEAN OUT
	MITERED DRAIN
X	PARKING SPACE
	FIRE LANE

DEMOLITION NOTES:
1. EXSTING WALKWAY PARTIALY TO REMOVE (AS NEEDED) AND MATCH WITH EXISTING WALWAY
2. EXSTING DRIVEWAY TO BE REMOVE AND RECONSTRUCTED AS PROPOSED

SITE REFERENCE NOTES:

1. THE ACCESS ROADWAY AND /OR FIRE LANE SHALL BE STRIPED ON A PAVED SURFACE AND BE CLEARLY MARKED ON THE PAVEMENT WITH A 'RED' STRIPE AT LEAST FOUR (4) INCHES WIDE. "FIRE LANE. NO PARKING/ TOW AWAY ZONE" IN NOT LESS THAN FOUR (4) INCH LETTERS IN "WHITE" SHALL BE PLACED AT LESS THAN FIFTY (50) FEET ON THE STRIPE. WHERE THE FIRE LANE IS ADJACENT TO A CURB, THE ENTIRE CURB SHALL BE PAINTED. (AS PER CITY OF SUGAR LAND FIRE CODE REQUIREMENTS)

2. A LEGEND STATING "NO PARKING-FIRE LANE" PAINTED IN "YELLOW" SHALL BE PLACED AT ALL THE ENTRANCE TO THE FIRE LANE. ALL FIRE LANES SHALL CONNECT AT BOTH ENDS TO A DEDICATED STREET OR BE CONSTRUCTED WITH TURN-AROUND AREAS AT THE DEAD-END. ALL PAINT REFEREED TO SHALL BE A TRAFFIC MARKING PAINT. (AS PER CITY OF SUGAR LAND FIRE CODE REQUIREMENTS)

SCOPE OF CIVIL ENGINEERING

PROPOSED BAXI RETAIL PLAZA, 3 BUILDING SINGALE STORY, EXISTING ONE DRIVEAWY AND PROPOSED 2ND ±30 FT WIDE ALONG STADIUM DR, WITH TRASH ENCLOSURE FACILITIES. MODIFY EXISTING DRIVWAY.

NOTE: ONLY ITEMS MARKED "X" ARE IN THIS CONTRACT. REFER TO DETAIL SHEET.

SITE REFERENCE DETAILS

- [X] (1) 6" CONCRETE CURB
- [X] (1A) 6" CURB ON EXISTING PAVEMENT
- [X] (2) CONCRETE PAVEMENT
- [X] (4) DOWELED EXPANSION JOINT
- [X] (5) CONSTRUCTION JOINT
- [X] (6) CONCRETE SIDEWALK
- [ ] (7) THICKENED EDGE CONCRETE PAVEMENT
- [X] (7A) NEW CONC. PVMT. SHALL MATCH WITH EXIST. CONCRETE PVMT.
- [X] (9) MITERED DRAIN
- [X] (10) CAR PARKING BUMPER
- [X] (11) BLOCK TRASH ENCLOSURE 7'-0" HIGH MASONRY W/ PAIR OF GATES
- [X] (12) CONCRETE DRIVEWAYS, REFER CITY STD. DETAIL
- [X] (13) GUARD POST
- [X] (14) HANDICAP RAMP & PARKING SIGN
- [X] (14A) HANDICAP RAMP DETAIL
- [X] (15) PAINTED TRAFFIC ARROWS
- [X] (16) TYPE 'A' GRATE INLET
- [X] (17) JUNCTION BOX
- [X] (19) CLEAN OUT
- [X] (19A) DOUBLE CLEAN OUT
- [ ] (28) CATCH BASIN
- [ ] (33) WROUGHT IRON FENCE

NOTE: ONLY ITEMS MARKED "X" ARE IN THIS CONTRACT. REFER TO THIS SHEET.

SITE REFERENCE NOTES

- [ ] (100) TO BE CONSTRUCTED AS PER LOCAL CODES
- [X] (101) TO BE CONSTRUCTED AS PER LOCAL CODES
- [X] (102) REPLACE AND RESTORE CURB,WALKWAY ETC TO MATCH EXISTING
- [X] (104) EXISTING TO BE REMOVED AND/OR RELOCATED AS PER OWNER/ARCH. OR CITY INSTRUCTION.
- [X] (105) EXISTING TO REMAIN
- [ ] (106) EDGE OF PAVEMENT (NO CURB)
- [X] (107) LANDSCAPED AREA
- [X] (110) 4" WIDE WHITE PAINTED STRIPES
- [X] (111) FOUR (4) INCH WIDE WHITE PAINTED STRIPES ONE POINT FIVE (1.5) FEET O.C. AT FORTY-FIVE (45) DEGREES.
- [X] (112) STD. 0" TO 6" CURB TRANSITION
- [X] (115) REGULAR HANDICAP PARKING STALL WITH H.C. SIGN SEE GENERAL CONSTRUCTION NOTE AND PROCEDURES, C-31, SHEET C-1.
- [X] (116) VAN ACCESSIBLE HANDICAP PARKING STALL WITH H.C. SIGN GENERAL CONSTRUCTION NOTE AND PROCEDURES, C-31 SHEET C-1.
- [ ] (117) PROPOSED 4' WIDE BY 6' LONG BY 6" MAXIMUM GRADE DROP WHEEL CHAIR RAMP ON BOTH SIDES OF DRIVEWAY IN R.O.W. AT 1:12 MAX SLOPE.
- [X] (118) PROPOSED 5' WIDE ACCESS ROUTE FROM PUBLIC TRANSPORTATION STOPS TO BUILDING ENTRANCE (SEE SITE REFERENCE NOTE NO. 220, SHEET C-4).
- [X] (119) FOR DRIVEWAYS AND DRIVE AISLES AND FIVE (5") INCH THICK REINFORCED CONCRETE PAVEMENT FOR PARKING STALLS AND EIGHT(8") INCH THICK REINFORCED CONCRETE FOR DUMPSTER PAD LIMITS (14 FT X 32 FT), MINIMUM TWO(2) INCHES COMPACTED GRANULAR LEVELING COURSE AND OVER SIX(6) INCH THICK COMPACTED LIME STABILIZED(6% HYDRATED LIME BY DRY UNIT WEIGHT) SUB GRADE (FOR PARKING STALLS, HEAVY DUTY DRIVE AISLES, DRIVEWAY, AND DUMPSTER). PAVEMENT CONSTRUCTION MATERIALS AND PROCEDURES SHALL BE IN ACCORDANCE WITH THE TEXAS DEPARTMENT OF TRANSPORTATION (T.D.O.T.) SPECIFICATION ITEM NO. 360 LIME STABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE T.D.O.T. SPECIFICATION ITEM NO. 260 CONCRETE PAVEMENT SHALL HAVE AT LEAST 3,000 PSI CONCRETE AT 28 DAYS WITH # 4 BARS AT 24 INCH O.C.E.W. (SEE DETAIL NO.2, SHEET C-5) COMPACT TO NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY ACCORDANCE WITH THE ASTM D-698, AND IN ACCORDANCE WITH THE OTHER REQUIREMENTS CALLED OUT IN IN THE SOIL REPORTS, PROVIDED. EXPANSION JOINT AT SIXTY(60) FEET ON CENTERS EACH WAY (OR AS SHOWN ON PLANS) - DETAIL NO. 4, SHEET C-5. PROVIDE CONSTRUCTION JOINTS AS SHOWN ON PLAN OR MAX. AT TWENTY (20) FEET ON CENTER EACH WAY -DETAIL NO. 5, SHEET C-5. GENERAL CONTRACTOR TO FURNISH EXPANSION JOINTS AND CONSTRUCTION JOINTS LAYOUT TO OWNER FOR APPROVAL PRIOR TO CONSTRUCTION OF PROPOSED CONCRETE PAVEMENT IF IT VARIES FROM PLANS.

DO NOT SCALE PLANS FOR MISSING DIMENSIONS

NO.	DATE	REVISIONS:	BY

MAVERICK ENGINEERING
9730 TOWN PARK DRIVE, SUITE 111
HOUSTON, TEXAS 77036-2323
(713) 271-1941 (FAX) 271-1946
TEXAS REGISTERED ENGINEERING FIRM F-2642

BAXI RETAIL PLAZA
NEW BUILDING CONSTRUCTION
AND SITE DEVELOPMENT

PROJECT LOCATION: 30, 34, & 38 STADIUM DRIVE, SUGAR LAND, FORT BEND COUNTY, TEXAS

SEAL: STATE OF TEXAS · JATIN A. DESAI · 45447 · REGISTERED PROFESSIONAL ENGINEER

DATE:	CHECKED:
08/06/21	PHG
DRAWN:	APPROVED:
RAD	JAD

PROPOSE SITE PLAN

SHEET OF

JOB NO. H-4524-78

C78.03

FILE: 4524-78C03

Appendix B

Scoping Meeting Minutes

LJA ENGINEERING

3600 W Sam Houston Pkwy S Suite 600, Houston, Texas, 77042
t 713.953.5200 f 713.953.5026 LJA.com TBPE F-1386 TBPLS 10110501

Baxi Retail Plaza Tract Meeting Minutes

DATE: 2/10/2022

TIME: 11:30 AM-12:00 PM

11:30 AM – Meeting Start

- Growth rate will be calculated using HGAC Travel Demand Model.
- Study Area will consist of:
  - Imperial Boulevard and Stadium Drive
  - Imperial Boulevard and Silent Manor Drive
  - Imperial Lofts/Stadium Drive Driveways
  - Stadium Roundabout
  - Stadium Drive Proposed Driveway
  - Silent Manor Proposed Driveway
- Retail/Restaurant (sit-down) land use to be used for the analysis
- AM and PM weekday counts and peak hour weekend counts will be collected and analyzed.
  - Most conservative peak hour will be used.
- Warrant Analyses (NCHRP 457) for turn lanes will be completed at the proposed driveways.
- Median Opening Spacing Analysis to determine if median cut will be allowed.
  - Use Median Opening Spacings from Appendix F of the Engineering Design Standards
  - Stadium Drive is a major collector per Major Thoroughfare Plan
- Pedestrian Analysis will be completed for the development
- Synchro Models (Saved as Synchro 10) will be provided with the TIA submittal.
- City of Sugar Land will provide signal timings for Stadium and 90
- Trip Distribution based on existing trip patterns.

12:00 PM – Meeting Ended.

Attendance Sheet

Guillermo Salcedo – City of Sugar Land

Jason Vaughn – City of Sugar Land

Monique Johnson – City of Sugar Land

Yousra Al-Almuotawali – City of Sugar Land

Kyle Doe – LJA

Rajiv Desai – Maverick Engineering

Appendix C

Traffic Counts

Stadium Dr at Stadium parking lot - TMC

Tue Aug 10, 2021
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 862451, Location: 29.622937, -95.645644

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

Leg	Stadium Dr						Imperial Lofts Drwy						Stadium parking lot						Stadium Dr						
Direction	Southbound						Westbound						Northbound						Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2021-08-10 7:00AM	0	13	1	0	**14**	1	1	0	2	0	**3**	1	0	7	2	0	**9**	0	0	0	0	0	**0**	1	**26**
7:15AM	0	33	2	0	**35**	0	1	0	7	0	**8**	1	1	4	0	0	**5**	0	0	0	0	0	**0**	1	**48**
7:30AM	0	20	1	0	**21**	0	2	0	12	0	**14**	1	1	7	1	0	**9**	0	1	0	0	0	**1**	0	**45**
7:45AM	0	16	1	0	**17**	1	4	0	12	0	**16**	1	4	8	0	0	**12**	1	0	0	0	0	**0**	0	**45**
Hourly Total	0	82	5	0	**87**	2	8	0	33	0	**41**	4	6	26	3	0	**35**	1	1	0	0	0	**1**	2	**164**
8:00AM	0	21	2	0	**23**	0	1	0	9	0	**10**	1	1	9	0	0	**10**	0	1	0	1	0	**2**	0	**45**
8:15AM	0	20	2	0	**22**	1	1	0	8	0	**9**	2	1	4	0	0	**5**	0	0	0	0	0	**0**	0	**36**
8:30AM	0	22	2	0	**24**	0	3	0	6	0	**9**	0	7	17	2	0	**26**	0	0	0	0	0	**0**	0	**59**
8:45AM	1	34	2	0	**37**	0	2	0	9	0	**11**	0	3	18	6	0	**27**	0	1	0	0	0	**1**	0	**76**
Hourly Total	1	97	8	0	**106**	1	7	0	32	0	**39**	3	12	48	8	0	**68**	0	2	0	1	0	**3**	0	**216**
4:00PM	1	16	3	0	**20**	0	3	0	4	0	**7**	0	4	26	0	0	**30**	0	4	0	2	0	**6**	0	**63**
4:15PM	0	18	2	0	**20**	0	3	0	7	0	**10**	0	12	39	2	0	**53**	0	2	0	0	0	**2**	0	**85**
4:30PM	0	13	1	1	**15**	0	1	0	2	0	**3**	0	4	40	0	0	**44**	0	5	0	0	0	**5**	0	**67**
4:45PM	0	21	3	0	**24**	0	4	0	10	0	**14**	0	6	39	1	0	**46**	0	1	0	0	0	**1**	0	**85**
Hourly Total	1	68	9	1	**79**	0	11	0	23	0	**34**	0	26	144	3	0	**173**	0	12	0	2	0	**14**	0	**300**
5:00PM	0	21	3	0	**24**	0	3	0	2	0	**5**	0	2	54	0	0	**56**	0	11	1	0	0	**12**	0	**97**
5:15PM	0	24	4	0	**28**	0	2	0	3	0	**5**	0	10	41	0	1	**52**	2	6	1	1	0	**8**	0	**93**
5:30PM	2	21	10	0	**33**	0	2	0	7	0	**9**	0	8	67	0	0	**75**	1	0	1	0	0	**1**	0	**118**
5:45PM	0	26	6	0	**32**	0	4	0	10	0	**14**	0	8	42	3	0	**53**	2	4	0	0	0	**4**	0	**103**
Hourly Total	2	92	23	0	**117**	0	11	0	22	0	**33**	0	28	204	3	1	**236**	5	21	3	1	0	**25**	0	**411**
Total	4	339	45	1	**389**	3	37	0	110	0	**147**	7	72	422	17	1	**512**	6	36	3	4	0	**43**	2	**1091**
% Approach	1.0%	87.1%	11.6%	0.3%	**-**	-	25.2%	0%	74.8%	0%	**-**	-	14.1%	82.4%	3.3%	0.2%	**-**	-	83.7%	7.0%	9.3%	0%	**-**	-	**-**
% Total	0.4%	31.1%	4.1%	0.1%	**35.7%**	-	3.4%	0%	10.1%	0%	**13.5%**	-	6.6%	38.7%	1.6%	0.1%	**46.9%**	-	3.3%	0.3%	0.4%	0%	**3.9%**	-	**-**
Lights	4	338	45	1	**388**	-	37	0	108	0	**145**	-	70	420	15	1	**506**	-	34	3	3	0	**40**	-	1079
% Lights	100%	99.7%	100%	100%	**99.7%**	-	100%	0%	98.2%	0%	**98.6%**	-	97.2%	99.5%	88.2%	100%	**98.8%**	-	94.4%	100%	75.0%	0%	**93.0%**	-	98.9%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	2	0	**2**	-	2	0	0	0	**2**	-	4
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	11.8%	0%	**0.4%**	-	5.6%	0%	0%	0%	**4.7%**	-	0.4%
Buses and Single-Unit Trucks	0	1	0	0	**1**	-	0	0	2	0	**2**	-	2	2	0	0	**4**	-	0	0	1	0	**1**	-	8
% Buses and Single-Unit Trucks	0%	0.3%	0%	0%	**0.3%**	-	0%	0%	1.8%	0%	**1.4%**	-	2.8%	0.5%	0%	0%	**0.8%**	-	0%	0%	25.0%	0%	**2.3%**	-	0.7%
Pedestrians	-	-	-	-	-	3	-	-	-	-	-	6	-	-	-	-	-	6	-	-	-	-	-	2	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	85.7%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	14.3%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Stadium Dr at Stadium parking lot - TMC

Tue Aug 10, 2021
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 862451, Location: 29.622937, -95.645644

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
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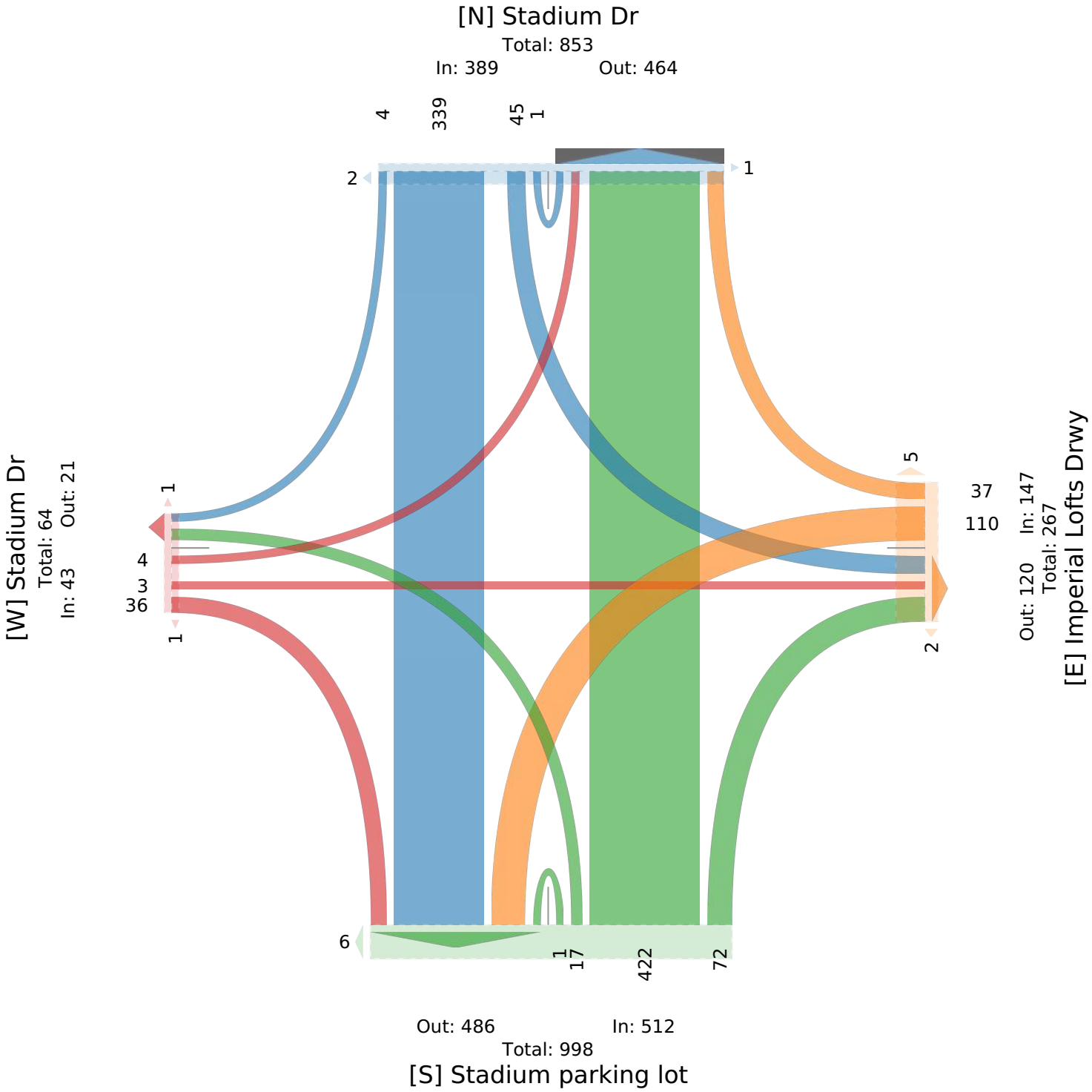


Stadium Dr at Stadium parking lot - TMC

Tue Aug 10, 2021
AM Peak (8 AM - 9 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 862451, Location: 29.622937, -95.645644

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

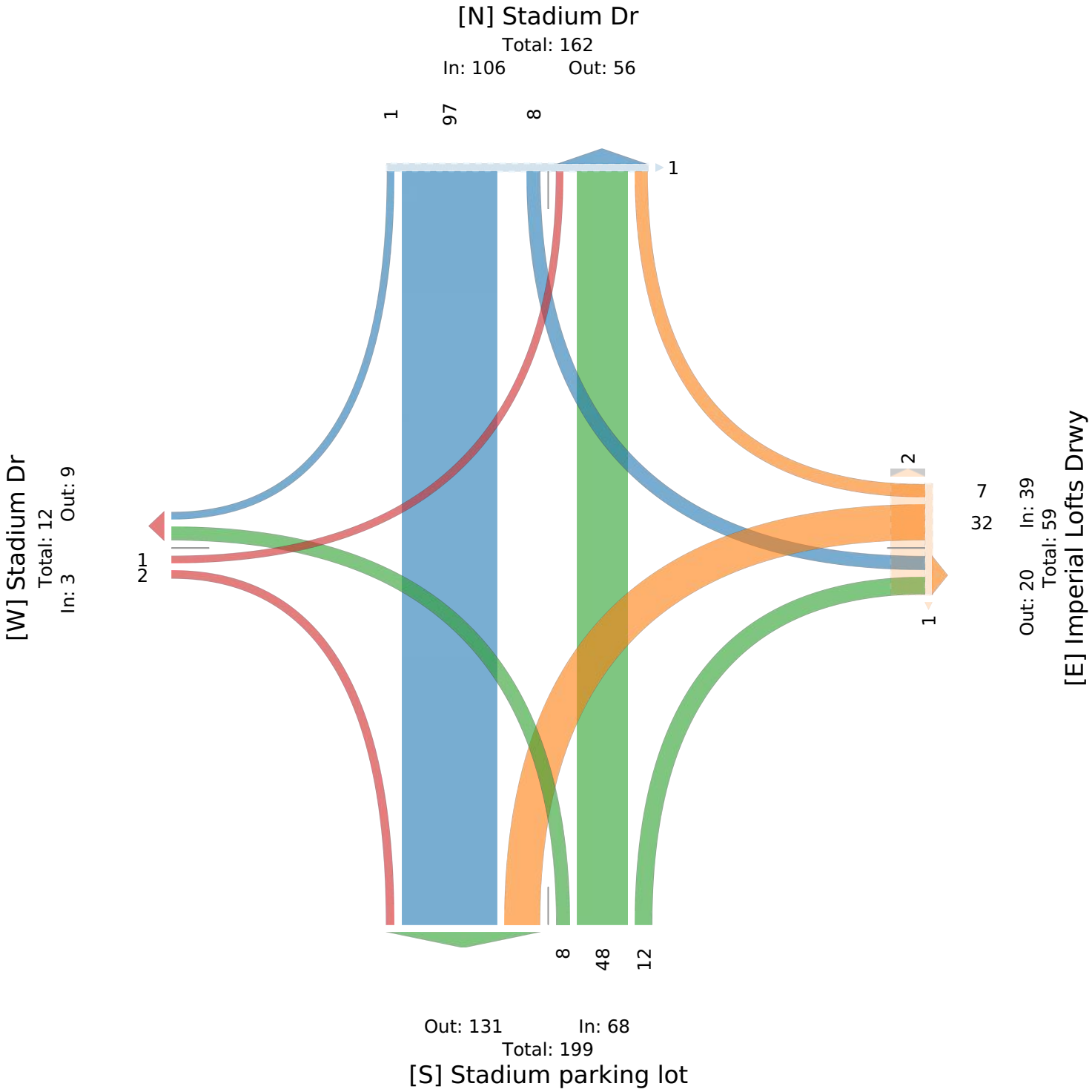
Leg / Direction	Stadium Dr Southbound						Imperial Lofts Drwy Westbound						Stadium parking lot Northbound						Stadium Dr Eastbound						
Time	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	**Int**
2021-08-10 8:00AM	0	21	2	0	**23**	0	1	0	9	0	**10**	1	1	9	0	0	**10**	0	1	0	1	0	**2**	0	**45**
8:15AM	0	20	2	0	**22**	1	1	0	8	0	**9**	2	1	4	0	0	**5**	0	0	0	0	0	**0**	0	**36**
8:30AM	0	22	2	0	**24**	0	3	0	6	0	**9**	0	7	17	2	0	**26**	0	0	0	0	0	**0**	0	**59**
8:45AM	1	34	2	0	**37**	0	2	0	9	0	**11**	0	3	18	6	0	**27**	0	1	0	0	0	**1**	0	**76**
Total	1	97	8	0	**106**	1	7	0	32	0	**39**	3	12	48	8	0	**68**	0	2	0	1	0	**3**	0	**216**
% Approach	0.9%	91.5%	7.5%	0%	**-**	-	17.9%	0%	82.1%	0%	**-**	-	17.6%	70.6%	11.8%	0%	**-**	-	66.7%	0%	33.3%	0%	**-**	-	**-**
% Total	0.5%	44.9%	3.7%	0%	**49.1%**	-	3.2%	0%	14.8%	0%	**18.1%**	-	5.6%	22.2%	3.7%	0%	**31.5%**	-	0.9%	0%	0.5%	0%	**1.4%**	-	**-**
PHF	0.250	0.713	1.000	-	**0.716**	-	0.583	-	0.889	-	**0.886**	-	0.429	0.667	0.333	-	**0.630**	-	0.500	-	0.250	-	**0.375**	-	0.711
Lights	1	97	8	0	**106**	-	7	0	32	0	**39**	-	12	48	8	0	**68**	-	1	0	0	0	**1**	-	214
% Lights	100%	100%	100%	0%	**100%**	-	100%	0%	100%	0%	**100%**	-	100%	100%	100%	0%	**100%**	-	50.0%	0%	0%	0%	**33.3%**	-	99.1%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	1	0	0	0	**1**	-	1
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	50.0%	0%	0%	0%	**33.3%**	-	0.5%
Buses and Single-Unit Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	1	0	**1**	-	1
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	100%	0%	**33.3%**	-	0.5%
Pedestrians	-	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Stadium Dr at Stadium parking lot - TMC

Tue Aug 10, 2021
AM Peak (8 AM - 9 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 862451, Location: 29.622937, -95.645644

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



Stadium Dr at Stadium parking lot - TMC

Tue Aug 10, 2021
PM Peak (5 PM - 6 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 862451, Location: 29.622937, -95.645644

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

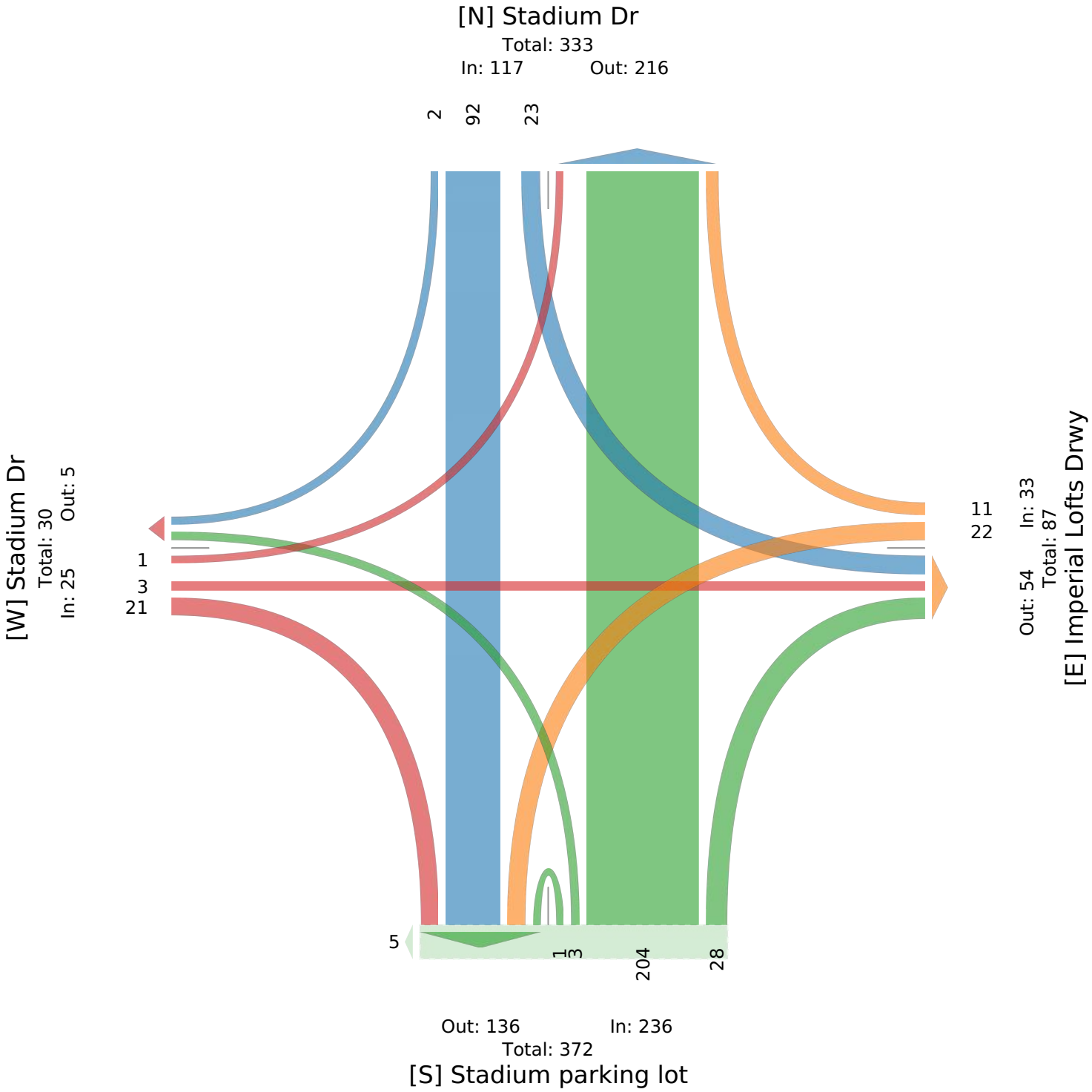
Leg	Stadium Dr						Imperial Lofts Drwy						Stadium parking lot						Stadium Dr						
Direction	Southbound						Westbound						Northbound						Eastbound						
Time	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	**Int**
2021-08-10 5:00PM	0	21	3	0	**24**	0	3	0	2	0	**5**	0	2	54	0	0	**56**	0	11	1	0	0	**12**	0	**97**
5:15PM	0	24	4	0	**28**	0	2	0	3	0	**5**	0	10	41	0	1	**52**	2	6	1	1	0	**8**	0	**93**
5:30PM	2	21	10	0	**33**	0	2	0	7	0	**9**	0	8	67	0	0	**75**	1	0	1	0	0	**1**	0	**118**
5:45PM	0	26	6	0	**32**	0	4	0	10	0	**14**	0	8	42	3	0	**53**	2	4	0	0	0	**4**	0	**103**
Total	2	92	23	0	**117**	0	11	0	22	0	**33**	0	28	204	3	1	**236**	5	21	3	1	0	**25**	0	**411**
% Approach	1.7%	78.6%	19.7%	0%	**-**	-	33.3%	0%	66.7%	0%	**-**	-	11.9%	86.4%	1.3%	0.4%	**-**	-	84.0%	12.0%	4.0%	0%	**-**	-	-
% Total	0.5%	22.4%	5.6%	0%	**28.5%**	-	2.7%	0%	5.4%	0%	**8.0%**	-	6.8%	49.6%	0.7%	0.2%	**57.4%**	-	5.1%	0.7%	0.2%	0%	**6.1%**	-	-
PHF	0.250	0.885	0.575	-	**0.886**	-	0.688	-	0.550	-	**0.589**	-	0.700	0.761	0.250	0.250	**0.787**	-	0.477	0.750	0.250	-	**0.521**	-	0.871
Lights	2	92	23	0	**117**	-	11	0	22	0	**33**	-	28	204	3	1	**236**	-	21	3	1	0	**25**	-	411
% Lights	100%	100%	100%	0%	**100%**	-	100%	0%	100%	0%	**100%**	-	100%	100%	100%	100%	**100%**	-	100%	100%	100%	0%	**100%**	-	100%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	5	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Stadium Dr at Stadium parking lot - TMC

Tue Aug 10, 2021
PM Peak (5 PM - 6 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 862451, Location: 29.622937, -95.645644

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



Stadium Dr at Stadium parking lot - SAT - TMC

Sat Aug 7, 2021
Full Length (1 PM-3 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 862455, Location: 29.622937, -95.645644

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

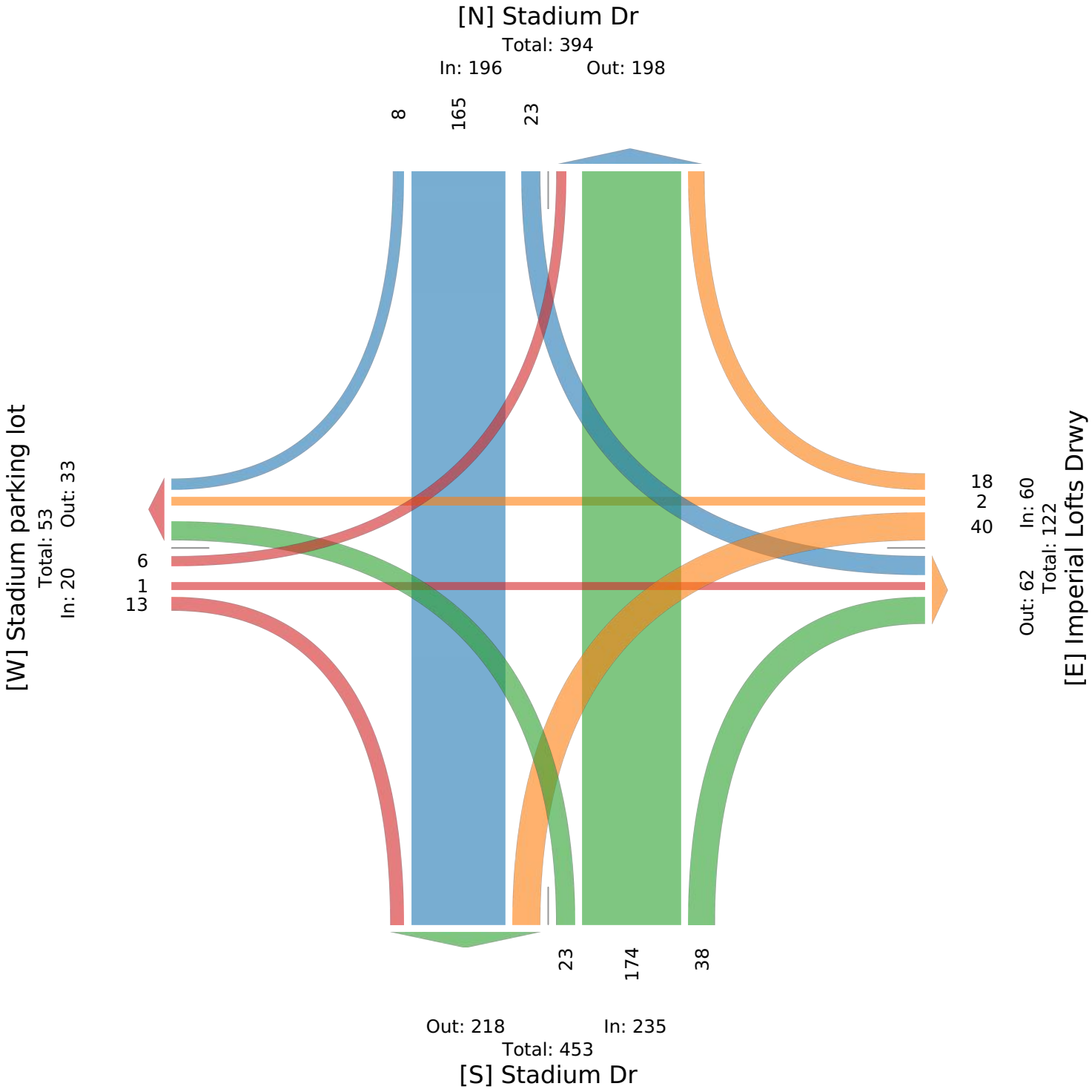
Leg	Stadium Dr						Imperial Lofts Drwy						Stadium Dr						Stadium parking lot						
Direction	Southbound						Westbound						Northbound						Eastbound						
Time	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	**Int**
2021-08-07 1:00PM	2	17	6	0	**25**	0	4	0	6	0	**10**	0	5	25	4	0	**34**	0	4	0	4	0	**8**	0	**77**
1:15PM	2	20	1	0	**23**	0	1	0	6	0	**7**	0	3	24	7	0	**34**	0	2	0	1	0	**3**	0	**67**
1:30PM	0	20	4	0	**24**	0	3	0	7	0	**10**	0	4	25	4	0	**33**	0	3	0	0	0	**3**	0	**70**
1:45PM	0	27	3	0	**30**	0	2	0	6	0	**8**	0	1	25	2	0	**28**	0	0	0	0	0	**0**	0	**66**
Hourly Total	4	84	14	0	**102**	0	10	0	25	0	**35**	0	13	99	17	0	**129**	0	9	0	5	0	**14**	0	**280**
2:00PM	1	17	4	0	**22**	0	3	0	5	0	**8**	0	5	23	1	0	**29**	0	1	0	0	0	**1**	0	**60**
2:15PM	2	24	2	0	**28**	0	2	0	4	0	**6**	0	10	14	1	0	**25**	0	0	1	1	0	**2**	0	**61**
2:30PM	1	20	2	0	**23**	0	1	0	5	0	**6**	0	6	15	1	0	**22**	0	1	0	0	0	**1**	0	**52**
2:45PM	0	20	1	0	**21**	0	2	2	1	0	**5**	0	4	23	3	0	**30**	0	2	0	0	0	**2**	0	**58**
Hourly Total	4	81	9	0	**94**	0	8	2	15	0	**25**	0	25	75	6	0	**106**	0	4	1	1	0	**6**	0	**231**
Total	8	165	23	0	**196**	0	18	2	40	0	**60**	0	38	174	23	0	**235**	0	13	1	6	0	**20**	0	**511**
% Approach	4.1%	84.2%	11.7%	0%	**-**	-	30.0%	3.3%	66.7%	0%	**-**	-	16.2%	74.0%	9.8%	0%	**-**	-	65.0%	5.0%	30.0%	0%	**-**	-	**-**
% Total	1.6%	32.3%	4.5%	0%	**38.4%**	-	3.5%	0.4%	7.8%	0%	**11.7%**	-	7.4%	34.1%	4.5%	0%	**46.0%**	-	2.5%	0.2%	1.2%	0%	**3.9%**	-	**-**
Lights	8	165	22	0	**195**	-	18	2	40	0	**60**	-	38	174	23	0	**235**	-	13	1	6	0	**20**	-	510
% Lights	100%	100%	95.7%	0%	**99.5%**	-	100%	100%	100%	0%	**100%**	-	100%	100%	100%	0%	**100%**	-	100%	100%	100%	0%	**100%**	-	99.8%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	0	0	1	0	**1**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	1
% Buses and Single-Unit Trucks	0%	0%	4.3%	0%	**0.5%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0.2%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Stadium Dr at Stadium parking lot - SAT - TMC

Sat Aug 7, 2021
Full Length (1 PM-3 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 862455, Location: 29.622937, -95.645644

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



Stadium Dr at Stadium parking lot - SAT - TMC

Sat Aug 7, 2021
PM Peak (WKND) (1 PM - 2 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 862455, Location: 29.622937, -95.645644

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

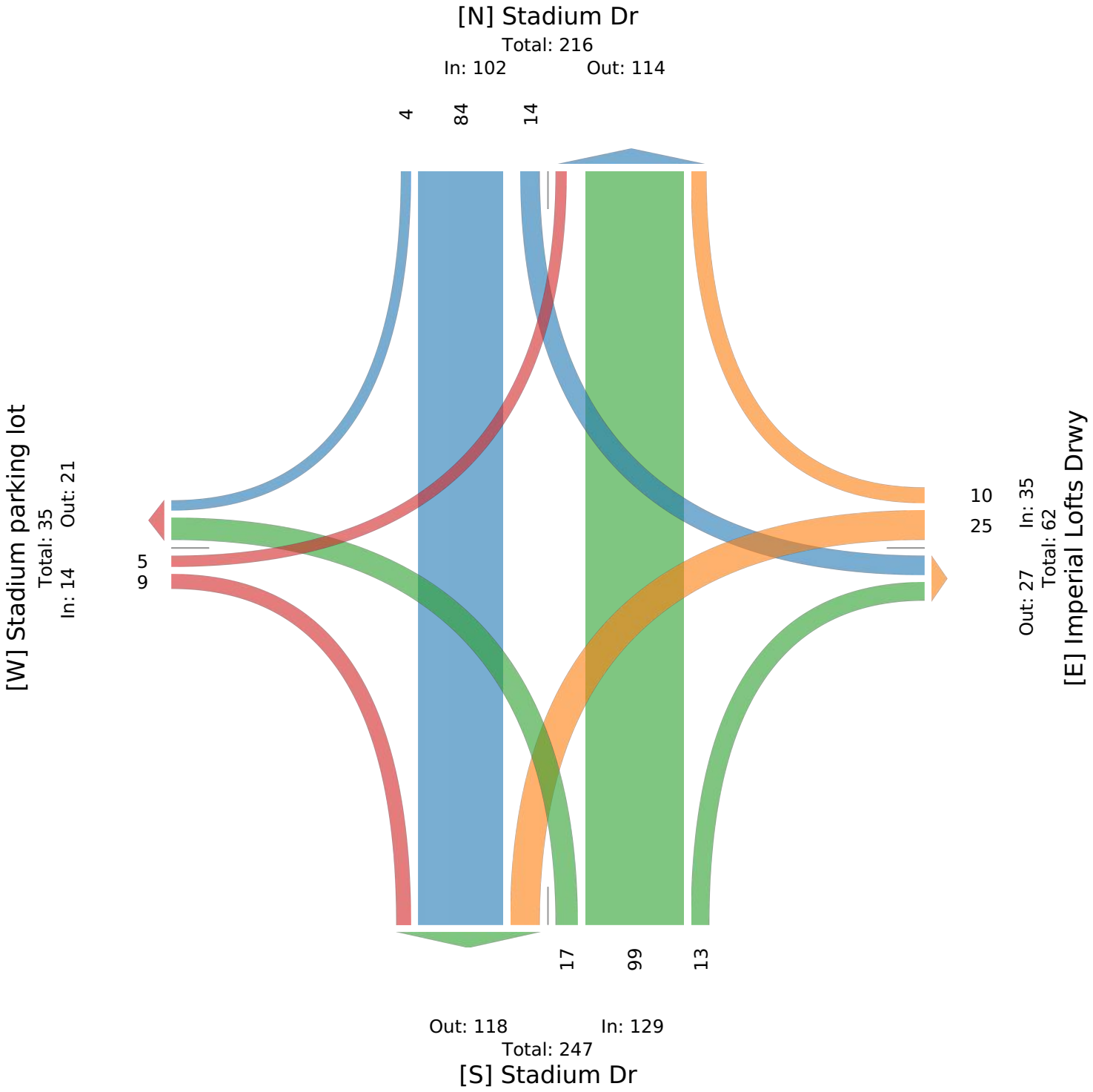
Leg / Direction	Stadium Dr Southbound						Imperial Lofts Drwy Westbound						Stadium Dr Northbound						Stadium parking lot Eastbound						
Time	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	**Int**
2021-08-07 1:00PM	2	17	6	0	**25**	0	4	0	6	0	**10**	0	5	25	4	0	**34**	0	4	0	4	0	**8**	0	**77**
1:15PM	2	20	1	0	**23**	0	1	0	6	0	**7**	0	3	24	7	0	**34**	0	2	0	1	0	**3**	0	**67**
1:30PM	0	20	4	0	**24**	0	3	0	7	0	**10**	0	4	25	4	0	**33**	0	3	0	0	0	**3**	0	**70**
1:45PM	0	27	3	0	**30**	0	2	0	6	0	**8**	0	1	25	2	0	**28**	0	0	0	0	0	**0**	0	**66**
Total	4	84	14	0	**102**	0	10	0	25	0	**35**	0	13	99	17	0	**129**	0	9	0	5	0	**14**	0	**280**
% Approach	3.9%	82.4%	13.7%	0%	**-**	-	28.6%	0%	71.4%	0%	**-**	-	10.1%	76.7%	13.2%	0%	**-**	-	64.3%	0%	35.7%	0%	**-**	-	**-**
% Total	1.4%	30.0%	5.0%	0%	**36.4%**	-	3.6%	0%	8.9%	0%	**12.5%**	-	4.6%	35.4%	6.1%	0%	**46.1%**	-	3.2%	0%	1.8%	0%	**5.0%**	-	**-**
PHF	0.500	0.778	0.583	-	**0.850**	-	0.625	-	0.893	-	**0.875**	-	0.650	0.990	0.607	-	**0.949**	-	0.563	-	0.313	-	**0.438**	-	0.909
Lights	4	84	14	0	**102**	-	10	0	25	0	**35**	-	13	99	17	0	**129**	-	9	0	5	0	**14**	-	280
% Lights	100%	100%	100%	0%	**100%**	-	100%	0%	100%	0%	**100%**	-	100%	100%	100%	0%	**100%**	-	100%	0%	100%	0%	**100%**	-	100%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Stadium Dr at Stadium parking lot - SAT - TMC

Sat Aug 7, 2021
PM Peak (WKND) (1 PM - 2 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 862455, Location: 29.622937, -95.645644

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



Imperial Blvd at Stadium Dr - TMC

Thu Feb 17, 2022
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 924912, Location: 29.625483, -95.644061

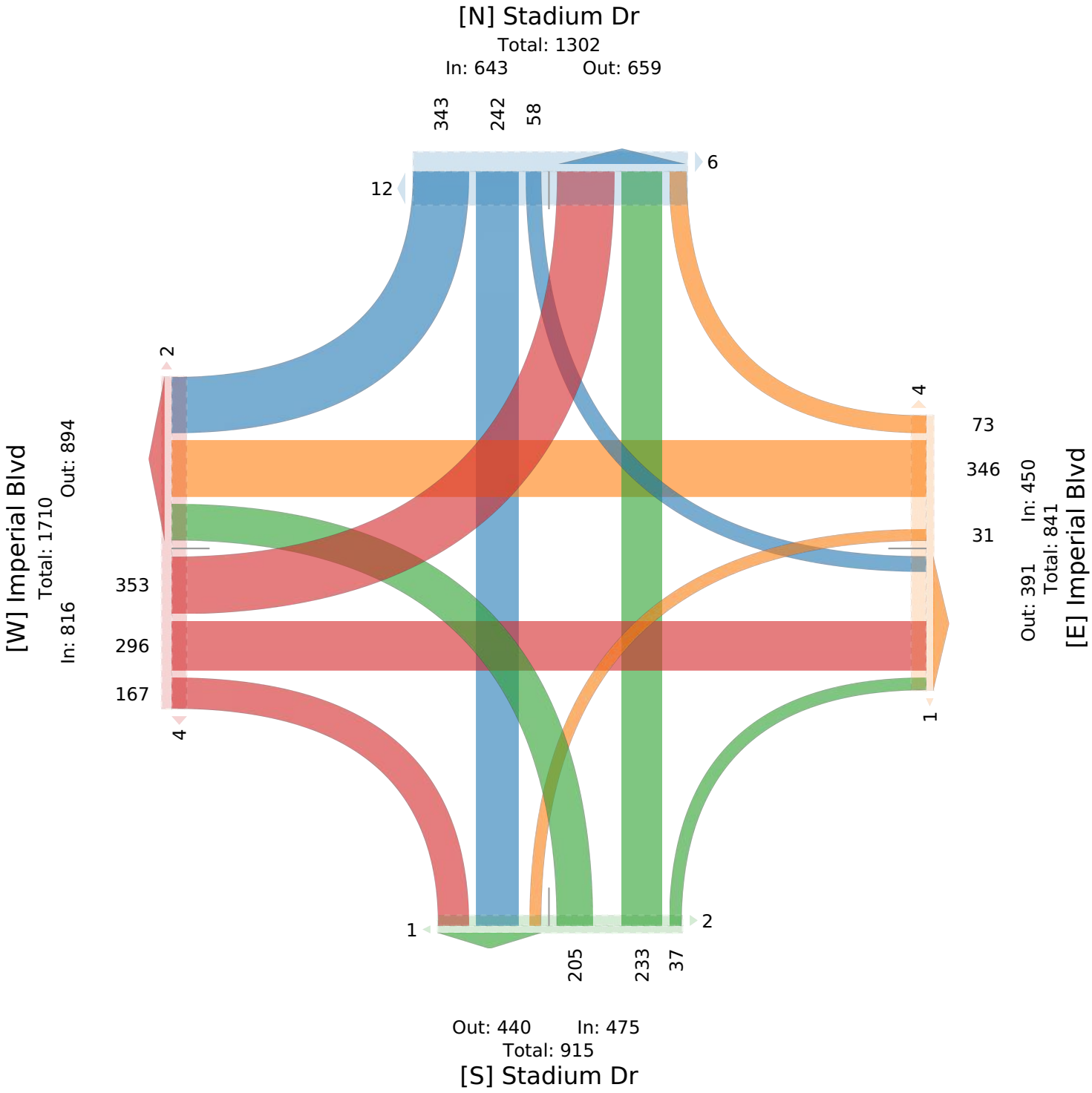
Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

Leg	Stadium Dr						Imperial Blvd						Stadium Dr						Imperial Blvd						
Direction	Southbound						Westbound						Northbound						Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2022-02-17 7:00AM	15	12	1	0	**28**	0	3	9	2	0	**14**	0	2	4	6	0	**12**	1	13	24	6	0	**43**	0	**97**
7:15AM	17	17	3	0	**37**	0	5	13	3	0	**21**	0	0	15	0	0	**15**	0	8	29	21	0	**58**	0	**131**
7:30AM	29	14	2	0	**45**	0	4	9	4	0	**17**	0	1	6	3	0	**10**	0	15	24	32	0	**71**	0	**143**
7:45AM	30	21	6	0	**57**	0	4	16	0	0	**20**	1	1	7	10	0	**18**	0	14	28	20	0	**62**	0	**157**
Hourly Total	91	64	12	0	**167**	0	16	47	9	0	**72**	1	4	32	19	0	**55**	1	50	105	79	0	**234**	0	**528**
8:00AM	27	18	3	0	**48**	0	0	8	2	0	**10**	1	0	7	4	0	**11**	0	15	29	9	0	**53**	0	**122**
8:15AM	19	10	4	0	**33**	0	1	10	0	0	**11**	0	3	7	4	0	**14**	0	13	17	11	0	**41**	0	**99**
8:30AM	14	12	3	0	**29**	0	0	7	0	0	**7**	1	0	8	3	0	**11**	0	12	13	20	0	**45**	0	**92**
8:45AM	26	13	3	0	**42**	0	3	8	5	0	**16**	0	0	4	6	0	**10**	0	12	14	14	0	**40**	0	**108**
Hourly Total	86	53	13	0	**152**	0	4	33	7	0	**44**	2	3	26	17	0	**46**	0	52	73	54	0	**179**	0	**421**
4:00PM	19	15	3	0	**37**	3	7	19	0	0	**26**	0	2	19	13	0	**34**	2	10	17	22	0	**49**	1	**146**
4:15PM	13	12	5	0	**30**	2	12	35	1	0	**48**	0	3	15	16	0	**34**	0	8	7	28	0	**43**	2	**155**
4:30PM	20	12	5	0	**37**	4	7	50	5	0	**62**	0	4	19	22	0	**45**	0	9	16	26	0	**51**	0	**195**
4:45PM	29	17	5	0	**51**	0	3	30	2	0	**35**	0	6	19	26	0	**51**	0	4	18	30	0	**52**	0	**189**
Hourly Total	81	56	18	0	**155**	9	29	134	8	0	**171**	0	15	72	77	0	**164**	2	31	58	106	0	**195**	3	**685**
5:00PM	23	20	3	0	**46**	5	9	32	1	0	**42**	0	4	23	24	0	**51**	0	4	12	26	0	**42**	0	**181**
5:15PM	20	15	2	0	**37**	2	5	38	3	0	**46**	0	4	22	20	0	**46**	0	6	18	28	0	**52**	1	**181**
5:30PM	23	15	5	0	**43**	2	8	37	2	0	**47**	2	3	32	25	0	**60**	0	12	14	27	0	**53**	1	**203**
5:45PM	19	19	5	0	**43**	0	2	25	1	0	**28**	0	4	26	23	0	**53**	0	12	16	33	0	**61**	1	**185**
Hourly Total	85	69	15	0	**169**	9	24	132	7	0	**163**	2	15	103	92	0	**210**	0	34	60	114	0	**208**	3	**750**
Total	343	242	58	0	**643**	18	73	346	31	0	**450**	5	37	233	205	0	**475**	3	167	296	353	0	**816**	6	**2384**
% Approach	53.3%	37.6%	9.0%	0%	**-**	-	16.2%	76.9%	6.9%	0%	**-**	-	7.8%	49.1%	43.2%	0%	**-**	-	20.5%	36.3%	43.3%	0%	**-**	-	-
% Total	14.4%	10.2%	2.4%	0%	**27.0%**	-	3.1%	14.5%	1.3%	0%	**18.9%**	-	1.6%	9.8%	8.6%	0%	**19.9%**	-	7.0%	12.4%	14.8%	0%	**34.2%**	-	-
Lights	339	241	58	0	**638**	-	73	345	30	0	**448**	-	37	231	205	0	**473**	-	165	295	349	0	**809**	-	2368
% Lights	98.8%	99.6%	100%	0%	**99.2%**	-	100%	99.7%	96.8%	0%	**99.6%**	-	100%	99.1%	100%	0%	**99.6%**	-	98.8%	99.7%	98.9%	0%	**99.1%**	-	99.3%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	1	0	0	0	**1**	-	1
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0.6%	0%	0%	0%	**0.1%**	-	0%
Buses and Single-Unit Trucks	4	1	0	0	**5**	-	0	1	1	0	**2**	-	0	2	0	0	**2**	-	1	1	4	0	**6**	-	15
% Buses and Single-Unit Trucks	1.2%	0.4%	0%	0%	**0.8%**	-	0%	0.3%	3.2%	0%	**0.4%**	-	0%	0.9%	0%	0%	**0.4%**	-	0.6%	0.3%	1.1%	0%	**0.7%**	-	0.6%
Pedestrians	-	-	-	-	-	16	-	-	-	-	-	5	-	-	-	-	-	3	-	-	-	-	-	5	
% Pedestrians	-	-	-	-	-	88.9%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	83.3%	-
Bicycles on Crosswalk	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	-	11.1%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	16.7%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Imperial Blvd at Stadium Dr - TMC
Thu Feb 17, 2022
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 924912, Location: 29.625483, -95.644061

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



Imperial Blvd at Stadium Dr - TMC

Thu Feb 17, 2022
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 924912, Location: 29.625483, -95.644061

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

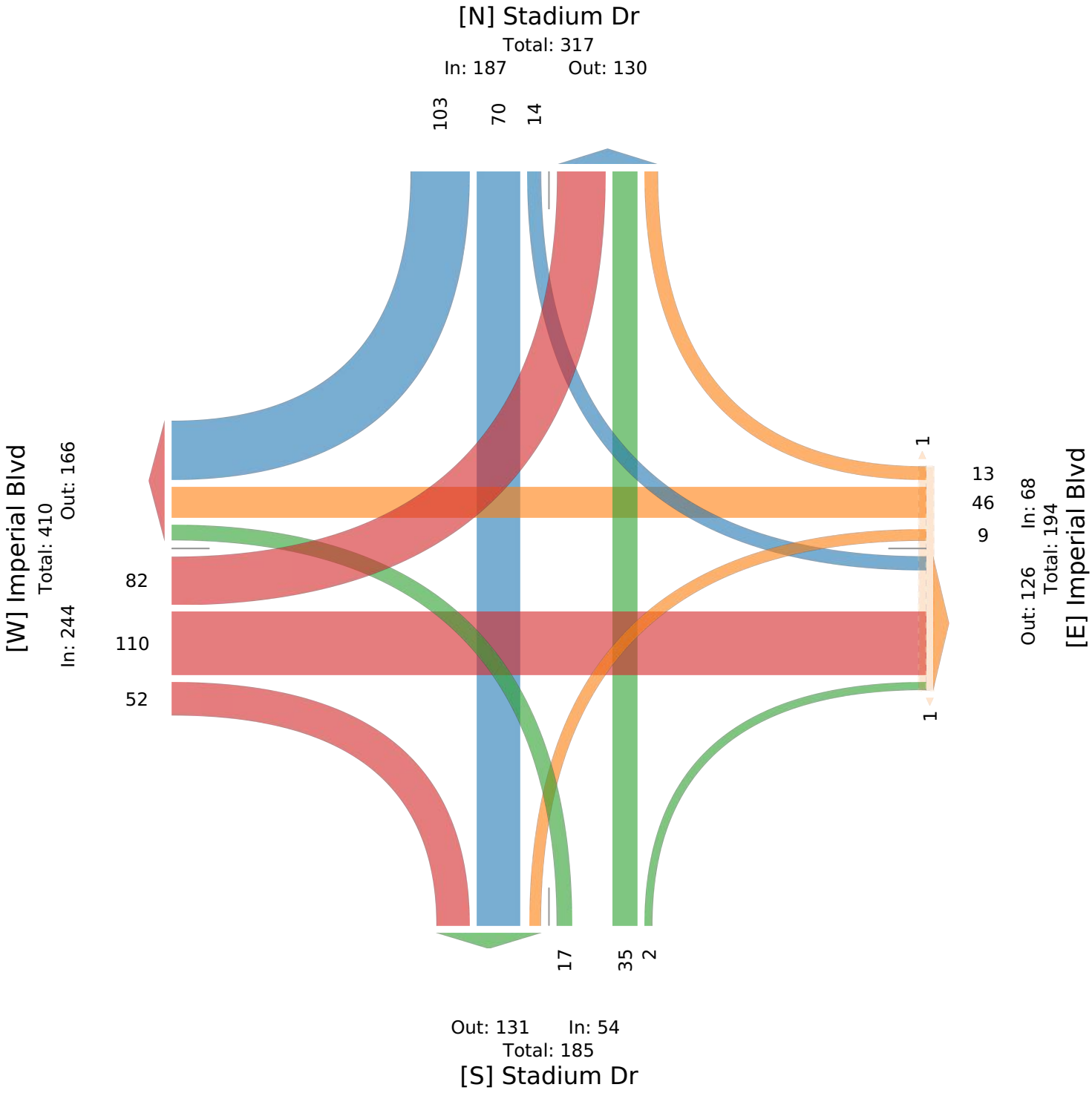
Leg	Stadium Dr						Imperial Blvd						Stadium Dr						Imperial Blvd						
Direction	Southbound						Westbound						Northbound						Eastbound						
Time	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	**Int**
2022-02-17 7:15AM	17	17	3	0	**37**	0	5	13	3	0	**21**	0	0	15	0	0	**15**	0	8	29	21	0	**58**	0	**131**
7:30AM	29	14	2	0	**45**	0	4	9	4	0	**17**	0	1	6	3	0	**10**	0	15	24	32	0	**71**	0	**143**
7:45AM	30	21	6	0	**57**	0	4	16	0	0	**20**	1	1	7	10	0	**18**	0	14	28	20	0	**62**	0	**157**
8:00AM	27	18	3	0	**48**	0	0	8	2	0	**10**	1	0	7	4	0	**11**	0	15	29	9	0	**53**	0	**122**
Total	103	70	14	0	**187**	0	13	46	9	0	**68**	2	2	35	17	0	**54**	0	52	110	82	0	**244**	0	**553**
% Approach	55.1%	37.4%	7.5%	0%	**-**	-	19.1%	67.6%	13.2%	0%	**-**	-	3.7%	64.8%	31.5%	0%	**-**	-	21.3%	45.1%	33.6%	0%	**-**	-	-
% Total	18.6%	12.7%	2.5%	0%	**33.8%**	-	2.4%	8.3%	1.6%	0%	**12.3%**	-	0.4%	6.3%	3.1%	0%	**9.8%**	-	9.4%	19.9%	14.8%	0%	**44.1%**	-	-
PHF	0.858	0.833	0.583	-	**0.820**	-	0.650	0.719	0.563	-	**0.810**	-	0.500	0.583	0.425	-	**0.750**	-	0.867	0.948	0.641	-	**0.859**	-	0.881
Lights	103	69	14	0	**186**	-	13	46	8	0	**67**	-	2	34	17	0	**53**	-	52	110	81	0	**243**	-	549
% Lights	100%	98.6%	100%	0%	**99.5%**	-	100%	100%	88.9%	0%	**98.5%**	-	100%	97.1%	100%	0%	**98.1%**	-	100%	100%	98.8%	0%	**99.6%**	-	99.3%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	0	1	0	0	**1**	-	0	0	1	0	**1**	-	0	1	0	0	**1**	-	0	0	1	0	**1**	-	4
% Buses and Single-Unit Trucks	0%	1.4%	0%	0%	**0.5%**	-	0%	0%	11.1%	0%	**1.5%**	-	0%	2.9%	0%	0%	**1.9%**	-	0%	0%	1.2%	0%	**0.4%**	-	0.7%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Imperial Blvd at Stadium Dr - TMC

Thu Feb 17, 2022
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 924912, Location: 29.625483, -95.644061

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



Imperial Blvd at Stadium Dr - TMC

Thu Feb 17, 2022
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 924912, Location: 29.625483, -95.644061

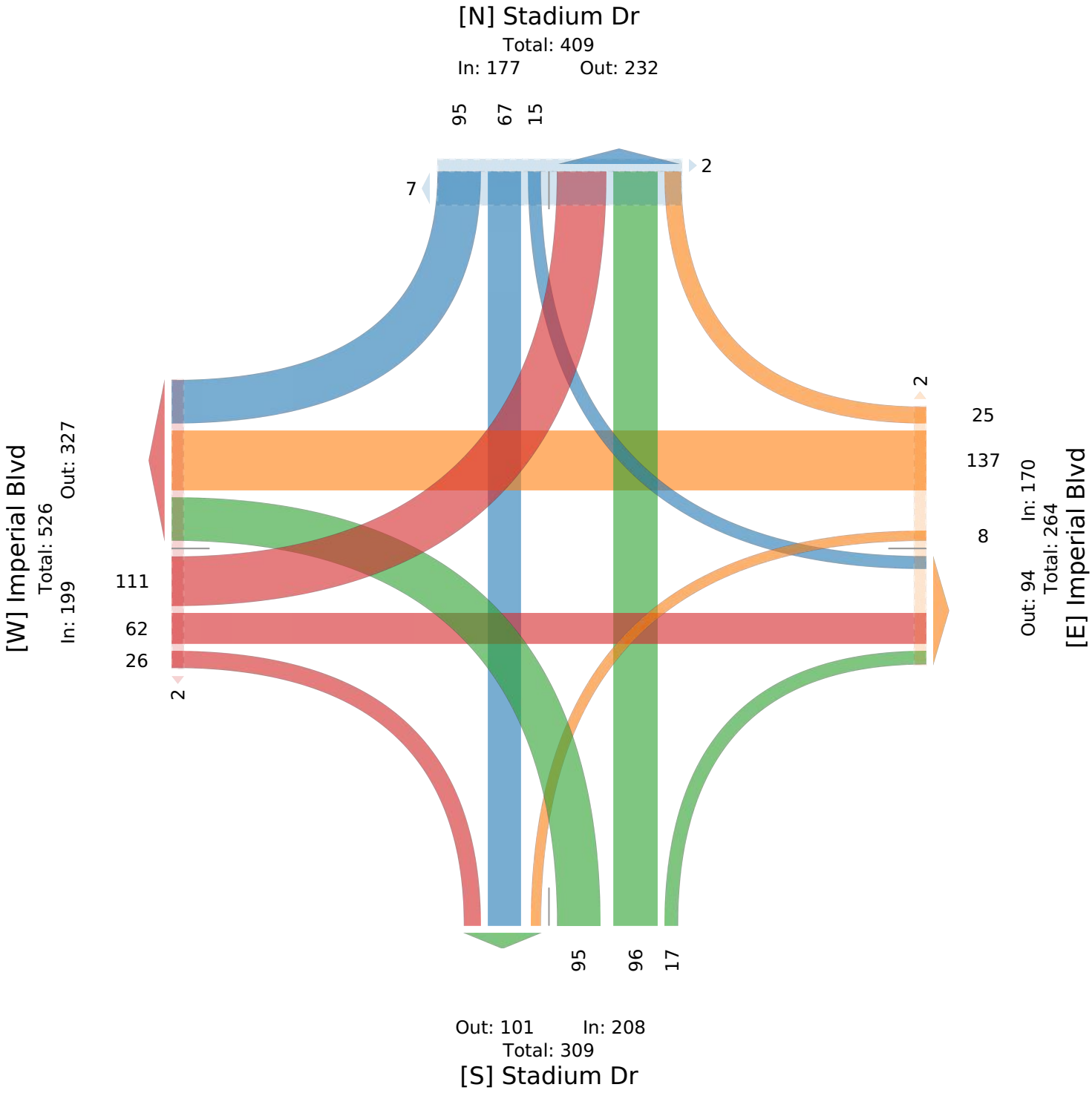
Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

Leg Direction	Stadium Dr Southbound						Imperial Blvd Westbound						Stadium Dr Northbound						Imperial Blvd Eastbound						
Time	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	**Int**
2022-02-17 4:45PM	29	17	5	0	**51**	0	3	30	2	0	**35**	0	6	19	26	0	**51**	0	4	18	30	0	**52**	0	**189**
5:00PM	23	20	3	0	**46**	5	9	32	1	0	**42**	0	4	23	24	0	**51**	0	4	12	26	0	**42**	0	**181**
5:15PM	20	15	2	0	**37**	2	5	38	3	0	**46**	0	4	22	20	0	**46**	0	6	18	28	0	**52**	1	**181**
5:30PM	23	15	5	0	**43**	2	8	37	2	0	**47**	2	3	32	25	0	**60**	0	12	14	27	0	**53**	1	**203**
Total	95	67	15	0	**177**	9	25	137	8	0	**170**	2	17	96	95	0	**208**	0	26	62	111	0	**199**	2	**754**
% Approach	53.7%	37.9%	8.5%	0%	**-**	-	14.7%	80.6%	4.7%	0%	**-**	-	8.2%	46.2%	45.7%	0%	**-**	-	13.1%	31.2%	55.8%	0%	**-**	-	-
% Total	12.6%	8.9%	2.0%	0%	**23.5%**	-	3.3%	18.2%	1.1%	0%	**22.5%**	-	2.3%	12.7%	12.6%	0%	**27.6%**	-	3.4%	8.2%	14.7%	0%	**26.4%**	-	-
PHF	0.819	0.838	0.750	-	**0.868**	-	0.694	0.901	0.667	-	**0.904**	-	0.708	0.750	0.913	-	**0.867**	-	0.542	0.861	0.925	-	**0.939**	-	0.929
Lights	95	67	15	0	**177**	-	25	136	8	0	**169**	-	17	96	95	0	**208**	-	25	61	111	0	**197**	-	751
% Lights	100%	100%	100%	0%	**100%**	-	100%	99.3%	100%	0%	**99.4%**	-	100%	100%	100%	0%	**100%**	-	96.2%	98.4%	100%	0%	**99.0%**	-	99.6%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	0	0	0	0	**0**	-	0	1	0	0	**1**	-	0	0	0	0	**0**	-	1	1	0	0	**2**	-	3
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	-	0%	0.7%	0%	0%	**0.6%**	-	0%	0%	0%	0%	**0%**	-	3.8%	1.6%	0%	0%	**1.0%**	-	0.4%
Pedestrians	-	-	-	-	-	8	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	1	
% Pedestrians	-	-	-	-	-	88.9%	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	50.0%	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	-	11.1%	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	50.0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Imperial Blvd at Stadium Dr - TMC
Thu Feb 17, 2022
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 924912, Location: 29.625483, -95.644061

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



Imperial at Stadium Dr - Saturday - TMC

Sat Feb 19, 2022
Full Length (1 PM-3 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 925798, Location: 29.625452, -95.644127

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

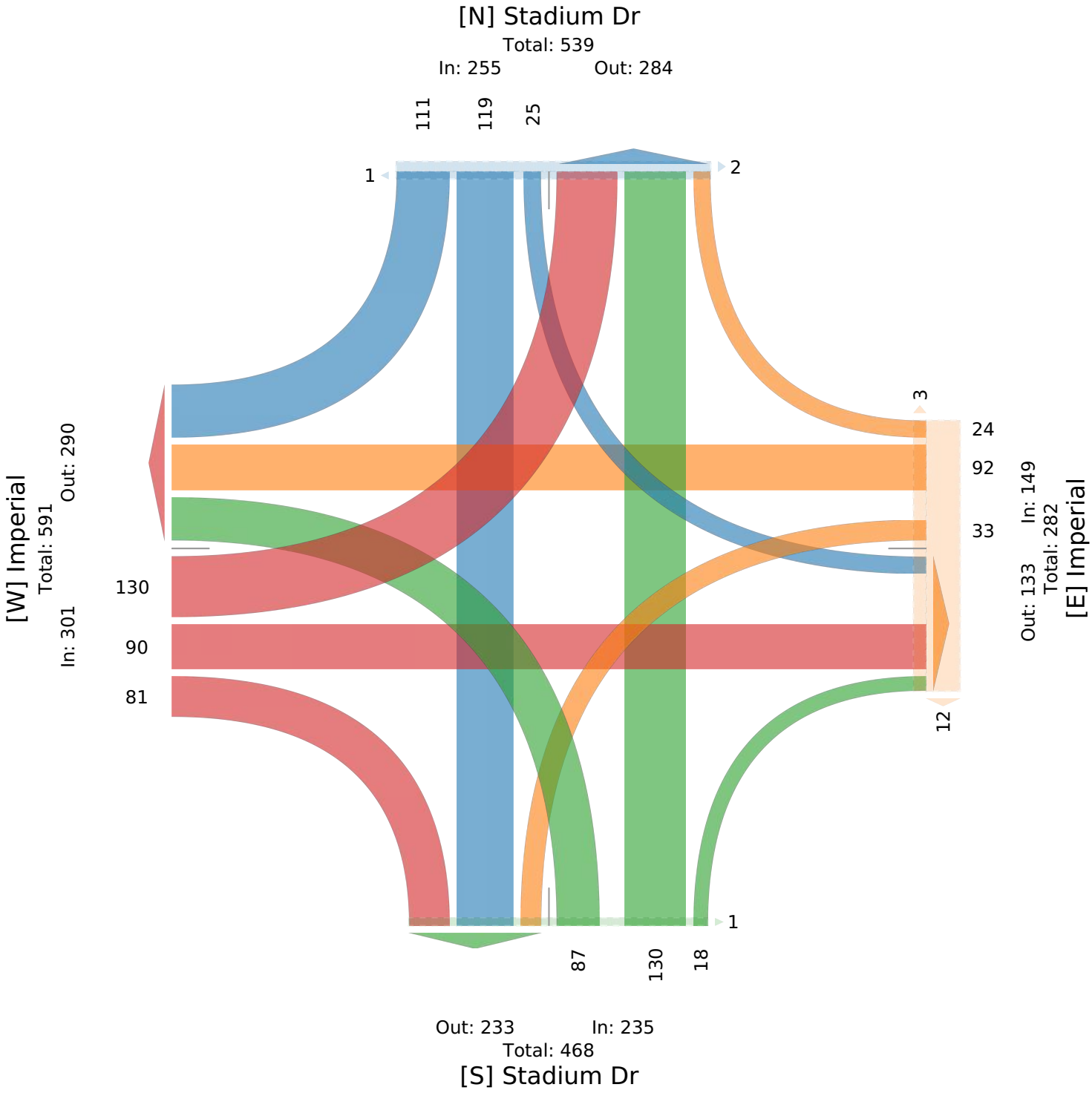
Leg	Stadium Dr						Imperial						Stadium Dr						Imperial						
Direction	Southbound						Westbound						Northbound						Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2022-02-19 1:00PM	16	16	6	0	**38**	0	4	12	5	0	**21**	1	1	13	12	0	**26**	0	10	8	16	0	**34**	0	**119**
1:15PM	11	16	5	0	**32**	0	1	19	6	0	**26**	5	4	20	10	0	**34**	1	7	8	27	0	**42**	0	**134**
1:30PM	16	11	2	0	**29**	0	2	7	2	0	**11**	0	1	19	11	0	**31**	0	13	12	13	0	**38**	0	**109**
1:45PM	20	21	1	0	**42**	0	3	9	7	0	**19**	6	3	18	9	0	**30**	0	10	13	14	0	**37**	0	**128**
Hourly Total	63	64	14	0	**141**	0	10	47	20	0	**77**	12	9	70	42	0	**121**	1	40	41	70	0	**151**	0	**490**
2:00PM	18	15	4	0	**37**	0	5	9	2	0	**16**	2	4	20	10	0	**34**	0	6	10	15	0	**31**	0	**118**
2:15PM	12	11	1	0	**24**	1	2	12	5	0	**19**	1	1	8	12	0	**21**	0	11	18	17	0	**46**	0	**110**
2:30PM	9	13	3	0	**25**	0	5	17	3	0	**25**	0	0	17	10	0	**27**	0	11	9	15	0	**35**	0	**112**
2:45PM	9	16	3	0	**28**	2	2	7	3	0	**12**	0	4	15	13	0	**32**	0	13	12	13	0	**38**	0	**110**
Hourly Total	48	55	11	0	**114**	3	14	45	13	0	**72**	3	9	60	45	0	**114**	0	41	49	60	0	**150**	0	**450**
Total	111	119	25	0	**255**	3	24	92	33	0	**149**	15	18	130	87	0	**235**	1	81	90	130	0	**301**	0	**940**
% Approach	43.5%	46.7%	9.8%	0%	**-**	-	16.1%	61.7%	22.1%	0%	**-**	-	7.7%	55.3%	37.0%	0%	**-**	-	26.9%	29.9%	43.2%	0%	**-**	-	-
% Total	11.8%	12.7%	2.7%	0%	**27.1%**	-	2.6%	9.8%	3.5%	0%	**15.9%**	-	1.9%	13.8%	9.3%	0%	**25.0%**	-	8.6%	9.6%	13.8%	0%	**32.0%**	-	-
Lights	110	118	25	0	**253**	-	24	90	33	0	**147**	-	17	130	87	0	**234**	-	81	89	130	0	**300**	-	934
% Lights	99.1%	99.2%	100%	0%	**99.2%**	-	100%	97.8%	100%	0%	**98.7%**	-	94.4%	100%	100%	0%	**99.6%**	-	100%	98.9%	100%	0%	**99.7%**	-	99.4%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	1	1	0	0	**2**	-	0	2	0	0	**2**	-	1	0	0	0	**1**	-	0	1	0	0	**1**	-	6
% Buses and Single-Unit Trucks	0.9%	0.8%	0%	0%	**0.8%**	-	0%	2.2%	0%	0%	**1.3%**	-	5.6%	0%	0%	0%	**0.4%**	-	0%	1.1%	0%	0%	**0.3%**	-	0.6%
Pedestrians	-	-	-	-	-	2	-	-	-	-	-	15	-	-	-	-	-	1	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	66.7%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	33.3%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Imperial at Stadium Dr - Saturday - TMC

Sat Feb 19, 2022
Full Length (1 PM-3 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 925798, Location: 29.625452, -95.644127

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



Imperial at Stadium Dr - Saturday - TMC

Sat Feb 19, 2022
Midday Peak (WKND), PM Peak (WKND) (1 PM - 2 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 925798, Location: 29.625452, -95.644127

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

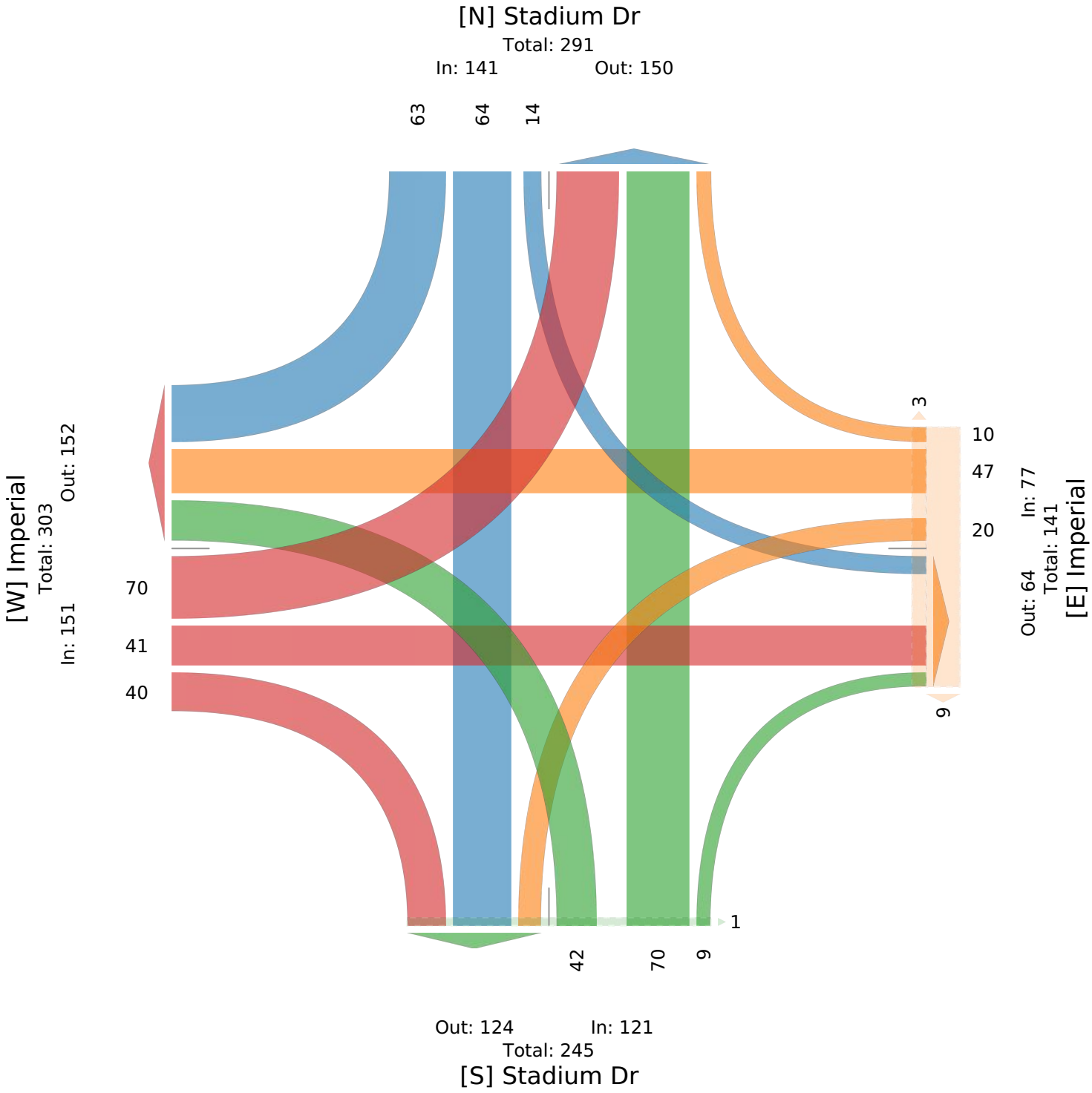
Leg	Stadium Dr						Imperial						Stadium Dr						Imperial						
Direction	Southbound						Westbound						Northbound						Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2022-02-19 1:00PM	16	16	6	0	**38**	0	4	12	5	0	**21**	1	1	13	12	0	**26**	0	10	8	16	0	**34**	0	**119**
1:15PM	11	16	5	0	**32**	0	1	19	6	0	**26**	5	4	20	10	0	**34**	1	7	8	27	0	**42**	0	**134**
1:30PM	16	11	2	0	**29**	0	2	7	2	0	**11**	0	1	19	11	0	**31**	0	13	12	13	0	**38**	0	**109**
1:45PM	20	21	1	0	**42**	0	3	9	7	0	**19**	6	3	18	9	0	**30**	0	10	13	14	0	**37**	0	**128**
Total	63	64	14	0	**141**	0	10	47	20	0	**77**	12	9	70	42	0	**121**	1	40	41	70	0	**151**	0	**490**
% Approach	44.7%	45.4%	9.9%	0%	**-**	-	13.0%	61.0%	26.0%	0%	**-**	-	7.4%	57.9%	34.7%	0%	**-**	-	26.5%	27.2%	46.4%	0%	**-**	-	-
% Total	12.9%	13.1%	2.9%	0%	**28.8%**	-	2.0%	9.6%	4.1%	0%	**15.7%**	-	1.8%	14.3%	8.6%	0%	**24.7%**	-	8.2%	8.4%	14.3%	0%	**30.8%**	-	-
PHF	0.788	0.762	0.583	-	**0.839**	-	0.625	0.618	0.714	-	**0.740**	-	0.563	0.875	0.875	-	**0.890**	-	0.769	0.788	0.648	-	**0.899**	-	0.914
Lights	62	63	14	0	**139**	-	10	45	20	0	**75**	-	8	70	42	0	**120**	-	40	40	70	0	**150**	-	484
% Lights	98.4%	98.4%	100%	0%	**98.6%**	-	100%	95.7%	100%	0%	**97.4%**	-	88.9%	100%	100%	0%	**99.2%**	-	100%	97.6%	100%	0%	**99.3%**	-	98.8%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	1	1	0	0	**2**	-	0	2	0	0	**2**	-	1	0	0	0	**1**	-	0	1	0	0	**1**	-	6
% Buses and Single-Unit Trucks	1.6%	1.6%	0%	0%	**1.4%**	-	0%	4.3%	0%	0%	**2.6%**	-	11.1%	0%	0%	0%	**0.8%**	-	0%	2.4%	0%	0%	**0.7%**	-	1.2%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	12	-	-	-	-	-	1	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Imperial at Stadium Dr - Saturday - TMC

Sat Feb 19, 2022
Midday Peak (WKND), PM Peak (WKND) (1 PM - 2 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 925798, Location: 29.625452, -95.644127

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



Imperial Blvd at Silent Manor Dr - TMC

Thu Jan 27, 2022
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 918856, Location: 29.624878, -95.642032

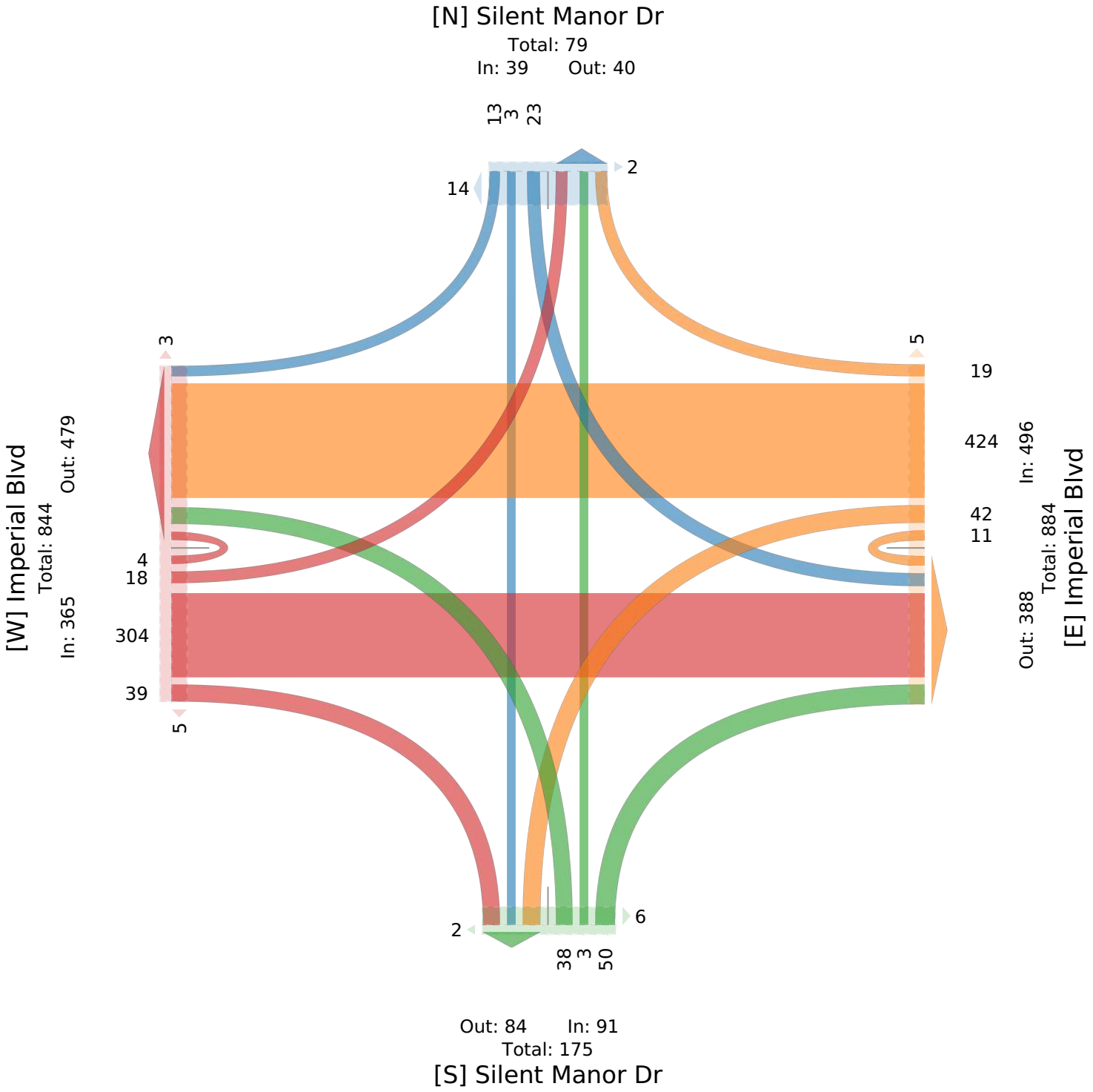
Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

Leg	Silent Manor Dr						Imperial Blvd						Silent Manor Dr						Imperial Blvd						
Direction	Southbound						Westbound						Northbound						Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2022-01-27 7:00AM	1	0	2	0	**3**	0	1	9	2	1	**13**	0	4	0	2	0	**6**	0	3	23	0	0	**26**	1	**48**
7:15AM	1	1	1	0	**3**	0	0	12	3	0	**15**	0	2	0	1	0	**3**	1	1	20	0	0	**21**	0	**42**
7:30AM	1	0	3	0	**4**	0	0	17	0	0	**17**	0	3	0	5	0	**8**	0	1	25	2	0	**28**	0	**57**
7:45AM	2	0	3	0	**5**	1	1	14	3	0	**18**	0	6	0	3	0	**9**	0	2	27	0	0	**29**	0	**61**
Hourly Total	5	1	9	0	**15**	1	2	52	8	1	**63**	0	15	0	11	0	**26**	1	7	95	2	0	**104**	1	**208**
8:00AM	0	0	2	0	**2**	1	1	17	3	0	**21**	0	7	0	4	0	**11**	0	3	26	0	0	**29**	0	**63**
8:15AM	1	0	2	0	**3**	1	3	11	3	0	**17**	0	1	0	1	0	**2**	0	4	26	1	1	**32**	0	**54**
8:30AM	2	0	1	0	**3**	4	0	6	2	4	**12**	0	5	2	0	0	**7**	0	1	17	0	0	**18**	0	**40**
8:45AM	1	0	3	0	**4**	1	2	6	2	0	**10**	0	4	0	3	0	**7**	0	1	27	1	0	**29**	1	**50**
Hourly Total	4	0	8	0	**12**	7	6	40	10	4	**60**	0	17	2	8	0	**27**	0	9	96	2	1	**108**	1	**207**
4:00PM	0	0	1	0	**1**	1	0	38	5	0	**43**	0	0	0	0	0	**0**	0	1	17	1	0	**19**	0	**63**
4:15PM	0	0	2	0	**2**	1	0	42	1	0	**43**	0	0	1	0	0	**1**	0	2	17	3	0	**22**	1	**68**
4:30PM	1	0	0	0	**1**	1	3	39	3	1	**46**	0	4	0	1	0	**5**	1	2	13	3	0	**18**	0	**70**
4:45PM	1	0	0	0	**1**	1	2	53	0	0	**55**	1	2	0	3	0	**5**	1	2	17	2	0	**21**	4	**82**
Hourly Total	2	0	3	0	**5**	4	5	172	9	1	**187**	1	6	1	4	0	**11**	2	7	64	9	0	**80**	5	**283**
5:00PM	0	0	1	0	**1**	2	1	54	5	1	**61**	0	3	0	5	0	**8**	1	2	17	1	1	**21**	0	**91**
5:15PM	0	1	1	0	**2**	1	0	50	4	2	**56**	0	3	0	3	0	**6**	2	4	13	1	1	**19**	1	**83**
5:30PM	0	0	0	0	**0**	1	1	34	2	2	**39**	4	0	0	6	0	**6**	2	6	13	2	1	**22**	0	**67**
5:45PM	2	1	1	0	**4**	0	4	22	4	0	**30**	0	6	0	1	0	**7**	0	4	6	1	0	**11**	0	**52**
Hourly Total	2	2	3	0	**7**	4	6	160	15	5	**186**	4	12	0	15	0	**27**	5	16	49	5	3	**73**	1	**293**
Total	13	3	23	0	**39**	16	19	424	42	11	**496**	5	50	3	38	0	**91**	8	39	304	18	4	**365**	8	**991**
% Approach	33.3%	7.7%	59.0%	0%	**-**	-	3.8%	85.5%	8.5%	2.2%	**-**	-	54.9%	3.3%	41.8%	0%	**-**	-	10.7%	83.3%	4.9%	1.1%	**-**	-	-
% Total	1.3%	0.3%	2.3%	0%	**3.9%**	-	1.9%	42.8%	4.2%	1.1%	**50.1%**	-	5.0%	0.3%	3.8%	0%	**9.2%**	-	3.9%	30.7%	1.8%	0.4%	**36.8%**	-	-
Lights	12	3	23	0	**38**	-	18	420	41	11	**490**	-	49	3	35	0	**87**	-	38	302	18	4	**362**	-	977
% Lights	92.3%	100%	100%	0%	**97.4%**	-	94.7%	99.1%	97.6%	100%	**98.8%**	-	98.0%	100%	92.1%	0%	**95.6%**	-	97.4%	99.3%	100%	100%	**99.2%**	-	98.6%
Articulated Trucks	1	0	0	0	**1**	-	0	0	0	0	**0**	-	0	0	1	0	**1**	-	0	1	0	0	**1**	-	3
% Articulated Trucks	7.7%	0%	0%	0%	**2.6%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	2.6%	0%	**1.1%**	-	0%	0.3%	0%	0%	**0.3%**	-	0.3%
Buses and Single-Unit Trucks	0	0	0	0	**0**	-	1	4	1	0	**6**	-	1	0	2	0	**3**	-	1	1	0	0	**2**	-	11
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	-	5.3%	0.9%	2.4%	0%	**1.2%**	-	2.0%	0%	5.3%	0%	**3.3%**	-	2.6%	0.3%	0%	0%	**0.5%**	-	1.1%
Pedestrians	-	-	-	-	-	14	-	-	-	-	-	5	-	-	-	-	-	8	-	-	-	-	-	8	
% Pedestrians	-	-	-	-	-	87.5%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	12.5%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Imperial Blvd at Silent Manor Dr - TMC
Thu Jan 27, 2022
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 918856, Location: 29.624878, -95.642032

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



Imperial Blvd at Silent Manor Dr - TMC

Thu Jan 27, 2022
AM Peak (7:30 AM - 8:30 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 918856, Location: 29.624878, -95.642032

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

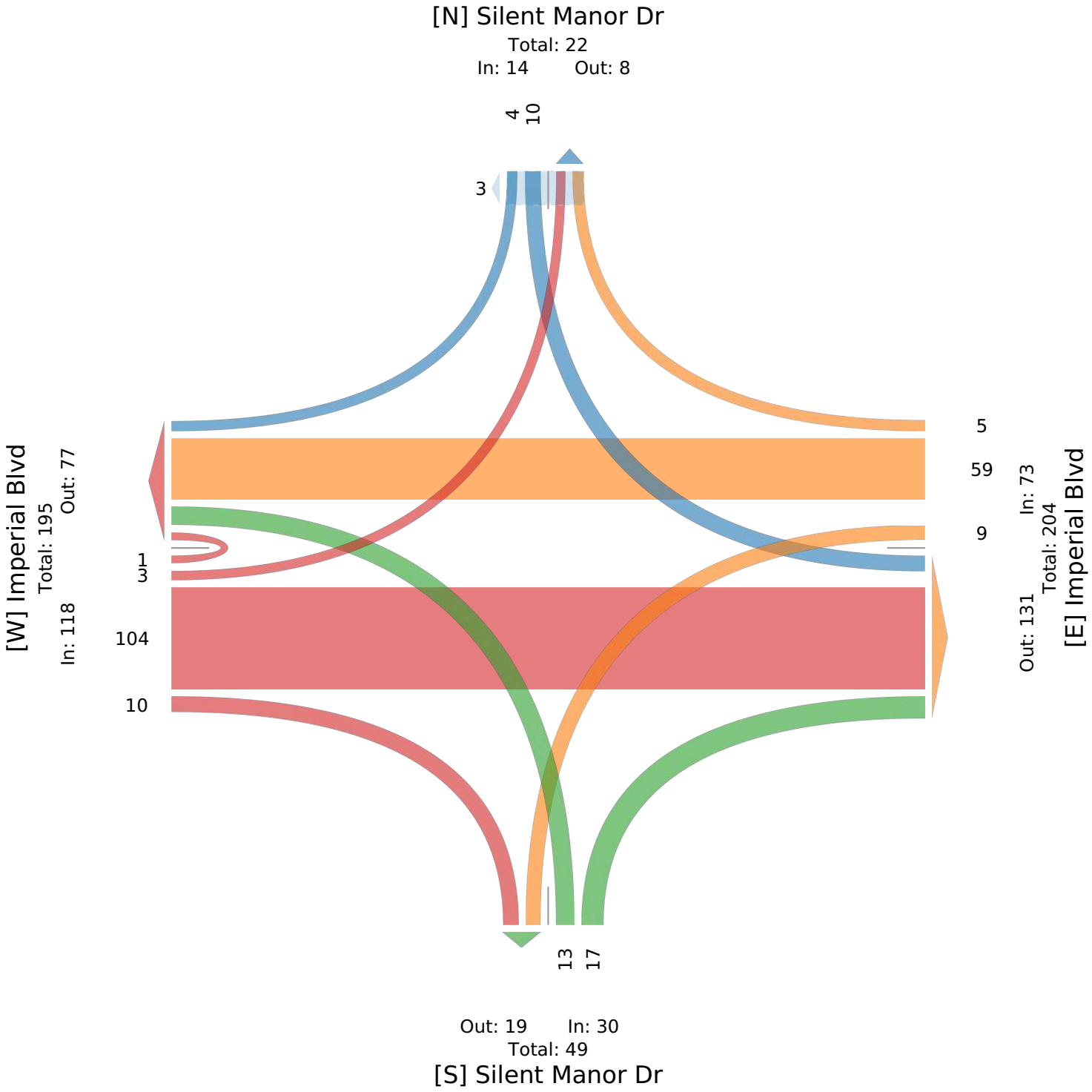
Leg	Silent Manor Dr						Imperial Blvd						Silent Manor Dr						Imperial Blvd						
Direction	Southbound						Westbound						Northbound						Eastbound						
Time	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	**Int**
2022-01-27 7:30AM	1	0	3	0	**4**	0	0	17	0	0	**17**	0	3	0	5	0	**8**	0	1	25	2	0	**28**	0	**57**
7:45AM	2	0	3	0	**5**	1	1	14	3	0	**18**	0	6	0	3	0	**9**	0	2	27	0	0	**29**	0	**61**
8:00AM	0	0	2	0	**2**	1	1	17	3	0	**21**	0	7	0	4	0	**11**	0	3	26	0	0	**29**	0	**63**
8:15AM	1	0	2	0	**3**	1	3	11	3	0	**17**	0	1	0	1	0	**2**	0	4	26	1	1	**32**	0	**54**
Total	4	0	10	0	**14**	3	5	59	9	0	**73**	0	17	0	13	0	**30**	0	10	104	3	1	**118**	0	**235**
% Approach	28.6%	0%	71.4%	0%	**-**	-	6.8%	80.8%	12.3%	0%	**-**	-	56.7%	0%	43.3%	0%	**-**	-	8.5%	88.1%	2.5%	0.8%	**-**	-	-
% Total	1.7%	0%	4.3%	0%	**6.0%**	-	2.1%	25.1%	3.8%	0%	**31.1%**	-	7.2%	0%	5.5%	0%	**12.8%**	-	4.3%	44.3%	1.3%	0.4%	**50.2%**	-	-
PHF	0.500	-	0.833	-	**0.700**	-	0.417	0.868	0.750	-	**0.869**	-	0.607	-	0.650	-	**0.682**	-	0.625	0.963	0.375	0.250	**0.922**	-	0.933
Lights	4	0	10	0	**14**	-	5	57	9	0	**71**	-	17	0	11	0	**28**	-	10	103	3	1	**117**	-	230
% Lights	100%	0%	100%	0%	**100%**	-	100%	96.6%	100%	0%	**97.3%**	-	100%	0%	84.6%	0%	**93.3%**	-	100%	99.0%	100%	100%	**99.2%**	-	97.9%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	1	0	**1**	-	0	1	0	0	**1**	-	2
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	7.7%	0%	**3.3%**	-	0%	1.0%	0%	0%	**0.8%**	-	0.9%
Buses and Single-Unit Trucks	0	0	0	0	**0**	-	0	2	0	0	**2**	-	0	0	1	0	**1**	-	0	0	0	0	**0**	-	3
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	-	0%	3.4%	0%	0%	**2.7%**	-	0%	0%	7.7%	0%	**3.3%**	-	0%	0%	0%	0%	**0%**	-	1.3%
Pedestrians	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Imperial Blvd at Silent Manor Dr - TMC

Thu Jan 27, 2022
AM Peak (7:30 AM - 8:30 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 918856, Location: 29.624878, -95.642032

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



Imperial Blvd at Silent Manor Dr - TMC

Thu Jan 27, 2022
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 918856, Location: 29.624878, -95.642032

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

Leg / Direction	Silent Manor Dr Southbound						Imperial Blvd Westbound						Silent Manor Dr Northbound						Imperial Blvd Eastbound						
Time	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	**Int**
2022-01-27 4:30PM	1	0	0	0	**1**	1	3	39	3	1	**46**	0	4	0	1	0	**5**	1	2	13	3	0	**18**	0	**70**
4:45PM	1	0	0	0	**1**	1	2	53	0	0	**55**	1	2	0	3	0	**5**	1	2	17	2	0	**21**	4	**82**
5:00PM	0	0	1	0	**1**	2	1	54	5	1	**61**	0	3	0	5	0	**8**	1	2	17	1	1	**21**	0	**91**
5:15PM	0	1	1	0	**2**	1	0	50	4	2	**56**	0	3	0	3	0	**6**	2	4	13	1	1	**19**	1	**83**
Total	2	1	2	0	**5**	5	6	196	12	4	**218**	1	12	0	12	0	**24**	5	10	60	7	2	**79**	5	**326**
% Approach	40.0%	20.0%	40.0%	0%	**-**	-	2.8%	89.9%	5.5%	1.8%	**-**	-	50.0%	0%	50.0%	0%	**-**	-	12.7%	75.9%	8.9%	2.5%	**-**	-	-
% Total	0.6%	0.3%	0.6%	0%	**1.5%**	-	1.8%	60.1%	3.7%	1.2%	**66.9%**	-	3.7%	0%	3.7%	0%	**7.4%**	-	3.1%	18.4%	2.1%	0.6%	**24.2%**	-	-
PHF	0.500	0.250	0.500	-	**0.625**	-	0.500	0.907	0.600	0.500	**0.893**	-	0.750	-	0.600	-	**0.750**	-	0.625	0.882	0.583	0.500	**0.940**	-	0.896
Lights	2	1	2	0	**5**	-	6	196	12	4	**218**	-	12	0	11	0	**23**	-	10	60	7	2	**79**	-	325
% Lights	100%	100%	100%	0%	**100%**	-	100%	100%	100%	100%	**100%**	-	100%	0%	91.7%	0%	**95.8%**	-	100%	100%	100%	100%	**100%**	-	99.7%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	1	0	**1**	-	0	0	0	0	**0**	-	1
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	8.3%	0%	**4.2%**	-	0%	0%	0%	0%	**0%**	-	0.3%
Pedestrians	-	-	-	-	-	4	-	-	-	-	-	1	-	-	-	-	-	5	-	-	-	-	-	5	
% Pedestrians	-	-	-	-	-	80.0%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	20.0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Imperial Blvd at Silent Manor Dr - TMC
Thu Jan 27, 2022
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 918856, Location: 29.624878, -95.642032

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
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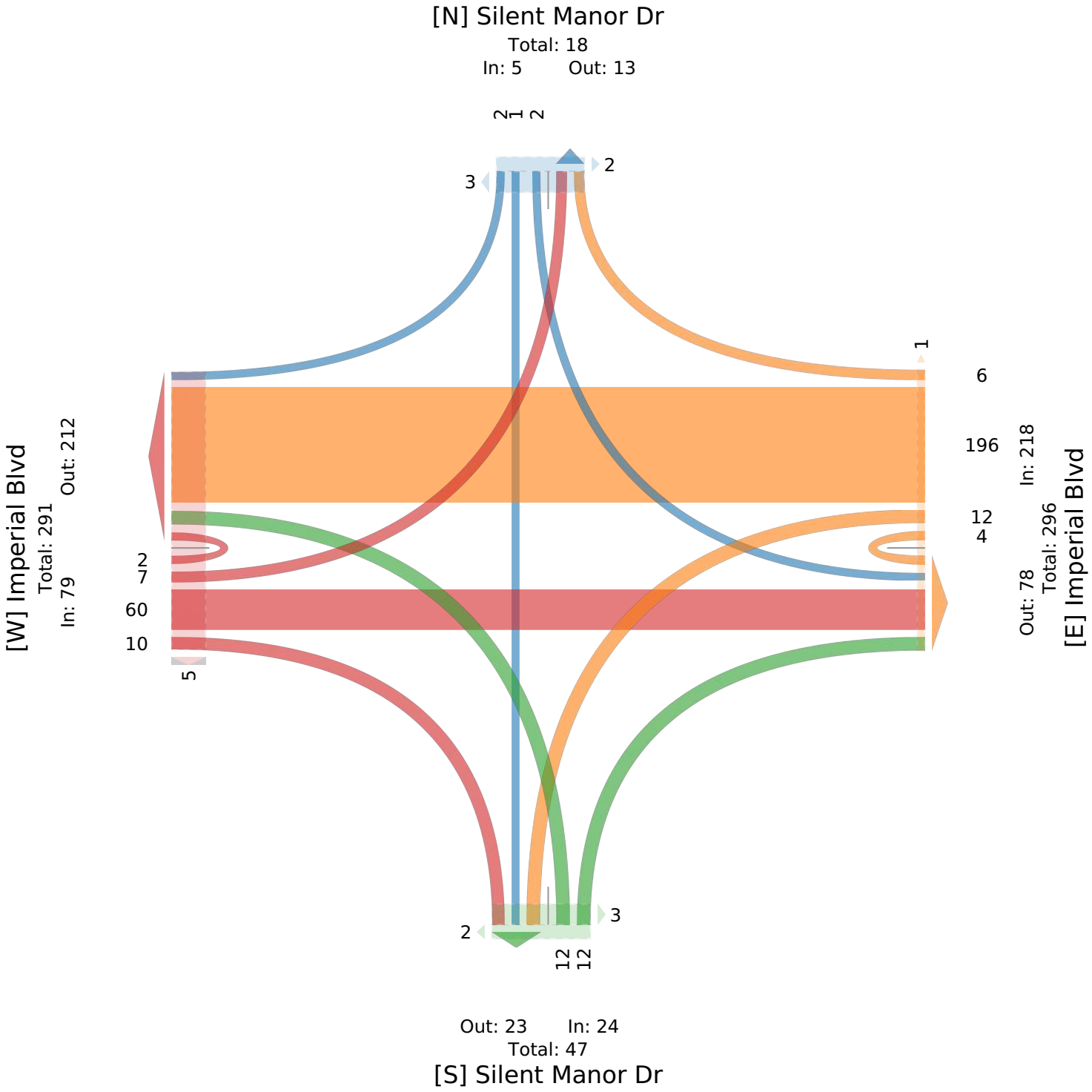


Imperial at Silent Manor - Saturday - TMC

Sat Feb 19, 2022
Full Length (1 PM-3 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 925801, Location: 29.624871, -95.642035

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

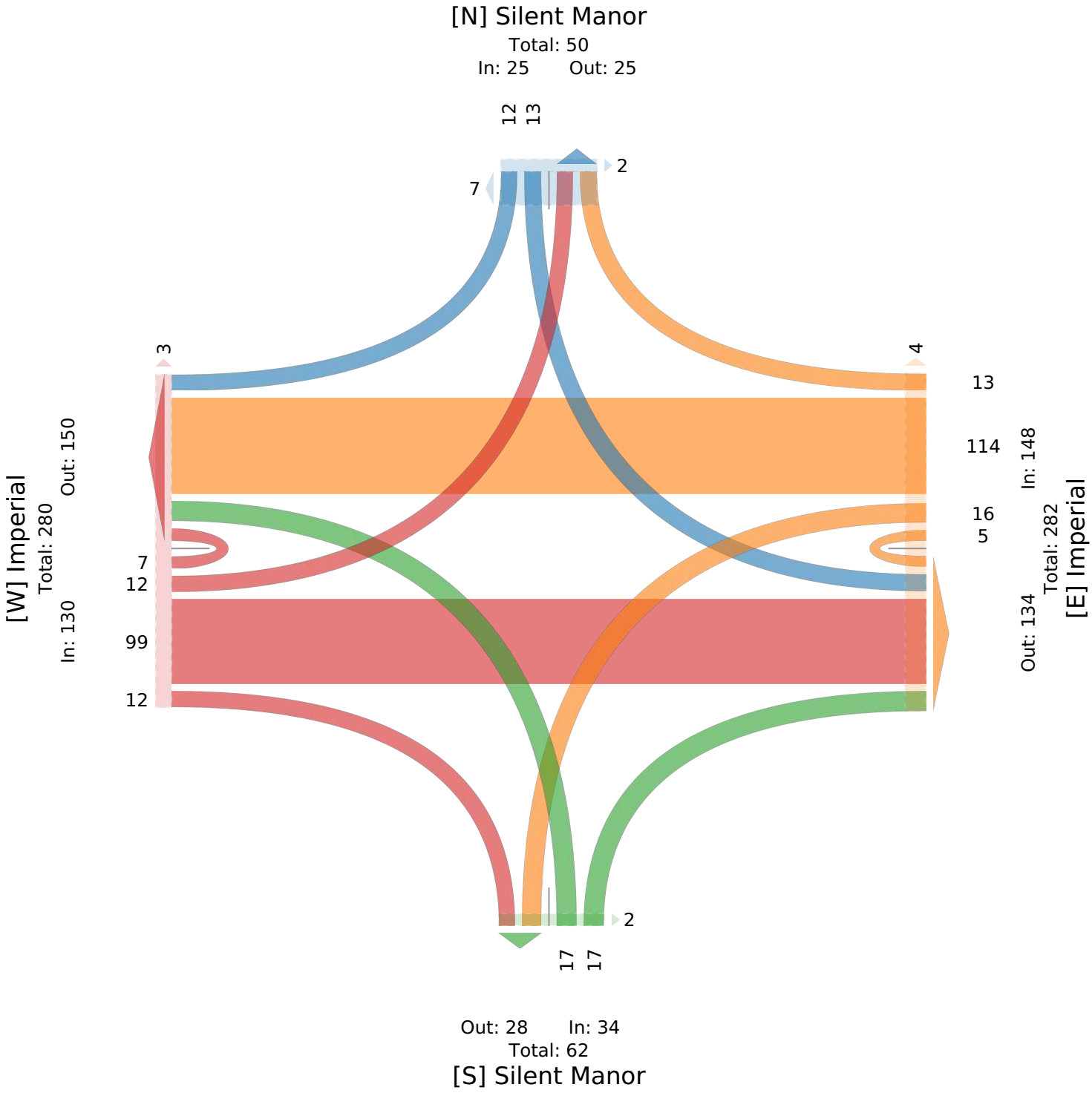
Leg / Direction	Silent Manor Southbound						Imperial Westbound						Silent Manor Northbound						Imperial Eastbound						
Time	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	**Int**
2022-02-19 1:00PM	3	0	1	0	**4**	2	0	20	1	0	**21**	1	2	0	0	0	**2**	0	1	12	1	1	**15**	0	**42**
1:15PM	3	0	4	0	**7**	0	2	17	3	1	**23**	0	4	0	4	0	**8**	0	1	12	1	3	**17**	3	**55**
1:30PM	1	0	1	0	**2**	1	1	8	4	3	**16**	0	2	0	1	0	**3**	0	2	11	2	0	**15**	0	**36**
1:45PM	1	0	3	0	**4**	0	3	14	2	0	**19**	0	3	0	5	0	**8**	0	3	13	1	0	**17**	0	**48**
Hourly Total	8	0	9	0	**17**	3	6	59	10	4	**79**	1	11	0	10	0	**21**	0	7	48	5	4	**64**	3	**181**
2:00PM	2	0	1	0	**3**	4	2	15	3	0	**20**	0	4	0	1	0	**5**	0	1	11	4	2	**18**	0	**46**
2:15PM	1	0	1	0	**2**	0	4	8	0	1	**13**	2	0	0	1	0	**1**	2	2	16	2	1	**21**	0	**37**
2:30PM	1	0	2	0	**3**	1	1	23	1	0	**25**	0	2	0	2	0	**4**	0	1	11	0	0	**12**	0	**44**
2:45PM	0	0	0	0	**0**	1	0	9	2	0	**11**	1	0	0	3	0	**3**	0	1	13	1	0	**15**	0	**29**
Hourly Total	4	0	4	0	**8**	6	7	55	6	1	**69**	3	6	0	7	0	**13**	2	5	51	7	3	**66**	0	**156**
Total	12	0	13	0	**25**	9	13	114	16	5	**148**	4	17	0	17	0	**34**	2	12	99	12	7	**130**	3	**337**
% Approach	48.0%	0%	52.0%	0%	**-**	-	8.8%	77.0%	10.8%	3.4%	**-**	-	50.0%	0%	50.0%	0%	**-**	-	9.2%	76.2%	9.2%	5.4%	**-**	-	**-**
% Total	3.6%	0%	3.9%	0%	**7.4%**	-	3.9%	33.8%	4.7%	1.5%	**43.9%**	-	5.0%	0%	5.0%	0%	**10.1%**	-	3.6%	29.4%	3.6%	2.1%	**38.6%**	-	**-**
Lights	11	0	13	0	**24**	-	13	113	16	5	**147**	-	17	0	17	0	**34**	-	11	98	12	7	**128**	-	333
% Lights	91.7%	0%	100%	0%	**96.0%**	-	100%	99.1%	100%	100%	**99.3%**	-	100%	0%	100%	0%	**100%**	-	91.7%	99.0%	100%	100%	**98.5%**	-	98.8%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	1	0	0	0	**1**	-	0	1	0	0	**1**	-	0	0	0	0	**0**	-	1	1	0	0	**2**	-	4
% Buses and Single-Unit Trucks	8.3%	0%	0%	0%	**4.0%**	-	0%	0.9%	0%	0%	**0.7%**	-	0%	0%	0%	0%	**0%**	-	8.3%	1.0%	0%	0%	**1.5%**	-	1.2%
Pedestrians	-	-	-	-	-	9	-	-	-	-	-	4	-	-	-	-	-	2	-	-	-	-	-	3	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Imperial at Silent Manor - Saturday - TMC

Sat Feb 19, 2022
Full Length (1 PM-3 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 925801, Location: 29.624871, -95.642035

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



Imperial at Silent Manor - Saturday - TMC

Sat Feb 19, 2022
Midday Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 925801, Location: 29.624871, -95.642035

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

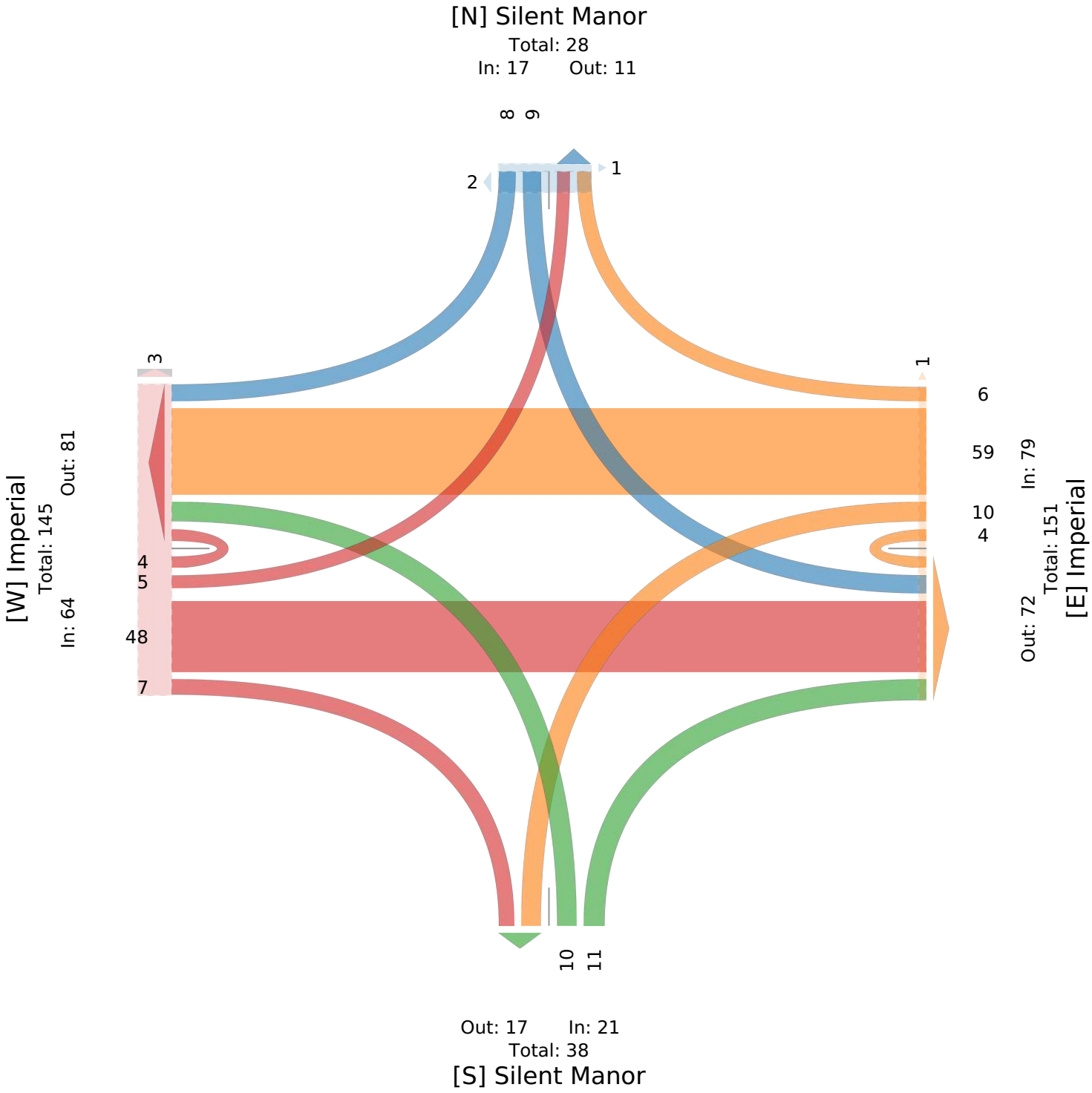
Leg / Direction	Silent Manor Southbound						Imperial Westbound						Silent Manor Northbound						Imperial Eastbound						
Time	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	**Int**
2022-02-19 1:00PM	3	0	1	0	**4**	2	0	20	1	0	**21**	1	2	0	0	0	**2**	0	1	12	1	1	**15**	0	**42**
1:15PM	3	0	4	0	**7**	0	2	17	3	1	**23**	0	4	0	4	0	**8**	0	1	12	1	3	**17**	3	**55**
1:30PM	1	0	1	0	**2**	1	1	8	4	3	**16**	0	2	0	1	0	**3**	0	2	11	2	0	**15**	0	**36**
1:45PM	1	0	3	0	**4**	0	3	14	2	0	**19**	0	3	0	5	0	**8**	0	3	13	1	0	**17**	0	**48**
Total	8	0	9	0	**17**	3	6	59	10	4	**79**	1	11	0	10	0	**21**	0	7	48	5	4	**64**	3	**181**
% Approach	47.1%	0%	52.9%	0%	**-**	-	7.6%	74.7%	12.7%	5.1%	**-**	-	52.4%	0%	47.6%	0%	**-**	-	10.9%	75.0%	7.8%	6.3%	**-**	-	**-**
% Total	4.4%	0%	5.0%	0%	**9.4%**	-	3.3%	32.6%	5.5%	2.2%	**43.6%**	-	6.1%	0%	5.5%	0%	**11.6%**	-	3.9%	26.5%	2.8%	2.2%	**35.4%**	-	**-**
PHF	0.667	-	0.563	-	**0.607**	-	0.500	0.738	0.625	0.333	**0.859**	-	0.688	-	0.500	-	**0.656**	-	0.583	0.923	0.625	0.333	**0.941**	-	0.823
Lights	7	0	9	0	**16**	-	6	58	10	4	**78**	-	11	0	10	0	**21**	-	6	47	5	4	**62**	-	177
% Lights	87.5%	0%	100%	0%	**94.1%**	-	100%	98.3%	100%	100%	**98.7%**	-	100%	0%	100%	0%	**100%**	-	85.7%	97.9%	100%	100%	**96.9%**	-	97.8%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	1	0	0	0	**1**	-	0	1	0	0	**1**	-	0	0	0	0	**0**	-	1	1	0	0	**2**	-	4
% Buses and Single-Unit Trucks	12.5%	0%	0%	0%	**5.9%**	-	0%	1.7%	0%	0%	**1.3%**	-	0%	0%	0%	0%	**0%**	-	14.3%	2.1%	0%	0%	**3.1%**	-	2.2%
Pedestrians	-	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	3	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Imperial at Silent Manor - Saturday - TMC

Sat Feb 19, 2022
Midday Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 925801, Location: 29.624871, -95.642035

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



Imperial at Silent Manor - Saturday - TMC

Sat Feb 19, 2022
PM Peak (WKND) (1:15 PM - 2:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 925801, Location: 29.624871, -95.642035

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

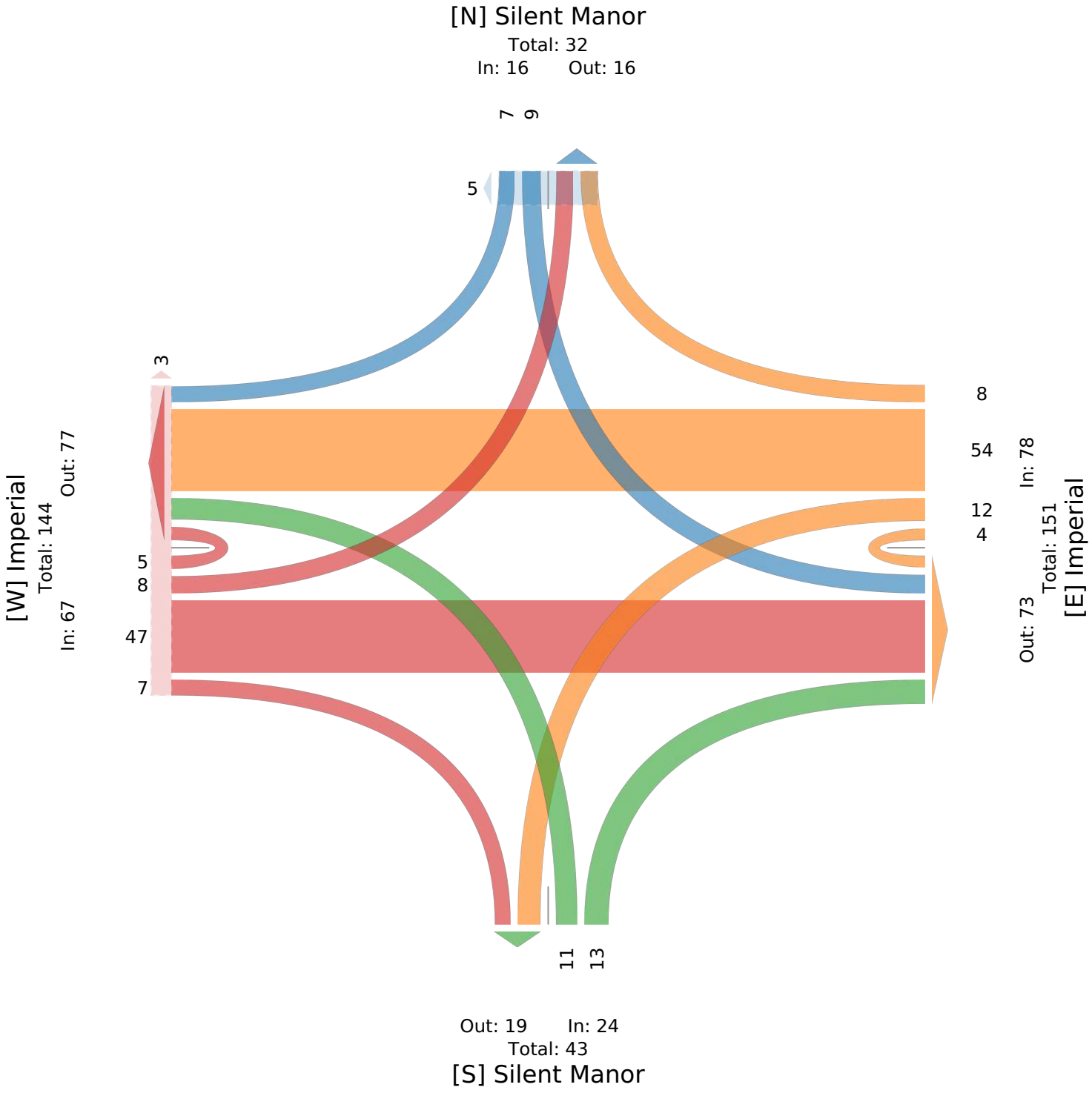
Leg	Silent Manor						Imperial						Silent Manor						Imperial						
Direction	Southbound						Westbound						Northbound						Eastbound						
Time	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	**Int**
2022-02-19 1:15PM	3	0	4	0	**7**	0	2	17	3	1	**23**	0	4	0	4	0	**8**	0	1	12	1	3	**17**	3	**55**
1:30PM	1	0	1	0	**2**	1	1	8	4	3	**16**	0	2	0	1	0	**3**	0	2	11	2	0	**15**	0	**36**
1:45PM	1	0	3	0	**4**	0	3	14	2	0	**19**	0	3	0	5	0	**8**	0	3	13	1	0	**17**	0	**48**
2:00PM	2	0	1	0	**3**	4	2	15	3	0	**20**	0	4	0	1	0	**5**	0	1	11	4	2	**18**	0	**46**
Total	7	0	9	0	**16**	5	8	54	12	4	**78**	0	13	0	11	0	**24**	0	7	47	8	5	**67**	3	**185**
% Approach	43.8%	0%	56.3%	0%	**-**	-	10.3%	69.2%	15.4%	5.1%	**-**	-	54.2%	0%	45.8%	0%	**-**	-	10.4%	70.1%	11.9%	7.5%	**-**	-	**-**
% Total	3.8%	0%	4.9%	0%	**8.6%**	-	4.3%	29.2%	6.5%	2.2%	**42.2%**	-	7.0%	0%	5.9%	0%	**13.0%**	-	3.8%	25.4%	4.3%	2.7%	**36.2%**	-	**-**
PHF	0.583	-	0.563	-	**0.571**	-	0.667	0.794	0.750	0.333	**0.848**	-	0.813	-	0.550	-	**0.750**	-	0.583	0.904	0.500	0.417	**0.931**	-	0.841
Lights	7	0	9	0	**16**	-	8	53	12	4	**77**	-	13	0	11	0	**24**	-	6	46	8	5	**65**	-	182
% Lights	100%	0%	100%	0%	**100%**	-	100%	98.1%	100%	100%	**98.7%**	-	100%	0%	100%	0%	**100%**	-	85.7%	97.9%	100%	100%	**97.0%**	-	98.4%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	0	0	0	0	**0**	-	0	1	0	0	**1**	-	0	0	0	0	**0**	-	1	1	0	0	**2**	-	3
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	-	0%	1.9%	0%	0%	**1.3%**	-	0%	0%	0%	0%	**0%**	-	14.3%	2.1%	0%	0%	**3.0%**	-	1.6%
Pedestrians	-	-	-	-	-	5	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Imperial at Silent Manor - Saturday - TMC

Sat Feb 19, 2022
PM Peak (WKND) (1:15 PM - 2:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 925801, Location: 29.624871, -95.642035

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



Location	Date	Hour	Time		NBL	NBT	NBR	NB Total		SBL	SBT	SBR	SB Total		EBU	EBL	EBT	EBR	EB Total		WBU	WBL	WBT	WBR	WB Total		VolTotal	
US90_Univ	1/27/2022	0	0:00		0	0	2	2		1	0	0	1			1	20	0	21			0	52	3	55		79	
US90_Univ	1/27/2022	0	0:15		0	2	0	2		1	4	0	5			0	14	0	14			0	47	1	48		69	
US90_Univ	1/27/2022	0	0:30		0	0	0	0		1	0	0	1			0	16	0	16			0	29	1	30		47	
US90_Univ	1/27/2022	0	0:45		0	0	0	0		0	0	0	0			0	10	0	10			0	39	0	39		49	244
US90_Univ	1/27/2022	1	1:00		0	0	1	1		1	0	0	1			0	10	0	10			0	24	5	29		41	206
US90_Univ	1/27/2022	1	1:15		0	1	0	1		0	1	0	1			0	13	0	13			0	14	1	15		30	167
US90_Univ	1/27/2022	1	1:30		0	0	3	3		3	6	0	9			0	17	2	19			0	19	0	19		50	170
US90_Univ	1/27/2022	1	1:45		0	0	2	2		0	0	0	0			1	6	0	7			0	21	0	21		30	151
US90_Univ	1/27/2022	2	2:00		0	0	2	2		2	0	1	3			0	11	0	11			0	14	1	15		31	141
US90_Univ	1/27/2022	2	2:15		0	2	0	2		4	9	0	13			0	13	0	13			0	6	0	6		34	145
US90_Univ	1/27/2022	2	2:30		0	0	0	0		0	0	0	0			0	8	0	8			0	8	2	10		18	113
US90_Univ	1/27/2022	2	2:45		0	0	0	0		0	0	0	0			0	20	0	20			0	15	0	15		35	118
US90_Univ	1/27/2022	3	3:00		0	0	3	3		0	0	0	0			1	21	0	22			0	24	0	24		49	136
US90_Univ	1/27/2022	3	3:15		1	0	0	1		0	2	0	2			0	23	0	23			0	18	0	18		44	146
US90_Univ	1/27/2022	3	3:30		0	0	2	2		0	0	0	0			1	37	1	39			1	21	0	22		63	191
US90_Univ	1/27/2022	3	3:45		0	1	3	4		0	0	0	0			0	31	0	31			2	15	0	17		52	208
US90_Univ	1/27/2022	4	4:00		0	0	2	2		1	2	1	4			0	38	0	38			2	23	0	25		69	228
US90_Univ	1/27/2022	4	4:15		0	0	1	1		1	0	1	2			1	68	0	69			1	18	0	19		91	275
US90_Univ	1/27/2022	4	4:30		0	0	0	0		1	0	1	2			0	75	0	75			2	25	0	27		104	316
US90_Univ	1/27/2022	4	4:45		0	0	3	3		1	2	1	4			0	92	0	92			0	35	1	36		135	399
US90_Univ	1/27/2022	5	5:00		0	1	2	3		3	2	1	6			0	122	1	123			0	31	0	31		163	493
US90_Univ	1/27/2022	5	5:15		0	1	8	9		2	1	0	3			2	182	1	185			1	56	3	60		257	659
US90_Univ	1/27/2022	5	5:30		0	0	6	6		1	3	0	4			1	184	4	189			5	68	2	75		274	829
US90_Univ	1/27/2022	5	5:45		1	5	9	15		1	4	1	6			1	241	1	243			7	82	3	92		356	1050
US90_Univ	1/27/2022	6	6:00		1	2	11	14		2	5	2	9			5	269	0	274			7	104	5	116		413	1300
US90_Univ	1/27/2022	6	6:15		1	5	9	15		3	3	5	11			8	306	1	315			11	176	3	190		531	1574
US90_Univ	1/27/2022	6	6:30		2	7	15	24		7	1	2	10			4	472	1	477			19	209	13	241		752	2052
US90_Univ	1/27/2022	6	6:45		0	5	27	32		6	12	1	19			12	479	4	495			10	249	11	270		816	2512
US90_Univ	1/27/2022	7	7:00		0	4	35	39		12	4	6	22			6	476	3	485			22	267	7	296		842	2941
US90_Univ	1/27/2022	7	7:15		1	21	60	82		11	10	11	32			10	518	3	531			26	318	15	359		1,004	3414
US90_Univ	1/27/2022	7	7:30		0	9	36	45		10	19	12	41			14	570	3	587			30	373	7	410		1,083	3745
US90_Univ	1/27/2022	7	7:45		3	15	44	62		14	15	5	34			15	502	5	522			48	371	14	433		1,051	3980
US90_Univ	1/27/2022	8	8:00		2	12	38	52		10	12	10	32			14	522	9	545			43	329	19	391		1,020	4,158
US90_University					6	57	178	241	0.734756	45	56	38	139	0.847561	0	53	2112	20	2185	0.930579	0	147	1391	55	1593	0.919746	4158	
US90_Univ	1/27/2022	8	8:15	(Blank)	4	14	39	57	(Blank)	12	10	5	27	(Blank)		16	504	8	528	(Blank)		39	309	21	369		981	8,293
US90_Univ	1/27/2022	8	8:30	(Blank)	3	15	40	58	(Blank)	15	10	10	35	(Blank)		12	467	6	485	(Blank)		33	271	18	322		900	8110
US90_Univ	1/27/2022	8	8:45	(Blank)	0	15	41	56	(Blank)	17	17	4	38	(Blank)		11	437	6	454	(Blank)		33	237	15	285		833	7892
US90_Univ	1/27/2022	9	9:00	(Blank)	2	15	36	53	(Blank)	7	15	8	30	(Blank)		16	353	6	375	(Blank)		42	260	11	313		771	3485
US90_Univ	1/27/2022	9	9:15	(Blank)	4	8	41	53	(Blank)	6	14	8	28	(Blank)		13	318	8	339	(Blank)		29	259	12	300		720	3224
US90_Univ	1/27/2022	9	9:30	(Blank)	7	7	53	67	(Blank)	8	13	8	29	(Blank)		12	283	6	301	(Blank)		41	278	9	328		725	3049
US90_Univ	1/27/2022	9	9:45	(Blank)	6	9	54	69	(Blank)	6	21	9	36	(Blank)		11	336	4	351	(Blank)		26	251	9	286		742	2958
US90_Univ	1/27/2022	10	10:00	(Blank)	1	8	39	48	(Blank)	6	13	5	24	(Blank)		9	285	9	303	(Blank)		31	203	9	243		618	2805
US90_Univ	1/27/2022	10	10:15	(Blank)	7	8	51	66	(Blank)	4	24	8	36	(Blank)		8	349	6	363	(Blank)		46	219	6	271		736	2821
US90_Univ	1/27/2022	10	10:30	(Blank)	5	11	34	50	(Blank)	9	13	9	31	(Blank)		6	289	8	303	(Blank)		28	250	12	290		674	2770
US90_Univ	1/27/2022	10	10:45	(Blank)	6	15	38	59	(Blank)	14	16	7	37	(Blank)		6	335	10	351	(Blank)		34	228	9	271		718	2746
US90_Univ	1/27/2022	11	11:00	(Blank)	4	15	52	71	(Blank)	9	17	8	34	(Blank)		6	272	9	287	(Blank)		43	242	6	291		683	2811
US90_Univ	1/27/2022	11	11:15	(Blank)	2	15	44	61	(Blank)	4	11	12	27	(Blank)		5	276	5	286	(Blank)		39	256	5	300		674	2749
US90_Univ	1/27/2022	11	11:30	(Blank)	4	15	46	65	(Blank)	11	18	9	38	(Blank)		10	257	9	276	(Blank)		42	304	9	355		734	2809
US90_Univ	1/27/2022	11	11:45	(Blank)	2	12	48	62	(Blank)	16	29	12	57	(Blank)		15	286	8	309	(Blank)		47	293	5	345		773	2864
US90_Univ	1/27/2022	12	12:00	(Blank)	5	14	59	78	(Blank)	9	18	23	50	(Blank)		16	302	4	322	(Blank)		36	267	7	310		760	2941
US90_Univ	1/27/2022	12	12:15	(Blank)	3	17	58	78	(Blank)	7	19	11	37	(Blank)		16	313	8	337	(Blank)		36	276	9	321		773	3040
US90_Univ	1/27/2022	12	12:30	(Blank)	9	23	62	94	(Blank)	8	22	8	38	(Blank)		12	278	5	295	(Blank)		52	308	13	373		800	3106
US90_Univ	1/27/2022	12	12:45	(Blank)	6	22	55	83	(Blank)	12	16	9	37	(Blank)		9	268	3	280	(Blank)		61	299	10	370		770	3103
US90_Univ	1/27/2022	13	13:00	(Blank)	1	23	60	84	(Blank)	8	15	11	34	(Blank)		8	263	2	273	(Blank)		51	276	6	333		724	3067
US90_Univ	1/27/2022	13	13:15	(Blank)	5	12	48	65	(Blank)	9	13	7	29	(Blank)		12	310	7	329	(Blank)		36	271	10	317		740	3034
US90_Univ	1/27/2022	13	13:30	(Blank)	2	22	51	75	(Blank)	8	18	3	29	(Blank)		12	278	2	292	(Blank)		40	304	6	350		746	2980
US90_Univ	1/27/2022	13	13:45	(Blank)	2	23	57	82	(Blank)	11	12	6	29	(Blank)		10	280	3	293	(Blank)		48	263	8	319		723	2933
US90_Univ	1/27/2022	14	14:00	(Blank)	4	17	56	77	(Blank)	8	15	6	29	(Blank)		13	251	5	269	(Blank)		51	375	6	432		807	3016
US90_Univ	1/27/2022	14	14:15	(Blank)	10	20	50	80	(Blank)	10	14	10	34	(Blank)		13	271	6	290	(Blank)		53	356	7	416		820	3096
US90_Univ	1/27/2022	14	14:30	(Blank)	3	21	81	105	(Blank)	11	22	13	46	(Blank)		16	275	5	296	(Blank)		47	347	13	407		854	3204
US90_Univ	1/27/2022	14	14:45	(Blank)	6	24	73	103	(Blank)	11	5	10	26	(Blank)		13	274	4	291	(Blank)		49	432	5	486		906	3387
US90_Univ	1/27/2022	15	15:00	(Blank)	6	19	104	129	(Blank)	15	36	6	57	(Blank)		13	306	3	322	(Blank)		38	464	9	511		1,019	3599
US90_Univ	1/27/2022	15	15:15	(Blank)	3	13	105	121	(Blank)	9	16	9	34	(Blank)		11	349	5	365	(Blank)		56	546	7	609		1,129	3908
US90_Univ	1/27/2022	15	15:30	(Blank)	3	17	118	138	(Blank)	13	17	5	35	(Blank)		15	274	6	295	(Blank)		47	442	19	508		976	4030
US90_Univ	1/27/2022	15	15:45	(Blank)	4	22	103	129	(Blank)	14	19	6	39	(Blank)		18	369	7	394	(Blank)		69	588	16	673		1,235	4359
US90_Univ	1/27/2022	16	16:00	(Blank)	7	26	108	141	(Blank)	17	27	20	64	(Blank)		12	345	7	364	(Blank)		70	695	16	781		1,350	4690
US90_Univ	1/27/2022	16	16:15	(Blank)	5	32	123	160	(Blank)	12	16	13	41	(Blank)		20	418	6	444	(Blank)		67	583	15	665		1,310	4871
US90_Univ	1/27/2022	16	16:30	(Blank)	2	30	108	140	(Blank)	13	25	14	52	(Blank)		15	373	3	391	(Blank)		69	668	20	757		1,340	5235
US90_Univ	1/27/2022	16	16:45	(Blank)	4	29	101	134	(Blank)	21	25	7	53	(Blank)		23	405	3	431	(Blank)		63	622	25	710		1,328	5328
US90_Univ	1/27/2022	17	17:00	(Blank)	10	31	130	171	(Blank)	25	30	14	69	(Blank)		11	399	3	413	(Blank)		76	614	12	702		1,355	5333
US90_Univ	1/27/2022	17	17:15	(Blank)	2	38	111	151	(Blank)	15	28	16	59	(Blank)		15	424	1	440	(Blank)		66	593	16	675		1,325	5348
US90_Univ	1/27/2022	17	17:30	(Blank)	1	26	74	101	(Blank)	20	22	11	53	(Blank)		16	368	2	386	(Blank)		56	681	22	759		1,299	5307
US90_Univ	1/27/2022	17	17:45	(Blank)	6	27	58	91	(Blank)	15	19	8	42	(Blank)		26	328	5	359	(Blank)		45	594	16	655		1,147	5,126
US90_University					19	122	373	514	0.751462	75	99	49	223	0.807971	0	68	1519	11	1598	0.907955	0	243	2482	66	2791	0.919302	5126	
US90_Univ	1/27/2022	18	18:00	(Blank)	8	25	58	91	(Blank)	5	22	9	36	(Blank)		19	290	3	312	(Blank)		54	557	16	627		1,066	9963
US90_Univ	1/27/2022	18	18:15	(Blank)	4	19	45	68	(Blank)	8	25	7	40	(Blank)		13	311	1	325	(Blank)		31	575	16	622		1,055	9693
US90_Univ	1/27/2022	18	18:30	(Blank)	2	16	39	57	(Blank)	6	18	4	28	(Blank)		10	291	3	304	(Blank)		48	513	7	568		957	9351
US90_Univ	1/27/2022	18	18:45	(Blank)	5	12	34	51	(Blank)	11	20	8	39	(Blank)		9	238	5	252	(Blank)		35	460	9	504		846	3924
US90_Univ	1/27/2022	19	19:00	(Blank)	2	14	42	58	(Blank)	5	11	3	19	(Blank)		14	218	3	235	(Blank)		28	375	9	412		724	3582
US90_Univ	1/27/2022	19	19:15	(Blank)	0	18	31	49	(Blank)	6	10	5	21	(Blank)		10	170	3	183	(Blank)		34	390	17	441		694	3221
US90_Univ	1/27/2022	19	19:30	(Blank)	5	6	30	41	(Blank)	3	10	2	15	(Blank)		9	152	0	161	(Blank)		32	364	12	408		625	2889
US90_Univ	1/27/2022	19	19:45	(Blank)	5	18	16	39	(Blank)	1	14	10	25	(Blank)		12	152	2	166	(Blank)		12	320	12	344		574	2617
US90_Univ	1/27/2022	20	20:00	(Blank)	1	12	24	37	(Blank)	0	9	5	14	(Blank)		6	130	0	136	(Blank)		23	310	9	342		529	2422
US90_Univ	1/27/2022	20	20:15	(Blank)	1	13	19	33	(Blank)	9	12	3	24	(Blank)		7	146	0	153	(Blank)		17	293	12	322		532	2260
US90_Univ	1/27/2022	20	20:30	(Blank)	1	14	8	23	(Blank)	2	7	4	13	(Blank)		13	130	2	145	(Blank)		9	238	5	252		433	2068
US90_Univ	1/27/2022	20	20:45	(Blank)	0	10	15	25	(Blank)	0	5	2	7	(Blank)		8	104	3	115	(Blank)		12	259	10	281		428	1922
US90_Univ	1/27/2022	21	21:00	(Blank)	6	10	24	40	(Blank)	1	9	1	11	(Blank)		7	103	1	111	(Blank)		10	227	5	242		404	1797
US90_Univ	1/27/2022	21	21:15	(Blank)	1	3	13	17	(Blank)	1	6	0	7	(Blank)		4	94	1	99	(Blank)		7	199	3	209		332	1597
US90_Univ	1/27/2022	21	21:30	(Blank)	1	9	24	34	(Blank)	2	1	1	4	(Blank)		4	95	1	100	(Blank)		6	160	6	172		310	1474
US90_Univ	1/27/2022	21	21:45	(Blank)	2	3	8	13	(Blank)	3	4	1	8	(Blank)		1	68	1	70	(Blank)		6	145	4	155		246	1292
US90_Univ	1/27/2022	22	22:00	(Blank)	0	7	7	14	(Blank)	1	6	3	10	(Blank)		5	68	0	73	(Blank)		3	132	0	135		232	1120
US90_Univ	1/27/2022	22	22:15	(Blank)	0	5	8	13	(Blank)	0	1	2	3	(Blank)		1	84	0	85	(Blank)		6	113	4	123		224	1012
US90_Univ	1/27/2022	22	22:30	(Blank)	0	4	5	9	(Blank)	0	0	1	1	(Blank)		0	62	0	62	(Blank)		4	100	5	109		181	883
US90_Univ	1/27/2022	22	22:45	(Blank)	0	2	6	8	(Blank)	0	2	1	3	(Blank)		1	54	0	55	(Blank)		2	113	0	115		181	818
US90_Univ	1/27/2022	23	23:00	(Blank)	0	2	7	9	(Blank)	1	0	0	1	(Blank)		0	52	0	52	(Blank)		2	74	0	76		138	724
US90_Univ	1/27/2022	23	23:15	(Blank)	0	4	1	5	(Blank)	1	0	2	3	(Blank)		0	31	0	31	(Blank)		1	82	3	86		125	625
	1/27/2022	23	23:30	(Blank)	0	0	3	3	(Blank)	3	2	0	5	(Blank)		1	32	0	33	(Blank)		0	68	1	69		110	554
	1/27/2022	23	23:45	(Blank)	0	0	2	2	(Blank)	0	0	1	1	(Blank)		1	33	0	34	(Blank)		2	73	2	77		114	487

Location	Date	Hour	Time		NBL	NBT	NBR	NB Total		SBL	SBT	SBR	SB Total		EBL	EBT	EBR	EB Total		WBL	WBT	WBR	WB Total	VolTotal	
US90_Univ	2/19/2022	0	0:00	(Blank)	1	7	6	14	(Blank)	1	0	0	1	(Blank)	0	62	0	62	(Blank)	0	72	1	73	150	
US90_Univ	2/19/2022	0	0:15	(Blank)	0	2	8	10	(Blank)	0	0	0	0	(Blank)	1	41	1	43	(Blank)	1	87	4	92	145	
US90_Univ	2/19/2022	0	0:30	(Blank)	0	2	3	5	(Blank)	1	0	0	1	(Blank)	0	38	0	38	(Blank)	0	69	1	70	114	
US90_Univ	2/19/2022	0	0:45	(Blank)	0	2	0	2	(Blank)	2	2	0	4	(Blank)	0	22	0	22	(Blank)	0	80	0	80	108	517
US90_Univ	2/19/2022	1	1:00	(Blank)	0	2	2	4	(Blank)	1	0	0	1	(Blank)	1	21	0	22	(Blank)	1	70	0	71	98	465
US90_Univ	2/19/2022	1	1:15	(Blank)	0	2	0	2	(Blank)	0	0	0	0	(Blank)	2	22	0	24	(Blank)	1	50	0	51	77	397
US90_Univ	2/19/2022	1	1:30	(Blank)	0	1	1	2	(Blank)	1	0	0	1	(Blank)	1	27	0	28	(Blank)	0	42	3	45	76	359
US90_Univ	2/19/2022	1	1:45	(Blank)	0	0	1	1	(Blank)	1	2	1	4	(Blank)	2	19	0	21	(Blank)	1	32	2	35	61	312
US90_Univ	2/19/2022	2	2:00	(Blank)	0	0	1	1	(Blank)	1	0	2	3	(Blank)	0	10	0	10	(Blank)	1	36	2	39	53	267
US90_Univ	2/19/2022	2	2:15	(Blank)	0	1	2	3	(Blank)	0	1	0	1	(Blank)	1	21	0	22	(Blank)	0	42	0	42	68	258
US90_Univ	2/19/2022	2	2:30	(Blank)	0	2	2	4	(Blank)	0	1	0	1	(Blank)	0	24	0	24	(Blank)	0	45	1	46	75	257
US90_Univ	2/19/2022	2	2:45	(Blank)	0	0	1	1	(Blank)	0	4	0	4	(Blank)	2	31	0	33	(Blank)	1	37	0	38	76	272
US90_Univ	2/19/2022	3	3:00	(Blank)	0	1	0	1	(Blank)	2	0	0	2	(Blank)	1	33	0	34	(Blank)	1	29	1	31	68	287
US90_Univ	2/19/2022	3	3:15	(Blank)	0	0	2	2	(Blank)	0	0	0	0	(Blank)	0	26	0	26	(Blank)	0	24	0	24	52	271
US90_Univ	2/19/2022	3	3:30	(Blank)	0	1	0	1	(Blank)	1	0	1	2	(Blank)	0	20	0	20	(Blank)	5	20	1	26	49	245
US90_Univ	2/19/2022	3	3:45	(Blank)	0	0	2	2	(Blank)	0	2	0	2	(Blank)	0	24	0	24	(Blank)	4	28	0	32	60	229
US90_Univ	2/19/2022	4	4:00	(Blank)	0	1	1	2	(Blank)	1	0	0	1	(Blank)	0	21	0	21	(Blank)	2	25	0	27	51	212
US90_Univ	2/19/2022	4	4:15	(Blank)	0	1	0	1	(Blank)	8	16	1	25	(Blank)	0	26	0	26	(Blank)	1	22	1	24	76	236
US90_Univ	2/19/2022	4	4:30	(Blank)	0	0	0	0	(Blank)	0	0	0	0	(Blank)	0	52	0	52	(Blank)	0	22	1	23	75	262
US90_Univ	2/19/2022	4	4:45	(Blank)	0	1	2	3	(Blank)	0	0	0	0	(Blank)	0	52	0	52	(Blank)	0	32	0	32	87	289
US90_Univ	2/19/2022	5	5:00	(Blank)	0	0	0	0	(Blank)	0	0	1	1	(Blank)	0	47	1	48	(Blank)	1	33	0	34	83	321
US90_Univ	2/19/2022	5	5:15	(Blank)	0	0	4	4	(Blank)	0	0	0	0	(Blank)	0	49	1	50	(Blank)	0	24	0	24	78	323
US90_Univ	2/19/2022	5	5:30	(Blank)	0	1	3	4	(Blank)	1	0	2	3	(Blank)	1	95	0	96	(Blank)	2	40	0	42	145	393
US90_Univ	2/19/2022	5	5:45	(Blank)	0	1	4	5	(Blank)	5	10	0	15	(Blank)	1	119	0	120	(Blank)	5	62	1	68	208	514
US90_Univ	2/19/2022	6	6:00	(Blank)	0	0	7	7	(Blank)	5	2	2	9	(Blank)	3	105	1	109	(Blank)	4	66	3	73	198	629
US90_Univ	2/19/2022	6	6:15	(Blank)	0	0	2	2	(Blank)	4	7	2	13	(Blank)	0	117	0	117	(Blank)	9	94	2	105	237	788
US90_Univ	2/19/2022	6	6:30	(Blank)	0	0	4	4	(Blank)	4	3	0	7	(Blank)	3	148	0	151	(Blank)	9	118	1	128	290	933
US90_Univ	2/19/2022	6	6:45	(Blank)	1	1	13	15	(Blank)	8	6	1	15	(Blank)	1	153	1	155	(Blank)	12	113	2	127	312	1037
US90_Univ	2/19/2022	7	7:00	(Blank)	0	4	6	10	(Blank)	2	5	3	10	(Blank)	2	147	0	149	(Blank)	7	131	1	139	308	1147
US90_Univ	2/19/2022	7	7:15	(Blank)	0	1	7	8	(Blank)	3	1	5	9	(Blank)	3	242	1	246	(Blank)	12	177	3	192	455	1365
US90_Univ	2/19/2022	7	7:30	(Blank)	0	3	3	6	(Blank)	1	12	3	16	(Blank)	3	228	1	232	(Blank)	8	193	3	204	458	1533
US90_Univ	2/19/2022	7	7:45	(Blank)	1	2	20	23	(Blank)	4	2	1	7	(Blank)	4	266	0	270	(Blank)	8	188	0	196	496	1717
US90_Univ	2/19/2022	8	8:00	(Blank)	1	3	14	18	(Blank)	4	11	5	20	(Blank)	4	242	0	246	(Blank)	22	209	2	233	517	1926
US90_Univ	2/19/2022	8	8:15	(Blank)	1	1	18	20	(Blank)	3	7	3	13	(Blank)	8	238	4	250	(Blank)	21	190	2	213	496	1967
US90_Univ	2/19/2022	8	8:30	(Blank)	1	8	35	44	(Blank)	5	7	9	21	(Blank)	6	309	3	318	(Blank)	31	225	4	260	643	2152
US90_Univ	2/19/2022	8	8:45	(Blank)	5	4	14	23	(Blank)	6	13	3	22	(Blank)	10	300	2	312	(Blank)	27	240	4	271	628	2284
US90_Univ	2/19/2022	9	9:00	(Blank)	0	3	30	33	(Blank)	6	6	9	21	(Blank)	8	299	1	308	(Blank)	23	196	4	223	585	2352
US90_Univ	2/19/2022	9	9:15	(Blank)	3	7	38	48	(Blank)	7	16	5	28	(Blank)	7	332	3	342	(Blank)	33	244	4	281	699	2555
US90_Univ	2/19/2022	9	9:30	(Blank)	1	7	30	38	(Blank)	7	15	7	29	(Blank)	7	331	4	342	(Blank)	32	273	4	309	718	2630
US90_Univ	2/19/2022	9	9:45	(Blank)	2	7	39	48	(Blank)	8	13	5	26	(Blank)	9	369	2	380	(Blank)	37	284	4	325	779	2781
US90_Univ	2/19/2022	10	10:00	(Blank)	0	9	44	53	(Blank)	5	18	4	27	(Blank)	9	325	6	340	(Blank)	18	265	8	291	711	2907
US90_Univ	2/19/2022	10	10:15	(Blank)	1	16	42	59	(Blank)	1	12	5	18	(Blank)	12	310	8	330	(Blank)	51	306	3	360	767	2975
US90_Univ	2/19/2022	10	10:30	(Blank)	1	7	60	68	(Blank)	6	13	12	31	(Blank)	16	324	6	346	(Blank)	30	253	11	294	739	2996
US90_Univ	2/19/2022	10	10:45	(Blank)	2	16	49	67	(Blank)	3	18	7	28	(Blank)	17	372	8	397	(Blank)	37	293	7	337	829	3046
US90_Univ	2/19/2022	11	11:00	(Blank)	2	8	46	56	(Blank)	5	20	6	31	(Blank)	18	336	10	364	(Blank)	36	312	7	355	806	3141
US90_Univ	2/19/2022	11	11:15	(Blank)	3	16	44	63	(Blank)	10	34	8	52	(Blank)	9	352	7	368	(Blank)	48	335	4	387	870	3244
US90_Univ	2/19/2022	11	11:30	(Blank)	5	16	43	64	(Blank)	9	22	3	34	(Blank)	20	329	6	355	(Blank)	50	339	4	393	846	3351
US90_Univ	2/19/2022	11	11:45	(Blank)	0	19	50	69	(Blank)	6	15	5	26	(Blank)	15	356	7	378	(Blank)	39	308	9	356	829	3351
US90_Univ	2/19/2022	12	12:00	(Blank)	2	21	62	85	(Blank)	6	15	6	27	(Blank)	20	344	11	375	(Blank)	51	312	9	372	859	3404
US90_Univ	2/19/2022	12	12:15	(Blank)	7	12	61	80	(Blank)	8	16	8	32	(Blank)	23	331	9	363	(Blank)	55	333	8	396	871	3405
US90_Univ	2/19/2022	12	12:30	(Blank)	4	21	49	74	(Blank)	6	11	5	22	(Blank)	18	380	4	402	(Blank)	56	369	15	440	938	3497
US90_Univ	2/19/2022	12	12:45	(Blank)	7	19	60	86	(Blank)	4	19	3	26	(Blank)	13	340	4	357	(Blank)	44	346	10	400	869	3537
US90_Univ	2/19/2022	13	13:00	(Blank)	4	15	59	78	(Blank)	2	18	8	28	(Blank)	13	327	10	350	(Blank)	51	345	13	409	865	3543
US90_Univ	2/19/2022	13	13:15	(Blank)	4	23	62	89	(Blank)	6	5	4	15	(Blank)	25	341	7	373	(Blank)	42	440	5	487	964	3636
US90_Univ	2/19/2022	13	13:30	(Blank)	5	20	53	78	(Blank)	7	17	7	31	(Blank)	18	358	8	384	(Blank)	44	349	10	403	896	3594
US90_Univ	2/19/2022	13	13:45	(Blank)	5	18	51	74	(Blank)	10	14	10	34	(Blank)	28	357	2	387	(Blank)	41	388	5	434	929	3654
					18	76	225	319	0.896067	25	54	29	108	0.794118	84	1383	27	1494	0.965116	178	1522	33	1733	0.88963	
US90_Univ	2/19/2022	14	14:00	(Blank)	4	14	52	70	(Blank)	1	12	8	21	(Blank)	15	342	3	360	(Blank)	36	337	11	384	835	3624.89
US90_Univ	2/19/2022	14	14:15	(Blank)	8	12	56	76	(Blank)	6	11	8	25	(Blank)	14	349	5	368	(Blank)	42	385	6	433	902	3562.89
US90_Univ	2/19/2022	14	14:30	(Blank)	3	14	41	58	(Blank)	8	18	6	32	(Blank)	21	354	3	378	(Blank)	45	406	4	455	923	3589.89
US90_Univ	2/19/2022	14	14:45	(Blank)	1	11	41	53	(Blank)	9	16	12	37	(Blank)	15	321	7	343	(Blank)	36	388	7	431	864	3524
US90_Univ	2/19/2022	15	15:00	(Blank)	4	15	48	67	(Blank)	12	14	5	31	(Blank)	12	350	3	365	(Blank)	67	359	10	436	899	3588
US90_Univ	2/19/2022	15	15:15	(Blank)	7	21	49	77	(Blank)	10	17	9	36	(Blank)	26	299	8	333	(Blank)	42	353	9	404	850	3536
US90_Univ	2/19/2022	15	15:30	(Blank)	3	17	40	60	(Blank)	11	12	3	26	(Blank)	24	341	11	376	(Blank)	54	366	12	432	894	3507
US90_Univ	2/19/2022	15	15:45	(Blank)	2	23	54	79	(Blank)	16	21	19	56	(Blank)	15	357	4	376	(Blank)	28	377	9	414	925	3568
US90_Univ	2/19/2022	16	16:00	(Blank)	9	19	59	87	(Blank)	9	11	15	35	(Blank)	11	284	7	302	(Blank)	52	342	8	402	826	3495
US90_Univ	2/19/2022	16	16:15	(Blank)	7	24	42	73	(Blank)	5	9	4	18	(Blank)	25	329	5	359	(Blank)	43	378	10	431	881	3526
US90_Univ	2/19/2022	16	16:30	(Blank)	13	15	38	66	(Blank)	8	11	6	25	(Blank)	6	292	7	305	(Blank)	27	344	2	373	769	3401
US90_Univ	2/19/2022	16	16:45	(Blank)	3	15	53	71	(Blank)	9	16	10	35	(Blank)	15	337	3	355	(Blank)	35	324	7	366	827	3303
US90_Univ	2/19/2022	17	17:00	(Blank)	1	17	56	74	(Blank)	9	14	7	30	(Blank)	19	282	6	307	(Blank)	48	365	14	427	838	3315
US90_Univ	2/19/2022	17	17:15	(Blank)	8	11	50	69	(Blank)	4	8	7	19	(Blank)	15	327	6	348	(Blank)	30	325	11	366	802	3236
US90_Univ	2/19/2022	17	17:30	(Blank)	4	20	49	73	(Blank)	9	31	16	56	(Blank)	22	265	3	290	(Blank)	48	401	6	455	874	3341
US90_Univ	2/19/2022	17	17:45	(Blank)	3	15	39	57	(Blank)	9	13	10	32	(Blank)	14	322	5	341	(Blank)	39	343	8	390	820	3334
US90_Univ	2/19/2022	18	18:00	(Blank)	7	10	53	70	(Blank)	6	19	7	32	(Blank)	15	314	2	331	(Blank)	37	330	8	375	808	3304
US90_Univ	2/19/2022	18	18:15	(Blank)	1	17	36	54	(Blank)	10	20	10	40	(Blank)	17	281	3	301	(Blank)	26	391	11	428	823	3325
US90_Univ	2/19/2022	18	18:30	(Blank)	3	20	42	65	(Blank)	7	10	5	22	(Blank)	10	304	3	317	(Blank)	33	289	7	329	733	3184
US90_Univ	2/19/2022	18	18:45	(Blank)	4	12	44	60	(Blank)	10	11	3	24	(Blank)	16	274	4	294	(Blank)	43	308	7	358	736	3100
US90_Univ	2/19/2022	19	19:00	(Blank)	3	16	32	51	(Blank)	5	10	2	17	(Blank)	5	254	4	263	(Blank)	23	297	10	330	661	2953
US90_Univ	2/19/2022	19	19:15	(Blank)	0	15	23	38	(Blank)	9	16	7	32	(Blank)	8	217	5	230	(Blank)	21	306	8	335	635	2765
US90_Univ	2/19/2022	19	19:30	(Blank)	3	10	23	36	(Blank)	3	12	6	21	(Blank)	7	210	2	219	(Blank)	17	287	9	313	589	2621
US90_Univ	2/19/2022	19	19:45	(Blank)	2	13	27	42	(Blank)	6	8	7	21	(Blank)	12	168	2	182	(Blank)	9	310	10	329	574	2459
US90_Univ	2/19/2022	20	20:00	(Blank)	1	8	18	27	(Blank)	14	20	10	44	(Blank)	12	182	3	197	(Blank)	18	277	9	304	572	2370
US90_Univ	2/19/2022	20	20:15	(Blank)	6	8	27	41	(Blank)	9	17	9	35	(Blank)	8	165	2	175	(Blank)	21	261	6	288	539	2274
US90_Univ	2/19/2022	20	20:30	(Blank)	2	12	25	39	(Blank)	3	7	4	14	(Blank)	10	161	3	174	(Blank)	15	218	8	241	468	2153
US90_Univ	2/19/2022	20	20:45	(Blank)	1	8	19	28	(Blank)	5	5	4	14	(Blank)	7	148	5	160	(Blank)	3	204	3	210	412	1991
US90_Univ	2/19/2022	21	21:00	(Blank)	2	11	19	32	(Blank)	4	13	4	21	(Blank)	6	135	2	143	(Blank)	11	171	1	183	379	1798
US90_Univ	2/19/2022	21	21:15	(Blank)	2	6	19	27	(Blank)	2	4	1	7	(Blank)	8	158	1	167	(Blank)	14	205	9	228	429	1688
US90_Univ	2/19/2022	21	21:30	(Blank)	3	8	19	30	(Blank)	0	3	1	4	(Blank)	5	104	3	112	(Blank)	7	184	7	198	344	1564
US90_Univ	2/19/2022	21	21:45	(Blank)	3	7	14	24	(Blank)	0	5	2	7	(Blank)	12	131	1	144	(Blank)	7	198	5	210	385	1537
US90_Univ	2/19/2022	22	22:00	(Blank)	3	5	9	17	(Blank)	2	5	1	8	(Blank)	8	114	4	126	(Blank)	8	183	8	199	350	1508
US90_Univ	2/19/2022	22	22:15	(Blank)	1	6	15	22	(Blank)	6	8	5	19	(Blank)	6	142	2	150	(Blank)	14	164	4	182	373	1452
US90_Univ	2/19/2022	22	22:30	(Blank)	5	5	7	17	(Blank)	7	14	0	21	(Blank)	6	103	2	111	(Blank)	8	149	6	163	312	1420
US90_Univ	2/19/2022	22	22:45	(Blank)	1	5	11	17	(Blank)	4	3	0	7	(Blank)	3	106	0	109	(Blank)	4	115	6	125	258	1293
US90_Univ	2/19/2022	23	23:00	(Blank)	1	3	7	11	(Blank)	2	5	0	7	(Blank)	3	73	2	78	(Blank)	1	117	5	123	219	1162
US90_Univ	2/19/2022	23	23:15	(Blank)	2	6	4	12	(Blank)	0	2	0	2	(Blank)	1	73	0	74	(Blank)	0	99	1	100	188	977
US90_Univ	2/19/2022	23	23:30	(Blank)	0	3	4	7	(Blank)	0	3	0	3	(Blank)	5	63	1	69	(Blank)	1	127	5	133	212	877
US90_Univ	2/19/2022	23	23:45	(Blank)	0	2	7	9	(Blank)	1	0	4	5	(Blank)	0	55	0	55	(Blank)	3	110	1	114	183	802

Appendix D

Trip Generation

Trip Generation

Project:	Baxi Retail Center
Job Number:	3127-2201
Phase	
Land Use:	High Turnover Restaurant Bldg 2
ITE Code:	932
Independent Variable:	1000 Sq Ft
Variable Value:	5

Daily Traffic

Type of Equation: 1

Average Rate:		107.2		1 Rate
Linear Equation:	T=		(X) +	2 Linear
Exponential Equation:	Ln (T)=		Ln(X) +	3 Exponential
		%	Volume	
	Total Traffic	100%	536	
	In	50%	268	
	Out	50%	268	

AM Peak Traffic

Type of Equation: 1

Average Rate:		9.57		1 Rate
Linear Equation:	T=		(X) +	2 Linear
Exponential Equation:	Ln (T)=		Ln(X) +	3 Exponential
		%	Volume	
	Total Traffic	100%	48	
	In	55%	26	
	Out	45%	22	

PM Peak Traffic

Type of Equation: 1

Average Rate:		9.05		1 Rate
Linear Equation:	T=		(X) +	2 Linear
Exponential Equation:	Ln (T)=		Ln(X) +	3 Exponential
		%	Volume	
	Total Traffic	100%	45	
	In	61%	27	
	Out	39%	18	

SAT Daily Traffic

Type of Equation: 1

Average Rate:		122.4		1 Rate
Linear Equation:	T=		(X) +	2 Linear
Exponential Equation:	Ln (T)=		Ln(X) +	3 Exponential
		%	Volume	
	Total Traffic	100%	612	
	In	50%	306	
	Out	50%	306	

SAT Peak Traffic

Type of Equation: 1

Average Rate:		11.19		1 Rate
Linear Equation:	T=		(X) +	2 Linear
Exponential Equation:	Ln (T)=		Ln(X) +	3 Exponential
		%	Volume	
	Total Traffic	100%	56	
	In	51%	29	
	Out	49%	27	

Trip Generation

Project:	Baxi Retail Center
Job Number:	3127-2201
Phase	
Land Use:	High Turnover Restaurant Bldg 3
ITE Code:	932
Independent Variable:	1000 Sq Ft
Variable Value:	5

Daily Traffic

Type of Equation: 1

Average Rate:		107.2		1 Rate
Linear Equation:	T=		(X) +	2 Linear
Exponential Equation:	Ln (T)=		Ln(X) +	3 Exponential
		%	Volume	
	Total Traffic	100%	536	
	In	50%	268	
	Out	50%	268	

AM Peak Traffic

Type of Equation: 1

Average Rate:		9.57		1 Rate
Linear Equation:	T=		(X) +	2 Linear
Exponential Equation:	Ln (T)=		Ln(X) +	3 Exponential
		%	Volume	
	Total Traffic	100%	48	
	In	55%	26	
	Out	45%	22	

PM Peak Traffic

Type of Equation: 1

Average Rate:		9.05		1 Rate
Linear Equation:	T=		(X) +	2 Linear
Exponential Equation:	Ln (T)=		Ln(X) +	3 Exponential
		%	Volume	
	Total Traffic	100%	45	
	In	61%	27	
	Out	39%	18	

SAT Daily Traffic

Type of Equation: 1

Average Rate:		122.4		1 Rate
Linear Equation:	T=		(X) +	2 Linear
Exponential Equation:	Ln (T)=		Ln(X) +	3 Exponential
		%	Volume	
	Total Traffic	100%	612	
	In	50%	306	
	Out	50%	306	

SAT Peak Traffic

Type of Equation: 1

Average Rate:		11.19		1 Rate
Linear Equation:	T=		(X) +	2 Linear
Exponential Equation:	Ln (T)=		Ln(X) +	3 Exponential
		%	Volume	
	Total Traffic	100%	56	
	In	51%	29	
	Out	49%	27	

Trip Generation

Project:	Baxi Retail Center
Job Number:	3127-2201
Phase	
Land Use:	Shopping Center (<40K)
ITE Code:	822
Independent Variable:	1000 Sq Ft GLA
Variable Value:	15

Daily Traffic

Type of Equation: 2

Average Rate:		54.45			1 Rate
Linear Equation:	T=	42.2	(X) +	229.68	2 Linear
Exponential Equation:	Ln (T)=		Ln(X) +		3 Exponential
		%	Volume		
	Total Traffic	100%	863		
	In	50%	431		
	Out	50%	432		

AM Peak Traffic

Type of Equation: 3

Average Rate:		2.36			1 Rate
Linear Equation:	T=		(X) +		2 Linear
Exponential Equation:	Ln (T)=	0.66	Ln(X) +	1.84	3 Exponential
		%	Volume		
	Total Traffic	100%	38		
	In	60%	23		
	Out	40%	15		

PM Peak Traffic

Type of Equation: 3

Average Rate:		6.59			1 Rate
Linear Equation:	T=		(X) +		2 Linear
Exponential Equation:	Ln (T)=	0.71	Ln(X) +	2.72	3 Exponential
		%	Volume		
	Total Traffic	100%	104		
	In	50%	52		
	Out	50%	52		

SAT Daily Traffic

Type of Equation: 1

Average Rate:					1 Rate
Linear Equation:	T=		(X) +		2 Linear
Exponential Equation:	Ln (T)=		Ln(X) +		3 Exponential
		%	Volume		
	Total Traffic	100%	0		
	In	50%	0		
	Out	50%	0		

SAT Peak Traffic

Type of Equation: 1

Average Rate:		6.57			1 Rate
Linear Equation:	T=		(X) +		2 Linear
Exponential Equation:	Ln (T)=		Ln(X) +		3 Exponential
		%	Volume		
	Total Traffic	100%	99		
	In	51%	50		
	Out	49%	49		

Appendix F

Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	2112	20	147	1391	55	6	57	178	45	56	38
Future Volume (vph)	53	2112	20	147	1391	55	6	57	178	45	56	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0	7.0	7.3	7.3	7.3	7.3	7.3	
Lane Util. Factor	0.97	0.86		0.97	0.86	1.00	1.00	0.95	0.95	1.00	0.95	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.92	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	6399		3433	6408	1583	1770	1629	1504	1770	3327	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	6399		3433	6408	1583	1770	1629	1504	1770	3327	
Peak-hour factor, PHF	0.91	0.91	0.91	0.88	0.88	0.88	0.85	0.85	0.85	0.94	0.94	0.94
Adj. Flow (vph)	58	2321	22	167	1581	62	7	67	209	48	60	40
RTOR Reduction (vph)	0	1	0	0	0	34	0	31	109	0	30	0
Lane Group Flow (vph)	58	2342	0	167	1581	29	7	111	25	48	70	0
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	6.3	50.2		11.2	55.1	55.1	1.4	22.4	22.4	7.6	28.6	
Effective Green, g (s)	6.3	50.2		11.2	55.1	55.1	1.4	22.4	22.4	7.6	28.6	
Actuated g/C Ratio	0.05	0.42		0.09	0.46	0.46	0.01	0.19	0.19	0.06	0.24	
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	7.3	7.3	7.3	7.3	7.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	180	2676		320	2942	726	20	304	280	112	792	
v/s Ratio Prot	0.02	c0.37		c0.05	c0.25		0.00	c0.07		c0.03	c0.02	
v/s Ratio Perm						0.02			0.02			
v/c Ratio	0.32	0.88		0.52	0.54	0.04	0.35	0.37	0.09	0.43	0.09	
Uniform Delay, d1	54.8	32.0		51.8	23.3	17.9	58.8	42.6	40.4	54.1	35.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	3.5		1.5	0.2	0.0	10.3	3.4	0.6	2.6	0.2	
Delay (s)	55.8	35.5		53.4	23.5	17.9	69.1	46.0	41.0	56.7	35.8	
Level of Service	E	D		D	C	B	E	D	D	E	D	
Approach Delay (s)		36.0			26.1			44.2			42.6	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	32.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	28.6
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	2	32	0	7	8	48	12	8	97	1
Future Vol, veh/h	1	0	2	32	0	7	8	48	12	8	97	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	2	35	0	8	9	52	13	9	105	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	168	207	53	148	201	33	106	0	0	65	0	0
Stage 1	124	124	-	77	77	-	-	-	-	-	-	-
Stage 2	44	83	-	71	124	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	780	689	1003	806	694	1033	1483	-	-	1535	-	-
Stage 1	867	792	-	923	830	-	-	-	-	-	-	-
Stage 2	965	825	-	931	792	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	768	681	1003	797	686	1033	1483	-	-	1535	-	-
Mov Cap-2 Maneuver	768	681	-	797	686	-	-	-	-	-	-	-
Stage 1	862	787	-	917	825	-	-	-	-	-	-	-
Stage 2	952	820	-	923	787	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	9.6	0.9	0.6
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1483	-	-	910	831	1535	-	-
HCM Lane V/C Ratio	0.006	-	-	0.004	0.051	0.006	-	-
HCM Control Delay (s)	7.4	0	-	9	9.6	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-

Intersection	
Intersection Delay, s/veh	3.6
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	266	74	58	203
Demand Flow Rate, veh/h	271	75	59	207
Vehicles Circulating, veh/h	103	148	228	79
Vehicles Exiting, veh/h	183	139	146	144
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.8	3.2	3.4	3.5
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Right	Left	Right	Left	Right
Designated Moves	LT	TR	LT	TR	LT	TR	LT	TR
Assumed Moves	LT	TR	LT	TR	LT	TR	LT	R
RT Channelized								
Lane Util	0.469	0.531	0.467	0.533	0.475	0.525	0.449	0.551
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	127	144	35	40	28	31	93	114
Cap Entry Lane, veh/h	1228	1301	1178	1252	1094	1170	1255	1328
Entry HV Adj Factor	0.983	0.978	0.994	0.981	0.978	0.996	0.984	0.982
Flow Entry, veh/h	125	141	35	39	27	31	91	112
Cap Entry, veh/h	1207	1272	1171	1228	1070	1165	1235	1305
V/C Ratio	0.103	0.111	0.030	0.032	0.026	0.026	0.074	0.086
Control Delay, s/veh	3.8	3.7	3.3	3.2	3.6	3.3	3.5	3.4
LOS	A	A	A	A	A	A	A	A
95th %tile Queue, veh	0	0	0	0	0	0	0	0

Intersection	
Int Delay, s/veh	2.2

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	1	3	104	10	9	59	5	13	0	17	10	0	4
Future Vol, veh/h	1	3	104	10	9	59	5	13	0	17	10	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	3	113	11	10	64	5	14	0	18	11	0	4

Major/Minor	Major1				Major2			Minor1			Minor2		
Conflicting Flow All	70	69	0	0	124	0	0	179	216	62	152	219	35
Stage 1	-	-	-	-	-	-	-	127	127	-	87	87	-
Stage 2	-	-	-	-	-	-	-	52	89	-	65	132	-
Critical Hdwy	6.44	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.52	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1292	1530	-	-	1461	-	-	766	681	990	801	678	1030
Stage 1	-	-	-	-	-	-	-	863	790	-	911	822	-
Stage 2	-	-	-	-	-	-	-	954	820	-	938	786	-
Platoon blocked, %			-	-		-	-						
Mov Cap-1 Maneuver	1461	1461	-	-	1461	-	-	757	674	990	780	671	1030
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	757	674	-	780	671	-
Stage 1	-	-	-	-	-	-	-	860	788	-	908	816	-
Stage 2	-	-	-	-	-	-	-	943	814	-	918	784	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.9	9.2	9.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	757	990	1461	-	-	1461	-	-	780	1030
HCM Lane V/C Ratio	0.019	0.019	0.002	-	-	0.007	-	-	0.014	0.004
HCM Control Delay (s)	9.8	8.7	7.5	0	-	7.5	0	-	9.7	8.5
HCM Lane LOS	A	A	A	A	-	A	A	-	A	A
HCM 95th %tile Q(veh)	0.1	0.1	0	-	-	0	-	-	0	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	30	19	0
Future Vol, veh/h	0	0	0	30	19	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	33	21	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	54	21	21	0	-	0
Stage 1	21	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	954	1056	1595	-	-	-
Stage 1	1002	-	-	-	-	-
Stage 2	989	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	954	1056	1595	-	-	-
Mov Cap-2 Maneuver	954	-	-	-	-	-
Stage 1	1002	-	-	-	-	-
Stage 2	989	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1595	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	1021	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1021	-	-	-	-	-
Mov Cap-2 Maneuver	1021	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	1519	11	243	2482	66	19	122	373	75	99	49
Future Volume (vph)	68	1519	11	243	2482	66	19	122	373	75	99	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0	7.0	7.3	7.3	7.3	7.3	7.3	
Lane Util. Factor	0.97	0.86		0.97	0.86	1.00	1.00	0.95	0.95	1.00	0.95	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.92	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	6401		3433	6408	1583	1770	1631	1504	1770	3363	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	6401		3433	6408	1583	1770	1631	1504	1770	3363	
Peak-hour factor, PHF	0.81	0.81	0.81	0.96	0.96	0.96	0.86	0.86	0.86	0.91	0.91	0.91
Adj. Flow (vph)	84	1875	14	253	2585	69	22	142	434	82	109	54
RTOR Reduction (vph)	0	1	0	0	0	31	0	30	137	0	45	0
Lane Group Flow (vph)	84	1888	0	253	2585	38	22	268	141	82	118	0
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	8.0	74.4		8.0	74.4	74.4	11.3	9.7	9.7	14.3	12.7	
Effective Green, g (s)	8.0	74.4		8.0	74.4	74.4	11.3	9.7	9.7	14.3	12.7	
Actuated g/C Ratio	0.06	0.55		0.06	0.55	0.55	0.08	0.07	0.07	0.11	0.09	
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	7.3	7.3	7.3	7.3	7.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	203	3527		203	3531	872	148	117	108	187	316	
v/s Ratio Prot	0.02	0.29		c0.07	c0.40		0.01	c0.16		c0.05	c0.03	
v/s Ratio Perm						0.02			0.09			
v/c Ratio	0.41	0.54		1.25	0.73	0.04	0.15	2.29	1.30	0.44	0.37	
Uniform Delay, d1	61.2	19.3		63.5	22.8	13.9	57.4	62.6	62.6	56.6	57.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.1	0.2		145.1	0.8	0.0	2.1	608.0	187.9	7.3	3.3	
Delay (s)	67.4	19.5		208.6	23.6	14.0	59.5	670.7	250.6	63.9	60.8	
Level of Service	E	B		F	C	B	E	F	F	E	E	
Approach Delay (s)		21.5			39.5			452.9			61.8	
Approach LOS		C			D			F			E	

Intersection Summary			
HCM 2000 Control Delay	77.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	28.6
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	1	3	21	22	0	11	1	3	204	28	23	92	2
Future Vol, veh/h	1	3	21	22	0	11	1	3	204	28	23	92	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	3	23	24	0	12	1	3	222	30	25	100	2

Major/Minor	Minor2			Minor1			Major1				Major2		
Conflicting Flow All	270	411	51	347	397	126	102	102	0	0	252	0	0
Stage 1	151	151	-	245	245	-	-	-	-	-	-	-	-
Stage 2	119	260	-	102	152	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	661	529	1006	583	539	901	1233	1488	-	-	1310	-	-
Stage 1	836	771	-	737	702	-	-	-	-	-	-	-	-
Stage 2	873	692	-	893	771	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-		-	-
Mov Cap-1 Maneuver	641	517	1006	557	527	901	1406	1406	-	-	1310	-	-
Mov Cap-2 Maneuver	641	517	-	557	527	-	-	-	-	-	-	-	-
Stage 1	833	756	-	735	700	-	-	-	-	-	-	-	-
Stage 2	859	690	-	852	756	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	11	0.1	1.6
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1406	-	-	885	638	1310	-	-
HCM Lane V/C Ratio	0.002	-	-	0.031	0.056	0.019	-	-
HCM Control Delay (s)	7.6	0	-	9.2	11	7.8	0.1	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.1	-	-

Intersection	
Intersection Delay, s/veh	4.0
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	216	185	225	192
Demand Flow Rate, veh/h	220	189	229	195
Vehicles Circulating, veh/h	99	334	207	266
Vehicles Exiting, veh/h	362	102	112	257
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.6	4.4	4.0	4.1
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Right	Left	Right	Left	Right
Designated Moves	LT	TR	LT	TR	LT	TR	LT	TR
Assumed Moves	L	TR	LT	TR	LT	TR	LT	R
RT Channelized								
Lane Util	0.559	0.441	0.471	0.529	0.472	0.528	0.462	0.538
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	123	97	89	100	108	121	90	105
Cap Entry Lane, veh/h	1232	1305	993	1069	1116	1191	1057	1133
Entry HV Adj Factor	0.984	0.976	0.977	0.981	0.979	0.985	0.984	0.981
Flow Entry, veh/h	121	95	87	98	106	119	89	103
Cap Entry, veh/h	1212	1274	970	1048	1092	1173	1040	1111
V/C Ratio	0.100	0.074	0.090	0.094	0.097	0.102	0.085	0.093
Control Delay, s/veh	3.8	3.4	4.5	4.3	4.1	3.9	4.2	4.0
LOS	A	A	A	A	A	A	A	A
95th %tile Queue, veh	0	0	0	0	0	0	0	0

Intersection	
Int Delay, s/veh	1.5

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	2	7	60	10	4	12	196	6	12	0	12	2	1	2
Future Vol, veh/h	2	7	60	10	4	12	196	6	12	0	12	2	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	8	65	11	4	13	213	7	13	0	13	2	1	2

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	220	220	0	0	76	76	0	0	232	345	38	304	347	110
Stage 1	-	-	-	-	-	-	-	-	91	91	-	251	251	-
Stage 2	-	-	-	-	-	-	-	-	141	254	-	53	96	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1040	1346	-	-	1280	1521	-	-	703	577	1026	625	575	922
Stage 1	-	-	-	-	-	-	-	-	906	819	-	731	698	-
Stage 2	-	-	-	-	-	-	-	-	847	696	-	953	815	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	1263	1263	-	-	1448	1448	-	-	689	565	1026	608	563	922
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	689	565	-	608	563	-
Stage 1	-	-	-	-	-	-	-	-	899	812	-	725	689	-
Stage 2	-	-	-	-	-	-	-	-	833	687	-	933	808	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.6	9.5	10.2
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	689	1026	1263	-	-	1448	-	-	598	818
HCM Lane V/C Ratio	0.019	0.013	0.006	-	-	0.009	-	-	0.005	0.003
HCM Control Delay (s)	10.3	8.6	7.9	0.1	-	7.5	0.1	-	11	9.4
HCM Lane LOS	B	A	A	A	-	A	A	-	B	A
HCM 95th %tile Q(veh)	0.1	0	0	-	-	0	-	-	0	0

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	216	0	0	101
Future Vol, veh/h	0	0	216	0	0	101
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	235	0	0	110

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	290	118	0	0	235	0
Stage 1	235	-	-	-	-	-
Stage 2	55	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	677	912	-	-	1329	-
Stage 1	782	-	-	-	-	-
Stage 2	961	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	677	912	-	-	1329	-
Mov Cap-2 Maneuver	677	-	-	-	-	-
Stage 1	782	-	-	-	-	-
Stage 2	961	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1329	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	1383	27	178	1522	33	18	76	225	25	54	29
Future Volume (vph)	84	1383	27	178	1522	33	18	76	225	25	54	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0	7.0	7.3	7.3	7.3	7.3	7.3	
Lane Util. Factor	0.97	0.86		0.97	0.86	1.00	1.00	0.95	0.95	1.00	0.95	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.92	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	6389		3433	6408	1583	1770	1632	1504	1770	3352	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	6389		3433	6408	1583	1770	1632	1504	1770	3352	
Peak-hour factor, PHF	0.97	0.97	0.97	0.89	0.89	0.89	0.90	0.90	0.90	0.79	0.79	0.79
Adj. Flow (vph)	87	1426	28	200	1710	37	20	84	250	32	68	37
RTOR Reduction (vph)	0	3	0	0	0	22	0	35	147	0	34	0
Lane Group Flow (vph)	87	1451	0	200	1710	15	20	139	13	32	71	0
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	9.0	43.6		9.0	43.6	43.6	20.1	8.7	8.7	20.1	8.7	
Effective Green, g (s)	9.0	43.6		9.0	43.6	43.6	20.1	8.7	8.7	20.1	8.7	
Actuated g/C Ratio	0.08	0.40		0.08	0.40	0.40	0.18	0.08	0.08	0.18	0.08	
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	7.3	7.3	7.3	7.3	7.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	280	2532		280	2539	627	323	129	118	323	265	
v/s Ratio Prot	0.03	0.23		c0.06	c0.27		0.01	c0.09		c0.02	0.02	
v/s Ratio Perm						0.01			0.01			
v/c Ratio	0.31	0.57		0.71	0.67	0.02	0.06	1.08	0.11	0.10	0.27	
Uniform Delay, d1	47.6	25.9		49.2	27.3	20.2	37.2	50.6	47.0	37.4	47.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.9	0.3		14.4	0.7	0.0	0.4	101.5	1.8	0.6	2.5	
Delay (s)	50.4	26.2		63.7	28.1	20.2	37.5	152.2	48.9	38.0	50.1	
Level of Service	D	C		E	C	C	D	F	D	D	D	
Approach Delay (s)		27.6			31.6			99.0			47.3	
Approach LOS		C			C			F			D	

Intersection Summary			
HCM 2000 Control Delay	36.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	28.6
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	9	25	0	10	17	99	13	14	84	4
Future Vol, veh/h	5	0	9	25	0	10	17	99	13	14	84	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	10	27	0	11	18	108	14	15	91	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	213	281	48	227	276	61	95	0	0	122	0	0
Stage 1	123	123	-	151	151	-	-	-	-	-	-	-
Stage 2	90	158	-	76	125	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	725	626	1011	709	630	991	1497	-	-	1463	-	-
Stage 1	868	793	-	836	771	-	-	-	-	-	-	-
Stage 2	907	766	-	924	792	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	704	611	1011	689	615	991	1497	-	-	1463	-	-
Mov Cap-2 Maneuver	704	611	-	689	615	-	-	-	-	-	-	-
Stage 1	857	784	-	825	761	-	-	-	-	-	-	-
Stage 2	885	756	-	905	783	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	10	1	1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1497	-	-	875	755	1463	-	-
HCM Lane V/C Ratio	0.012	-	-	0.017	0.05	0.01	-	-
HCM Control Delay (s)	7.4	0	-	9.2	10	7.5	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0	-	-

Intersection	
Intersection Delay, s/veh	3.5
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	164	84	132	153
Demand Flow Rate, veh/h	168	85	135	155
Vehicles Circulating, veh/h	108	203	139	121
Vehicles Exiting, veh/h	168	71	137	167
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.5	3.4	3.4	3.4
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Right	Left	Right	Left	Right
Designated Moves	LT	TR	LT	TR	LT	TR	LT	TR
Assumed Moves	LT	TR	LT	TR	LT	TR	LT	TR
RT Channelized								
Lane Util	0.470	0.530	0.471	0.529	0.467	0.533	0.471	0.529
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	79	89	40	45	63	72	73	82
Cap Entry Lane, veh/h	1222	1296	1120	1195	1188	1262	1208	1281
Entry HV Adj Factor	0.976	0.977	0.987	0.989	0.988	0.975	0.983	0.986
Flow Entry, veh/h	77	87	39	45	62	70	72	81
Cap Entry, veh/h	1193	1266	1105	1182	1174	1230	1187	1264
V/C Ratio	0.065	0.069	0.036	0.038	0.053	0.057	0.060	0.064
Control Delay, s/veh	3.5	3.4	3.6	3.4	3.5	3.4	3.5	3.4
LOS	A	A	A	A	A	A	A	A
95th %tile Queue, veh	0	0	0	0	0	0	0	0

Intersection	
Int Delay, s/veh	2.9

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	4	5	48	7	4	10	59	6	10	0	11	9	0	8
Future Vol, veh/h	4	5	48	7	4	10	59	6	10	0	11	9	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	5	52	8	4	11	64	7	11	0	12	10	0	9

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	71	71	0	0	60	60	0	0	136	175	30	142	176	36
Stage 1	-	-	-	-	-	-	-	-	74	74	-	98	98	-
Stage 2	-	-	-	-	-	-	-	-	62	101	-	44	78	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1290	1527	-	-	1310	1542	-	-	822	717	1038	814	716	1029
Stage 1	-	-	-	-	-	-	-	-	927	833	-	898	813	-
Stage 2	-	-	-	-	-	-	-	-	942	811	-	965	829	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	1406	1406	-	-	1463	1463	-	-	804	704	1038	794	703	1029
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	804	704	-	794	703	-
Stage 1	-	-	-	-	-	-	-	-	921	827	-	892	804	-
Stage 2	-	-	-	-	-	-	-	-	924	802	-	947	823	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	1.4	9	9.1
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	804	1038	1406	-	-	1463	-	-	794	1029
HCM Lane V/C Ratio	0.014	0.012	0.004	-	-	0.007	-	-	0.012	0.008
HCM Control Delay (s)	9.5	8.5	7.6	0	-	7.5	0.1	-	9.6	8.5
HCM Lane LOS	A	A	A	A	-	A	A	-	A	A
HCM 95th %tile Q(veh)	0	0	0	-	-	0	-	-	0	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	21	17	0
Future Vol, veh/h	0	0	0	21	17	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	23	18	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	41	18	18	0	-	0
Stage 1	18	-	-	-	-	-
Stage 2	23	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	970	1061	1599	-	-	-
Stage 1	1005	-	-	-	-	-
Stage 2	1000	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	970	1061	1599	-	-	-
Mov Cap-2 Maneuver	970	-	-	-	-	-
Stage 1	1005	-	-	-	-	-
Stage 2	1000	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1599	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	114	0	0	102
Future Vol, veh/h	0	0	114	0	0	102
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	124	0	0	111

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	180	62	0	0	124	0
Stage 1	124	-	-	-	-	-
Stage 2	56	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	792	990	-	-	1461	-
Stage 1	888	-	-	-	-	-
Stage 2	960	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	792	990	-	-	1461	-
Mov Cap-2 Maneuver	792	-	-	-	-	-
Stage 1	888	-	-	-	-	-
Stage 2	960	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1461	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	2154	20	150	1419	56	6	58	182	46	57	39
Future Volume (vph)	54	2154	20	150	1419	56	6	58	182	46	57	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0	7.0	7.3	7.3	7.3	7.3	7.3	
Lane Util. Factor	0.97	0.86		0.97	0.86	1.00	1.00	0.95	0.95	1.00	0.95	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.92	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	6399		3433	6408	1583	1770	1629	1504	1770	3326	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	6399		3433	6408	1583	1770	1629	1504	1770	3326	
Peak-hour factor, PHF	0.91	0.91	0.91	0.88	0.88	0.88	0.85	0.85	0.85	0.94	0.94	0.94
Adj. Flow (vph)	59	2367	22	170	1612	64	7	68	214	49	61	41
RTOR Reduction (vph)	0	1	0	0	0	35	0	32	111	0	31	0
Lane Group Flow (vph)	59	2388	0	170	1613	29	7	113	26	49	71	0
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	6.3	50.1		11.3	55.1	55.1	1.4	22.4	22.4	7.6	28.6	
Effective Green, g (s)	6.3	50.1		11.3	55.1	55.1	1.4	22.4	22.4	7.6	28.6	
Actuated g/C Ratio	0.05	0.42		0.09	0.46	0.46	0.01	0.19	0.19	0.06	0.24	
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	7.3	7.3	7.3	7.3	7.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	180	2671		323	2942	726	20	304	280	112	792	
v/s Ratio Prot	0.02	c0.37		c0.05	c0.25		0.00	c0.07		c0.03	c0.02	
v/s Ratio Perm						0.02			0.02			
v/c Ratio	0.33	0.89		0.53	0.55	0.04	0.35	0.37	0.09	0.44	0.09	
Uniform Delay, d1	54.8	32.5		51.8	23.5	17.9	58.8	42.7	40.4	54.1	35.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.1	4.3		1.5	0.2	0.0	10.3	3.5	0.6	2.7	0.2	
Delay (s)	55.9	36.8		53.3	23.7	17.9	69.1	46.1	41.0	56.9	35.8	
Level of Service	E	D		D	C	B	E	D	D	E	D	
Approach Delay (s)		37.2			26.2			44.3			42.6	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	33.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	28.6
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	2	33	0	7	8	49	12	8	99	1
Future Vol, veh/h	1	0	2	33	0	7	8	49	12	8	99	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	2	36	0	8	9	53	13	9	108	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	172	211	55	150	205	33	109	0	0	66	0	0
Stage 1	127	127	-	78	78	-	-	-	-	-	-	-
Stage 2	45	84	-	72	127	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	775	685	1000	803	690	1033	1479	-	-	1534	-	-
Stage 1	863	790	-	922	829	-	-	-	-	-	-	-
Stage 2	963	824	-	929	790	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	763	677	1000	794	682	1033	1479	-	-	1534	-	-
Mov Cap-2 Maneuver	763	677	-	794	682	-	-	-	-	-	-	-
Stage 1	858	785	-	916	824	-	-	-	-	-	-	-
Stage 2	950	819	-	921	785	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	9.6	0.9	0.5
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1479	-	-	906	828	1534	-	-
HCM Lane V/C Ratio	0.006	-	-	0.004	0.053	0.006	-	-
HCM Control Delay (s)	7.4	0	-	9	9.6	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-

Intersection	
Intersection Delay, s/veh	3.6
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	271	75	59	206
Demand Flow Rate, veh/h	276	76	60	210
Vehicles Circulating, veh/h	104	151	232	80
Vehicles Exiting, veh/h	186	141	148	147
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.8	3.3	3.5	3.5
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Right	Left	Right	Left	Right
Designated Moves	LT	TR	LT	TR	LT	TR	LT	TR
Assumed Moves	LT	TR	LT	TR	LT	TR	LT	R
RT Channelized								
Lane Util	0.471	0.529	0.474	0.526	0.467	0.533	0.448	0.552
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	130	146	36	40	28	32	94	116
Cap Entry Lane, veh/h	1227	1300	1175	1249	1090	1166	1254	1327
Entry HV Adj Factor	0.978	0.982	0.979	0.993	0.994	0.981	0.984	0.983
Flow Entry, veh/h	127	143	35	40	28	31	92	114
Cap Entry, veh/h	1200	1277	1150	1241	1084	1143	1233	1304
V/C Ratio	0.106	0.112	0.031	0.032	0.026	0.027	0.075	0.087
Control Delay, s/veh	3.9	3.7	3.4	3.2	3.5	3.4	3.5	3.5
LOS	A	A	A	A	A	A	A	A
95th %tile Queue, veh	0	0	0	0	0	0	0	0

Intersection	
Int Delay, s/veh	2.1

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	1	3	106	10	9	60	5	13	0	17	10	0	4
Future Vol, veh/h	1	3	106	10	9	60	5	13	0	17	10	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	3	115	11	10	65	5	14	0	18	11	0	4

Major/Minor	Major1				Major2			Minor1			Minor2		
Conflicting Flow All	71	70	0	0	126	0	0	182	219	63	154	222	35
Stage 1	-	-	-	-	-	-	-	129	129	-	88	88	-
Stage 2	-	-	-	-	-	-	-	53	90	-	66	134	-
Critical Hdwy	6.44	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.52	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1290	1529	-	-	1458	-	-	763	678	988	798	676	1030
Stage 1	-	-	-	-	-	-	-	861	788	-	910	821	-
Stage 2	-	-	-	-	-	-	-	953	820	-	937	785	-
Platoon blocked, %			-	-		-	-						
Mov Cap-1 Maneuver	1460	1460	-	-	1458	-	-	754	671	988	777	669	1030
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	754	671	-	777	669	-
Stage 1	-	-	-	-	-	-	-	858	786	-	907	815	-
Stage 2	-	-	-	-	-	-	-	942	814	-	917	783	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.9	9.2	9.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	754	988	1460	-	-	1458	-	-	777	1030
HCM Lane V/C Ratio	0.019	0.019	0.002	-	-	0.007	-	-	0.014	0.004
HCM Control Delay (s)	9.9	8.7	7.5	0	-	7.5	0	-	9.7	8.5
HCM Lane LOS	A	A	A	A	-	A	A	-	A	A
HCM 95th %tile Q(veh)	0.1	0.1	0	-	-	0	-	-	0	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	31	19	0
Future Vol, veh/h	0	0	0	31	19	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	34	21	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	55	21	21	0	-	0
Stage 1	21	-	-	-	-	-
Stage 2	34	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	953	1056	1595	-	-	-
Stage 1	1002	-	-	-	-	-
Stage 2	988	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	953	1056	1595	-	-	-
Mov Cap-2 Maneuver	953	-	-	-	-	-
Stage 1	1002	-	-	-	-	-
Stage 2	988	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1595	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	57	0	0	133
Future Vol, veh/h	0	0	57	0	0	133
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	62	0	0	145

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	135	31	0	0	62	0
Stage 1	62	-	-	-	-	-
Stage 2	73	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	845	1036	-	-	1539	-
Stage 1	953	-	-	-	-	-
Stage 2	941	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	845	1036	-	-	1539	-
Mov Cap-2 Maneuver	845	-	-	-	-	-
Stage 1	953	-	-	-	-	-
Stage 2	941	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1539	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	1549	11	248	2532	67	19	124	380	76	101	50
Future Volume (vph)	69	1549	11	248	2532	67	19	124	380	76	101	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0	7.0	7.3	7.3	7.3	7.3	7.3	
Lane Util. Factor	0.97	0.86		0.97	0.86	1.00	1.00	0.95	0.95	1.00	0.95	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.92	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	6401		3433	6408	1583	1770	1630	1504	1770	3363	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	6401		3433	6408	1583	1770	1630	1504	1770	3363	
Peak-hour factor, PHF	0.81	0.81	0.81	0.96	0.96	0.96	0.86	0.86	0.86	0.91	0.91	0.91
Adj. Flow (vph)	85	1912	14	258	2638	70	22	144	442	84	111	55
RTOR Reduction (vph)	0	1	0	0	0	31	0	30	137	0	46	0
Lane Group Flow (vph)	85	1925	0	258	2638	39	22	273	146	84	120	0
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	8.0	74.8		8.0	74.8	74.8	10.9	9.7	9.7	13.9	12.7	
Effective Green, g (s)	8.0	74.8		8.0	74.8	74.8	10.9	9.7	9.7	13.9	12.7	
Actuated g/C Ratio	0.06	0.55		0.06	0.55	0.55	0.08	0.07	0.07	0.10	0.09	
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	7.3	7.3	7.3	7.3	7.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	203	3546		203	3550	877	142	117	108	182	316	
v/s Ratio Prot	0.02	0.30		c0.08	c0.41		0.01	c0.17		c0.05	c0.04	
v/s Ratio Perm						0.02			0.10			
v/c Ratio	0.42	0.54		1.27	0.74	0.04	0.15	2.34	1.35	0.46	0.38	
Uniform Delay, d1	61.3	19.2		63.5	22.8	13.8	57.8	62.6	62.6	57.0	57.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.2	0.2		154.7	0.9	0.0	2.3	626.9	205.9	8.2	3.4	
Delay (s)	67.5	19.4		218.2	23.7	13.8	60.1	689.6	268.6	65.2	60.9	
Level of Service	E	B		F	C	B	E	F	F	E	E	
Approach Delay (s)		21.4			40.4			470.8			62.3	
Approach LOS		C			D			F			E	

Intersection Summary			
HCM 2000 Control Delay	79.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	28.6
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	1	3	21	22	0	11	1	3	208	29	23	94	2
Future Vol, veh/h	1	3	21	22	0	11	1	3	208	29	23	94	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	3	23	24	0	12	1	3	226	32	25	102	2

Major/Minor	Minor2			Minor1			Major1				Major2		
Conflicting Flow All	274	419	52	353	404	129	104	104	0	0	258	0	0
Stage 1	153	153	-	250	250	-	-	-	-	-	-	-	-
Stage 2	121	266	-	103	154	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	657	524	1005	577	534	897	1230	1485	-	-	1304	-	-
Stage 1	834	770	-	732	699	-	-	-	-	-	-	-	-
Stage 2	870	687	-	892	769	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-		-	-
Mov Cap-1 Maneuver	637	512	1005	552	522	897	1403	1403	-	-	1304	-	-
Mov Cap-2 Maneuver	637	512	-	552	522	-	-	-	-	-	-	-	-
Stage 1	831	755	-	730	697	-	-	-	-	-	-	-	-
Stage 2	856	685	-	851	754	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	11	0.1	1.6
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1403	-	-	883	633	1304	-	-
HCM Lane V/C Ratio	0.002	-	-	0.031	0.057	0.019	-	-
HCM Control Delay (s)	7.6	0	-	9.2	11	7.8	0.1	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.1	-	-

Intersection	
Intersection Delay, s/veh	4.1
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	220	189	230	195
Demand Flow Rate, veh/h	224	193	234	198
Vehicles Circulating, veh/h	100	341	210	271
Vehicles Exiting, veh/h	369	103	114	263
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.6	4.4	4.1	4.1
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Right	Left	Right	Left	Right
Designated Moves	LT	TR	LT	TR	LT	TR	LT	TR
Assumed Moves	L	TR	LT	TR	LT	TR	LT	R
RT Channelized								
Lane Util	0.558	0.442	0.472	0.528	0.470	0.530	0.460	0.540
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	125	99	91	102	110	124	91	107
Cap Entry Lane, veh/h	1231	1304	986	1063	1113	1188	1052	1128
Entry HV Adj Factor	0.984	0.976	0.976	0.982	0.982	0.982	0.984	0.981
Flow Entry, veh/h	123	97	89	100	108	122	90	105
Cap Entry, veh/h	1212	1273	963	1043	1093	1167	1035	1107
V/C Ratio	0.102	0.076	0.092	0.096	0.099	0.104	0.087	0.095
Control Delay, s/veh	3.8	3.4	4.6	4.3	4.1	4.0	4.2	4.1
LOS	A	A	A	A	A	A	A	A
95th %tile Queue, veh	0	0	0	0	0	0	0	0

Intersection	
Int Delay, s/veh	1.5

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	2	7	61	10	4	12	200	6	12	0	12	2	1	2
Future Vol, veh/h	2	7	61	10	4	12	200	6	12	0	12	2	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	8	66	11	4	13	217	7	13	0	13	2	1	2

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	224	224	0	0	77	77	0	0	235	350	39	308	352	112
Stage 1	-	-	-	-	-	-	-	-	92	92	-	255	255	-
Stage 2	-	-	-	-	-	-	-	-	143	258	-	53	97	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1034	1342	-	-	1279	1520	-	-	700	573	1024	621	571	920
Stage 1	-	-	-	-	-	-	-	-	905	818	-	727	695	-
Stage 2	-	-	-	-	-	-	-	-	845	693	-	953	814	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	1258	1258	-	-	1447	1447	-	-	686	561	1024	604	559	920
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	686	561	-	604	559	-
Stage 1	-	-	-	-	-	-	-	-	898	811	-	721	686	-
Stage 2	-	-	-	-	-	-	-	-	831	684	-	933	807	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.6	9.5	10.3
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	686	1024	1258	-	-	1447	-	-	594	815
HCM Lane V/C Ratio	0.019	0.013	0.006	-	-	0.009	-	-	0.005	0.003
HCM Control Delay (s)	10.4	8.6	7.9	0.1	-	7.5	0.1	-	11.1	9.4
HCM Lane LOS	B	A	A	A	-	A	A	-	B	A
HCM 95th %tile Q(veh)	0.1	0	0	-	-	0	-	-	0	0

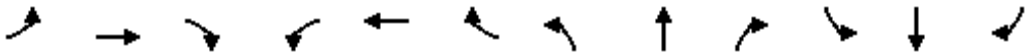
Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	220	0	0	103
Future Vol, veh/h	0	0	220	0	0	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	239	0	0	112

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	295	120	0	0	239	0
Stage 1	239	-	-	-	-	-
Stage 2	56	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	672	909	-	-	1325	-
Stage 1	778	-	-	-	-	-
Stage 2	960	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	672	909	-	-	1325	-
Mov Cap-2 Maneuver	672	-	-	-	-	-
Stage 1	778	-	-	-	-	-
Stage 2	960	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1325	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	1411	28	182	1552	34	18	78	230	26	55	30
Future Volume (vph)	86	1411	28	182	1552	34	18	78	230	26	55	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0	7.0	7.3	7.3	7.3	7.3	7.3	
Lane Util. Factor	0.97	0.86		0.97	0.86	1.00	1.00	0.95	0.95	1.00	0.95	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.92	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	6389		3433	6408	1583	1770	1633	1504	1770	3351	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	6389		3433	6408	1583	1770	1633	1504	1770	3351	
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)	93	1534	30	198	1687	37	20	85	250	28	60	33
RTOR Reduction (vph)	0	3	0	0	0	23	0	35	147	0	30	0
Lane Group Flow (vph)	93	1561	0	198	1687	14	20	140	13	28	63	0
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	9.0	43.0		9.0	43.0	43.0	20.7	8.7	8.7	20.7	8.7	
Effective Green, g (s)	9.0	43.0		9.0	43.0	43.0	20.7	8.7	8.7	20.7	8.7	
Actuated g/C Ratio	0.08	0.39		0.08	0.39	0.39	0.19	0.08	0.08	0.19	0.08	
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	7.3	7.3	7.3	7.3	7.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	280	2497		280	2504	618	333	129	118	333	265	
v/s Ratio Prot	0.03	0.24		c0.06	c0.26		0.01	c0.09		c0.02	0.02	
v/s Ratio Perm						0.01			0.01			
v/c Ratio	0.33	0.63		0.71	0.67	0.02	0.06	1.09	0.11	0.08	0.24	
Uniform Delay, d1	47.7	27.0		49.2	27.7	20.6	36.7	50.6	47.0	36.8	47.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.2	0.5		14.0	0.7	0.0	0.3	103.9	1.8	0.5	2.1	
Delay (s)	50.8	27.5		63.2	28.4	20.6	37.0	154.6	48.9	37.3	49.6	
Level of Service	D	C		E	C	C	D	F	D	D	D	
Approach Delay (s)		28.8			31.9			100.3			46.8	
Approach LOS		C			C			F			D	

Intersection Summary			
HCM 2000 Control Delay	37.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	28.6
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	9	26	0	10	17	101	13	14	86	4
Future Vol, veh/h	5	0	9	26	0	10	17	101	13	14	86	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	10	28	0	11	18	110	14	15	93	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	216	285	49	230	280	62	97	0	0	124	0	0
Stage 1	125	125	-	153	153	-	-	-	-	-	-	-
Stage 2	91	160	-	77	127	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	722	623	1009	705	627	990	1494	-	-	1461	-	-
Stage 1	866	792	-	834	770	-	-	-	-	-	-	-
Stage 2	906	764	-	923	790	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	701	608	1009	685	612	990	1494	-	-	1461	-	-
Mov Cap-2 Maneuver	701	608	-	685	612	-	-	-	-	-	-	-
Stage 1	855	783	-	823	760	-	-	-	-	-	-	-
Stage 2	884	754	-	904	781	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	10.1	1	1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1494	-	-	872	749	1461	-	-
HCM Lane V/C Ratio	0.012	-	-	0.017	0.052	0.01	-	-
HCM Control Delay (s)	7.4	0	-	9.2	10.1	7.5	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0	-	-

Intersection	
Intersection Delay, s/veh	3.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	168	85	134	156
Demand Flow Rate, veh/h	172	86	137	158
Vehicles Circulating, veh/h	109	206	141	123
Vehicles Exiting, veh/h	172	72	140	169
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.7	3.7	3.9	3.5
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Right	Left	Right	Left	Right
Designated Moves	LT	R	LT	R	LT	R	LT	R
Assumed Moves	LT	R	LT	R	LT	R	LT	R
RT Channelized								
Lane Util	0.733	0.267	0.872	0.128	0.927	0.073	0.551	0.449
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	126	46	75	11	127	10	87	71
Cap Entry Lane, veh/h	1221	1294	1117	1192	1186	1260	1205	1279
Entry HV Adj Factor	0.977	0.978	0.986	1.000	0.980	1.000	0.984	0.986
Flow Entry, veh/h	123	45	74	11	124	10	86	70
Cap Entry, veh/h	1193	1266	1101	1192	1162	1260	1186	1261
V/C Ratio	0.103	0.036	0.067	0.009	0.107	0.008	0.072	0.056
Control Delay, s/veh	3.9	3.1	3.8	3.1	4.0	2.9	3.6	3.3
LOS	A	A	A	A	A	A	A	A
95th %tile Queue, veh	0	0	0	0	0	0	0	0

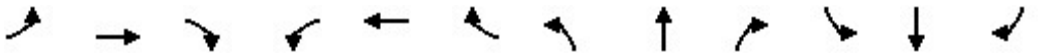
Intersection	
Int Delay, s/veh	2.8

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↕				↕			↕			↕	
Traffic Vol, veh/h	4	5	49	7	4	10	60	6	10	0	11	9	0	8
Future Vol, veh/h	4	5	49	7	4	10	60	6	10	0	11	9	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	5	53	8	4	11	65	7	11	0	12	10	0	9

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	72	72	0	0	61	61	0	0	138	177	31	144	178	36
Stage 1	-	-	-	-	-	-	-	-	75	75	-	99	99	-
Stage 2	-	-	-	-	-	-	-	-	63	102	-	45	79	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1288	1526	-	-	1308	1540	-	-	819	716	1036	811	715	1029
Stage 1	-	-	-	-	-	-	-	-	926	832	-	896	812	-
Stage 2	-	-	-	-	-	-	-	-	941	810	-	963	829	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	1405	1405	-	-	1461	1461	-	-	801	703	1036	791	702	1029
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	801	703	-	791	702	-
Stage 1	-	-	-	-	-	-	-	-	920	826	-	890	803	-
Stage 2	-	-	-	-	-	-	-	-	923	801	-	945	823	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	1.4	9	9.1
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	801	1036	1405	-	-	1461	-	-	791	1029
HCM Lane V/C Ratio	0.014	0.012	0.004	-	-	0.007	-	-	0.012	0.008
HCM Control Delay (s)	9.6	8.5	7.6	0	-	7.5	0.1	-	9.6	8.5
HCM Lane LOS	A	A	A	A	-	A	A	-	A	A
HCM 95th %tile Q(veh)	0	0	0	-	-	0	-	-	0	0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	2154	20	150	1419	56	6	58	182	46	57	39
Future Volume (vph)	78	2154	20	150	1419	76	6	77	182	76	70	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0	7.0	7.3	7.3	7.3	7.3	7.3	
Lane Util. Factor	0.97	0.86		0.97	0.86	1.00	1.00	0.95	0.95	1.00	0.95	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.94	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	6399		3433	6408	1583	1770	1656	1504	1770	3320	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	6399		3433	6408	1583	1770	1656	1504	1770	3320	
Peak-hour factor, PHF	0.91	0.91	0.91	0.88	0.88	0.88	0.85	0.85	0.85	0.94	0.94	0.94
Adj. Flow (vph)	86	2367	22	170	1612	86	7	91	214	81	74	52
RTOR Reduction (vph)	0	1	0	0	0	47	0	22	121	0	40	0
Lane Group Flow (vph)	86	2388	0	170	1613	39	7	137	25	81	86	0
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	7.2	50.1		11.3	54.2	54.2	1.4	20.5	20.5	9.5	28.6	
Effective Green, g (s)	7.2	50.1		11.3	54.2	54.2	1.4	20.5	20.5	9.5	28.6	
Actuated g/C Ratio	0.06	0.42		0.09	0.45	0.45	0.01	0.17	0.17	0.08	0.24	
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	7.3	7.3	7.3	7.3	7.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	205	2671		323	2894	714	20	282	256	140	791	
v/s Ratio Prot	0.03	c0.37		c0.05	c0.25		0.00	c0.08		c0.05	0.03	
v/s Ratio Perm						0.02			0.02			
v/c Ratio	0.42	0.89		0.53	0.56	0.05	0.35	0.49	0.10	0.58	0.11	
Uniform Delay, d1	54.4	32.5		51.8	24.1	18.5	58.8	45.0	41.9	53.3	35.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.4	4.3		1.5	0.2	0.0	10.3	5.9	0.8	5.7	0.3	
Delay (s)	55.8	36.8		53.3	24.3	18.5	69.1	50.9	42.7	59.0	36.0	
Level of Service	E	D		D	C	B	E	D	D	E	D	
Approach Delay (s)		37.4			26.7			47.5			45.0	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	34.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	28.6
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	2	33	0	7	8	49	12	8	99	1
Future Vol, veh/h	1	0	2	33	0	7	8	112	12	8	152	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	2	36	0	8	9	122	13	9	165	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	263	337	83	248	331	68	166	0	0	135	0	0
Stage 1	184	184	-	147	147	-	-	-	-	-	-	-
Stage 2	79	153	-	101	184	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	669	583	960	685	587	981	1410	-	-	1447	-	-
Stage 1	800	746	-	841	774	-	-	-	-	-	-	-
Stage 2	921	770	-	894	746	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	657	575	960	676	579	981	1410	-	-	1447	-	-
Mov Cap-2 Maneuver	657	575	-	676	579	-	-	-	-	-	-	-
Stage 1	794	741	-	835	769	-	-	-	-	-	-	-
Stage 2	907	765	-	886	741	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	10.4	0.5	0.4
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1410	-	-	832	715	1447	-	-
HCM Lane V/C Ratio	0.006	-	-	0.004	0.061	0.006	-	-
HCM Control Delay (s)	7.6	0	-	9.3	10.4	7.5	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-

Intersection	
Intersection Delay, s/veh	3.6
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	274	75	62	211
Demand Flow Rate, veh/h	279	76	63	215
Vehicles Circulating, veh/h	109	154	232	82
Vehicles Exiting, veh/h	188	141	156	148
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.8	3.3	3.5	3.5
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Right	Left	Right	Left	Right
Designated Moves	LT	TR	LT	TR	LT	TR	LT	TR
Assumed Moves	LT	TR	LT	TR	LT	TR	LT	R
RT Channelized								
Lane Util	0.470	0.530	0.474	0.526	0.476	0.524	0.460	0.540
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	131	148	36	40	30	33	99	116
Cap Entry Lane, veh/h	1221	1294	1172	1246	1090	1166	1252	1324
Entry HV Adj Factor	0.982	0.980	0.979	0.993	0.974	0.999	0.983	0.983
Flow Entry, veh/h	129	145	35	40	29	33	97	114
Cap Entry, veh/h	1198	1268	1147	1238	1063	1165	1231	1302
V/C Ratio	0.107	0.114	0.031	0.032	0.028	0.028	0.079	0.088
Control Delay, s/veh	3.9	3.8	3.4	3.2	3.6	3.3	3.6	3.5
LOS	A	A	A	A	A	A	A	A
95th %tile Queue, veh	0	0	0	0	0	0	0	0

Intersection	
Int Delay, s/veh	2.2

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	1	3	106	10	9	60	5	13	0	17	10	0	4
Future Vol, veh/h	1	3	106	10	10	60	5	13	1	18	10	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	3	115	11	11	65	5	14	1	20	11	1	4

Major/Minor	Major1				Major2			Minor1			Minor2		
Conflicting Flow All	71	70	0	0	126	0	0	184	221	63	156	224	35
Stage 1	-	-	-	-	-	-	-	129	129	-	90	90	-
Stage 2	-	-	-	-	-	-	-	55	92	-	66	134	-
Critical Hdwy	6.44	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.52	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1290	1529	-	-	1458	-	-	760	676	988	795	674	1030
Stage 1	-	-	-	-	-	-	-	861	788	-	907	820	-
Stage 2	-	-	-	-	-	-	-	951	818	-	937	785	-
Platoon blocked, %			-	-		-	-						
Mov Cap-1 Maneuver	1460	1460	-	-	1458	-	-	749	669	988	772	667	1030
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	749	669	-	772	667	-
Stage 1	-	-	-	-	-	-	-	858	786	-	904	813	-
Stage 2	-	-	-	-	-	-	-	938	811	-	914	783	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1	9.3	9.5
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	746	975	1460	-	-	1458	-	-	766	971
HCM Lane V/C Ratio	0.02	0.021	0.002	-	-	0.007	-	-	0.015	0.005
HCM Control Delay (s)	9.9	8.8	7.5	0	-	7.5	0	-	9.8	8.7
HCM Lane LOS	A	A	A	A	-	A	A	-	A	A
HCM 95th %tile Q(veh)	0.1	0.1	0	-	-	0	-	-	0	0

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	31	19	0
Future Vol, veh/h	2	0	0	31	19	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	0	0	34	21	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	56	22	23	0	-	0
Stage 1	22	-	-	-	-	-
Stage 2	34	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	952	1055	1592	-	-	-
Stage 1	1001	-	-	-	-	-
Stage 2	988	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	952	1055	1592	-	-	-
Mov Cap-2 Maneuver	952	-	-	-	-	-
Stage 1	1001	-	-	-	-	-
Stage 2	988	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1592	-	952	-	-
HCM Lane V/C Ratio	-	-	0.002	-	-
HCM Control Delay (s)	0	-	8.8	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	57	0	0	133
Future Vol, veh/h	53	2	57	63	7	133
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	58	2	62	68	8	145

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	185	65	0	0	130	0
Stage 1	96	-	-	-	-	-
Stage 2	89	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	787	986	-	-	1453	-
Stage 1	917	-	-	-	-	-
Stage 2	924	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	782	986	-	-	1453	-
Mov Cap-2 Maneuver	782	-	-	-	-	-
Stage 1	917	-	-	-	-	-
Stage 2	918	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	788	1453	-
HCM Lane V/C Ratio	-	-	0.076	0.005	-
HCM Control Delay (s)	-	-	9.9	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	1549	11	248	2532	67	19	124	380	76	101	50
Future Volume (vph)	95	1549	11	248	2532	106	19	151	380	101	126	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0	7.0	7.3	7.3	7.3	7.3	7.3	
Lane Util. Factor	0.97	0.86		0.97	0.86	1.00	1.00	0.95	0.95	1.00	0.95	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.93	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	6401		3433	6408	1583	1770	1649	1504	1770	3344	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	6401		3433	6408	1583	1770	1649	1504	1770	3344	
Peak-hour factor, PHF	0.91	0.91	0.91	0.88	0.88	0.88	0.85	0.85	0.85	0.94	0.94	0.94
Adj. Flow (vph)	104	1702	12	282	2877	120	22	178	447	107	134	78
RTOR Reduction (vph)	0	1	0	0	0	52	0	22	137	0	62	0
Lane Group Flow (vph)	104	1713	0	282	2877	68	22	304	162	107	150	0
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	8.0	76.0		8.0	76.0	76.0	9.7	9.7	9.7	12.7	12.7	
Effective Green, g (s)	8.0	76.0		8.0	76.0	76.0	9.7	9.7	9.7	12.7	12.7	
Actuated g/C Ratio	0.06	0.56		0.06	0.56	0.56	0.07	0.07	0.07	0.09	0.09	
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	7.3	7.3	7.3	7.3	7.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	203	3603		203	3607	891	127	118	108	166	314	
v/s Ratio Prot	0.03	0.27		c0.08	c0.45		0.01	c0.18		c0.06	c0.04	
v/s Ratio Perm						0.04			0.11			
v/c Ratio	0.51	0.48		1.39	0.80	0.08	0.17	2.57	1.50	0.64	0.48	
Uniform Delay, d1	61.6	17.6		63.5	23.4	13.5	58.9	62.6	62.6	59.0	58.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.9	0.1		202.5	1.3	0.0	2.9	732.4	265.7	17.7	5.2	
Delay (s)	70.6	17.7		266.0	24.7	13.5	61.8	795.0	328.4	76.7	63.2	
Level of Service	E	B		F	C	B	E	F	F	E	E	
Approach Delay (s)		20.7			45.0			554.4			67.7	
Approach LOS		C			D			F			E	

Intersection Summary			
HCM 2000 Control Delay	93.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	28.6
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	1	3	21	22	0	11	1	3	208	29	23	94	2
Future Vol, veh/h	1	3	21	22	0	11	1	3	300	29	23	167	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	3	23	24	0	12	1	3	326	32	25	182	2

Major/Minor	Minor2			Minor1			Major1				Major2		
Conflicting Flow All	404	599	92	493	584	179	184	184	0	0	358	0	0
Stage 1	233	233	-	350	350	-	-	-	-	-	-	-	-
Stage 2	171	366	-	143	234	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	531	414	947	459	422	833	1096	1388	-	-	1197	-	-
Stage 1	749	711	-	639	631	-	-	-	-	-	-	-	-
Stage 2	814	621	-	845	710	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-		-	-
Mov Cap-1 Maneuver	512	403	947	436	411	833	1293	1293	-	-	1197	-	-
Mov Cap-2 Maneuver	512	403	-	436	411	-	-	-	-	-	-	-	-
Stage 1	746	695	-	636	628	-	-	-	-	-	-	-	-
Stage 2	799	619	-	802	694	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	12.5	0.1	1.1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1293	-	-	792	518	1197	-	-
HCM Lane V/C Ratio	0.003	-	-	0.034	0.069	0.021	-	-
HCM Control Delay (s)	7.8	0	-	9.7	12.5	8.1	0.1	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.1	-	-

Intersection	
Intersection Delay, s/veh	4.1
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	223	189	239	199
Demand Flow Rate, veh/h	227	193	243	203
Vehicles Circulating, veh/h	105	350	210	276
Vehicles Exiting, veh/h	374	103	122	267
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.7	4.5	4.1	4.2
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Right	Left	Right	Left	Right
Designated Moves	LT	TR	LT	TR	LT	TR	LT	TR
Assumed Moves	L	TR	LT	TR	LT	TR	LT	R
RT Channelized								
Lane Util	0.551	0.449	0.472	0.528	0.469	0.531	0.473	0.527
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	125	102	91	102	114	129	96	107
Cap Entry Lane, veh/h	1226	1299	978	1055	1113	1188	1047	1123
Entry HV Adj Factor	0.984	0.977	0.976	0.982	0.984	0.981	0.984	0.981
Flow Entry, veh/h	123	100	89	100	112	127	94	105
Cap Entry, veh/h	1206	1269	955	1035	1095	1165	1030	1102
V/C Ratio	0.102	0.079	0.093	0.097	0.102	0.109	0.092	0.095
Control Delay, s/veh	3.8	3.5	4.6	4.3	4.2	4.0	4.3	4.1
LOS	A	A	A	A	A	A	A	A
95th %tile Queue, veh	0	0	0	0	0	0	0	0

Intersection	
Int Delay, s/veh	1.6

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	2	7	61	10	4	12	200	6	12	0	12	2	1	2
Future Vol, veh/h	2	7	61	10	4	13	200	6	12	1	13	2	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	8	66	11	4	14	217	7	13	1	14	2	2	2

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	224	224	0	0	77	77	0	0	238	352	39	311	354	112
Stage 1	-	-	-	-	-	-	-	-	92	92	-	257	257	-
Stage 2	-	-	-	-	-	-	-	-	146	260	-	54	97	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1034	1342	-	-	1279	1520	-	-	696	571	1024	618	570	920
Stage 1	-	-	-	-	-	-	-	-	905	818	-	725	694	-
Stage 2	-	-	-	-	-	-	-	-	842	692	-	952	814	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	1258	1258	-	-	1451	1451	-	-	681	558	1024	598	557	920
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	681	558	-	598	557	-
Stage 1	-	-	-	-	-	-	-	-	898	811	-	719	684	-
Stage 2	-	-	-	-	-	-	-	-	826	682	-	930	807	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.7	9.5	10.5
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	675	993	1258	-	-	1451	-	-	584	756
HCM Lane V/C Ratio	0.02	0.015	0.006	-	-	0.01	-	-	0.006	0.004
HCM Control Delay (s)	10.4	8.7	7.9	0.1	-	7.5	0.1	-	11.2	9.8
HCM Lane LOS	B	A	A	A	-	A	A	-	B	A
HCM 95th %tile Q(veh)	0.1	0	0	-	-	0	-	-	0	0

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	24	15	0
Future Vol, veh/h	2	0	0	24	15	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	0	0	26	16	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	43	17	18	0	-	0
Stage 1	17	-	-	-	-	-
Stage 2	26	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	968	1062	1599	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	997	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	968	1062	1599	-	-	-
Mov Cap-2 Maneuver	968	-	-	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	997	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1599	-	968	-	-
HCM Lane V/C Ratio	-	-	0.002	-	-
HCM Control Delay (s)	0	-	8.7	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	220	0	0	103
Future Vol, veh/h	73	8	220	92	6	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	79	9	239	100	7	112

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	359	170	0	0	339	0
Stage 1	289	-	-	-	-	-
Stage 2	70	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	613	844	-	-	1217	-
Stage 1	735	-	-	-	-	-
Stage 2	945	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	609	844	-	-	1217	-
Mov Cap-2 Maneuver	609	-	-	-	-	-
Stage 1	735	-	-	-	-	-
Stage 2	939	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.7	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	626	1217	-
HCM Lane V/C Ratio	-	-	0.141	0.005	-
HCM Control Delay (s)	-	-	11.7	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	1411	28	182	1552	34	18	78	230	26	55	30
Future Volume (vph)	113	1411	28	182	1552	74	18	106	230	56	85	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0	7.0	7.3	7.3	7.3	7.3	7.3	
Lane Util. Factor	0.97	0.86		0.97	0.86	1.00	1.00	0.95	0.95	1.00	0.95	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.94	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	6389		3433	6408	1583	1770	1665	1504	1770	3323	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	6389		3433	6408	1583	1770	1665	1504	1770	3323	
Peak-hour factor, PHF	0.91	0.91	0.91	0.88	0.88	0.88	0.85	0.85	0.85	0.94	0.94	0.94
Adj. Flow (vph)	124	1551	31	207	1764	84	21	125	271	60	90	62
RTOR Reduction (vph)	0	3	0	0	0	49	0	21	175	0	57	0
Lane Group Flow (vph)	124	1579	0	207	1764	35	21	185	15	60	95	0
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	9.0	45.5		9.0	45.5	45.5	18.2	8.7	8.7	18.2	8.7	
Effective Green, g (s)	9.0	45.5		9.0	45.5	45.5	18.2	8.7	8.7	18.2	8.7	
Actuated g/C Ratio	0.08	0.41		0.08	0.41	0.41	0.17	0.08	0.08	0.17	0.08	
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	7.3	7.3	7.3	7.3	7.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	280	2642		280	2650	654	292	131	118	292	262	
v/s Ratio Prot	0.04	0.25		c0.06	c0.28		0.01	c0.11		c0.03	0.03	
v/s Ratio Perm						0.02			0.01			
v/c Ratio	0.44	0.60		0.74	0.67	0.05	0.07	1.41	0.13	0.21	0.36	
Uniform Delay, d1	48.1	25.1		49.4	26.1	19.3	38.8	50.6	47.1	39.7	48.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.0	0.4		16.0	0.6	0.0	0.5	223.8	2.2	1.6	3.9	
Delay (s)	53.1	25.5		65.4	26.7	19.4	39.2	274.5	49.3	41.2	51.9	
Level of Service	D	C		E	C	B	D	F	D	D	D	
Approach Delay (s)		27.5			30.3			160.1			48.9	
Approach LOS		C			C			F			D	

Intersection Summary			
HCM 2000 Control Delay	42.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	28.6
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	9	26	0	10	17	101	13	14	86	4
Future Vol, veh/h	5	0	9	26	0	10	17	196	13	14	174	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	10	28	0	11	18	213	14	15	189	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	364	484	97	381	479	114	193	0	0	227	0	0
Stage 1	221	221	-	256	256	-	-	-	-	-	-	-
Stage 2	143	263	-	125	223	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	567	481	940	552	484	917	1378	-	-	1339	-	-
Stage 1	761	719	-	726	694	-	-	-	-	-	-	-
Stage 2	845	689	-	866	718	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	548	468	940	535	470	917	1378	-	-	1339	-	-
Mov Cap-2 Maneuver	548	468	-	535	470	-	-	-	-	-	-	-
Stage 1	750	710	-	715	684	-	-	-	-	-	-	-
Stage 2	822	679	-	846	709	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	11.4	0.6	0.6
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1378	-	-	749	605	1339	-	-
HCM Lane V/C Ratio	0.013	-	-	0.02	0.065	0.011	-	-
HCM Control Delay (s)	7.6	0	-	9.9	11.4	7.7	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0	-	-

Intersection	
Intersection Delay, s/veh	3.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	170	85	145	160
Demand Flow Rate, veh/h	174	86	148	162
Vehicles Circulating, veh/h	113	217	141	128
Vehicles Exiting, veh/h	177	72	146	175
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.7	3.8	4.0	3.5
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Right	Left	Right	Left	Right
Designated Moves	LT	R	LT	R	LT	R	LT	R
Assumed Moves	LT	R	LT	R	LT	R	LT	R
RT Channelized								
Lane Util	0.724	0.276	0.872	0.128	0.932	0.068	0.562	0.438
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	126	48	75	11	138	10	91	71
Cap Entry Lane, veh/h	1217	1290	1106	1181	1186	1260	1200	1274
Entry HV Adj Factor	0.977	0.979	0.986	1.000	0.981	1.000	0.984	0.986
Flow Entry, veh/h	123	47	74	11	135	10	90	70
Cap Entry, veh/h	1188	1263	1090	1181	1163	1260	1180	1256
V/C Ratio	0.104	0.037	0.068	0.009	0.116	0.008	0.076	0.056
Control Delay, s/veh	3.9	3.1	3.9	3.1	4.1	2.9	3.7	3.3
LOS	A	A	A	A	A	A	A	A
95th %tile Queue, veh	0	0	0	0	0	0	0	0

Intersection	
Int Delay, s/veh	3

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↕				↕			↕			↕	
Traffic Vol, veh/h	4	5	49	7	4	10	60	6	10	0	11	9	0	8
Future Vol, veh/h	4	5	49	7	4	11	60	6	10	1	12	9	1	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	5	53	8	4	12	65	7	11	1	13	10	1	9

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	72	72	0	0	61	61	0	0	140	179	31	146	180	36
Stage 1	-	-	-	-	-	-	-	-	75	75	-	101	101	-
Stage 2	-	-	-	-	-	-	-	-	65	104	-	45	79	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1288	1526	-	-	1308	1540	-	-	816	714	1036	808	713	1029
Stage 1	-	-	-	-	-	-	-	-	926	832	-	894	811	-
Stage 2	-	-	-	-	-	-	-	-	938	808	-	963	829	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	1405	1405	-	-	1465	1465	-	-	797	701	1036	786	700	1029
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	797	701	-	786	700	-
Stage 1	-	-	-	-	-	-	-	-	920	826	-	888	802	-
Stage 2	-	-	-	-	-	-	-	-	919	799	-	943	823	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	1.5	9.1	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	792	1017	1405	-	-	1465	-	-	781	1001
HCM Lane V/C Ratio	0.014	0.013	0.004	-	-	0.008	-	-	0.013	0.009
HCM Control Delay (s)	9.6	8.6	7.6	0	-	7.5	0.1	-	9.7	8.6
HCM Lane LOS	A	A	A	A	-	A	A	-	A	A
HCM 95th %tile Q(veh)	0	0	0	-	-	0	-	-	0	0

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	21	17	0
Future Vol, veh/h	2	0	0	21	17	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	0	0	23	18	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	42	19	20	0	-	0
Stage 1	19	-	-	-	-	-
Stage 2	23	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	969	1059	1596	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	1000	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	969	1059	1596	-	-	-
Mov Cap-2 Maneuver	969	-	-	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	1000	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1596	-	969	-	-
HCM Lane V/C Ratio	-	-	0.002	-	-
HCM Control Delay (s)	0	-	8.7	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	116	0	0	126
Future Vol, veh/h	88	10	116	95	6	126
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	96	11	126	103	7	137

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	261	115	0	0	229	0
Stage 1	178	-	-	-	-	-
Stage 2	83	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	706	916	-	-	1336	-
Stage 1	835	-	-	-	-	-
Stage 2	931	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	702	916	-	-	1336	-
Mov Cap-2 Maneuver	702	-	-	-	-	-
Stage 1	835	-	-	-	-	-
Stage 2	925	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	719	1336	-
HCM Lane V/C Ratio	-	-	0.148	0.005	-
HCM Control Delay (s)	-	-	10.9	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	-

Appendix G

Turn Lane Criteria

NCHRP 457

can also indirectly reduce the delay to the left-turn or through movements by lessening their need to compete for service with the right-turn movement.

One disadvantage of adding a lane to the minor-road approach is that it may require reallocating the existing pavement or widening of the approach cross section. Sometimes the pavement width needed for the additional lane is available within the existing roadway cross section. In this instance, the only impact is a reallocation of the paved surface through modification of the pavement markings. However, in downtown settings this reallocation may require the removal of some curb parking stalls and can affect adjacent business significantly. Occasionally, the cross section must be widened to provide for the additional lane. If the needed lane width can be provided within the available right-of-way, the cost may be limited to that of construction. However, if additional right-of-way is needed, the costs of acquiring this property in urban settings can be high.

Guidance. The literature does not offer guidance regarding conditions where a second approach lane would benefit from the operation of a minor-road approach. However, the procedures in Chapter 17 of the *Highway Capacity Manual 2000* (*15*) can be used to identify major- and minor- road volume combinations that would benefit operationally from the provision of a second approach lane or bay. Bonneson and Fontaine (*20*) developed Figure 2-4 using these procedures and an assumed upper limit of 0.7 for the shared-lane, minor-road volume-to-capacity ratio.

Application. Figure 2-4 indicates the conditions that may justify the use of two approach lanes. Use of the information in this figure requires two types of data:

1. Major-road approach volume for the peak hour of the average day and
2. Minor-road turn movement volume for the peak hour of the average day (used to compute right-turn percentage).

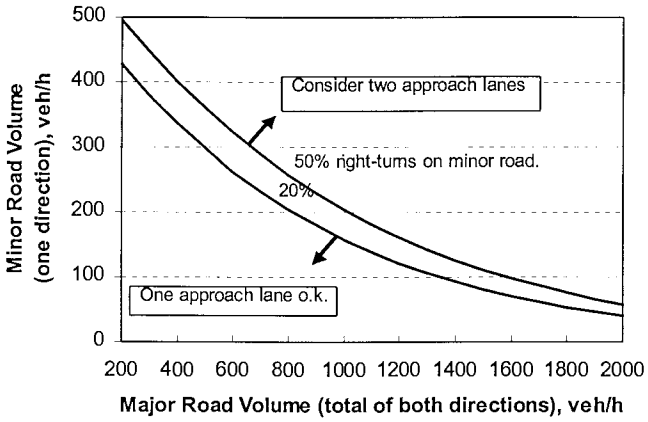


Figure 2-4. Guideline for determining minor-road approach geometry at two-way stop-controlled intersections.

Figure 2-4 would be used once for each minor-road approach to the intersection. The appropriate trend line would be identified on the basis of the percentage of right-turns on the subject minor-road approach. If the volume combination for the major and minor roads intersects above or to the right of this trend line, a second traffic lane should be considered for the subject minor-road approach. If a bay is selected for addition to the intersection, it should be long enough to store vehicles 95 percent of the time (i.e., the bay should not overflow more than 5 percent of the time). Techniques for estimating the 95th percentile storage length are provided in the section, Increase the Length of the Turn Bay.

Add a Left-Turn Bay on the Major Road

Introduction. Provision of a left-turn bay on the major road to a two-way stop-controlled intersection can significantly improve operations and safety at the intersection. A left-turn bay effectively separates those vehicles that are slowing or stopped to turn from those vehicles in through traffic lanes. This separation minimizes turn-related crashes and eliminates unnecessary delay to through vehicles. Data reported by Neuman (*21*) indicate that the crash rate for unsignalized intersections can be reduced by 35 to 75 percent through the provision of a left-turn bay.

One disadvantage of adding a bay to the major-road approach is that it may require reallocating the existing pavement or widening of the approach cross section. Sometimes the pavement width needed for the additional lane is available within the existing roadway cross section. However, in downtown settings this reallocation may require the removal of some curb parking stalls and can affect adjacent business significantly. Occasionally, the cross section must be widened to provide for the turn bay. If the needed width can be provided within the available right-of-way, the cost may be limited to that of construction. However, if additional right-of-way is needed, the costs of acquiring this property in urban settings can be high.

Guidance. Neuman (*21*) suggests that the following guidelines should be used to determine when to provide a left-turn bay on the major road of a two-way stop-controlled intersection:

1. A left-turn lane should be considered at any median crossover on a divided, high-speed road.
2. A left-turn lane should be provided on the unstopped approach of a high-speed rural highway when it intersects with other arterials or collectors.
3. A left-turn lane is recommended on the unstopped approach of any intersection when the combination of intersection volumes intersect above or to the right of the appropriate trend line shown in Figure 2-5.

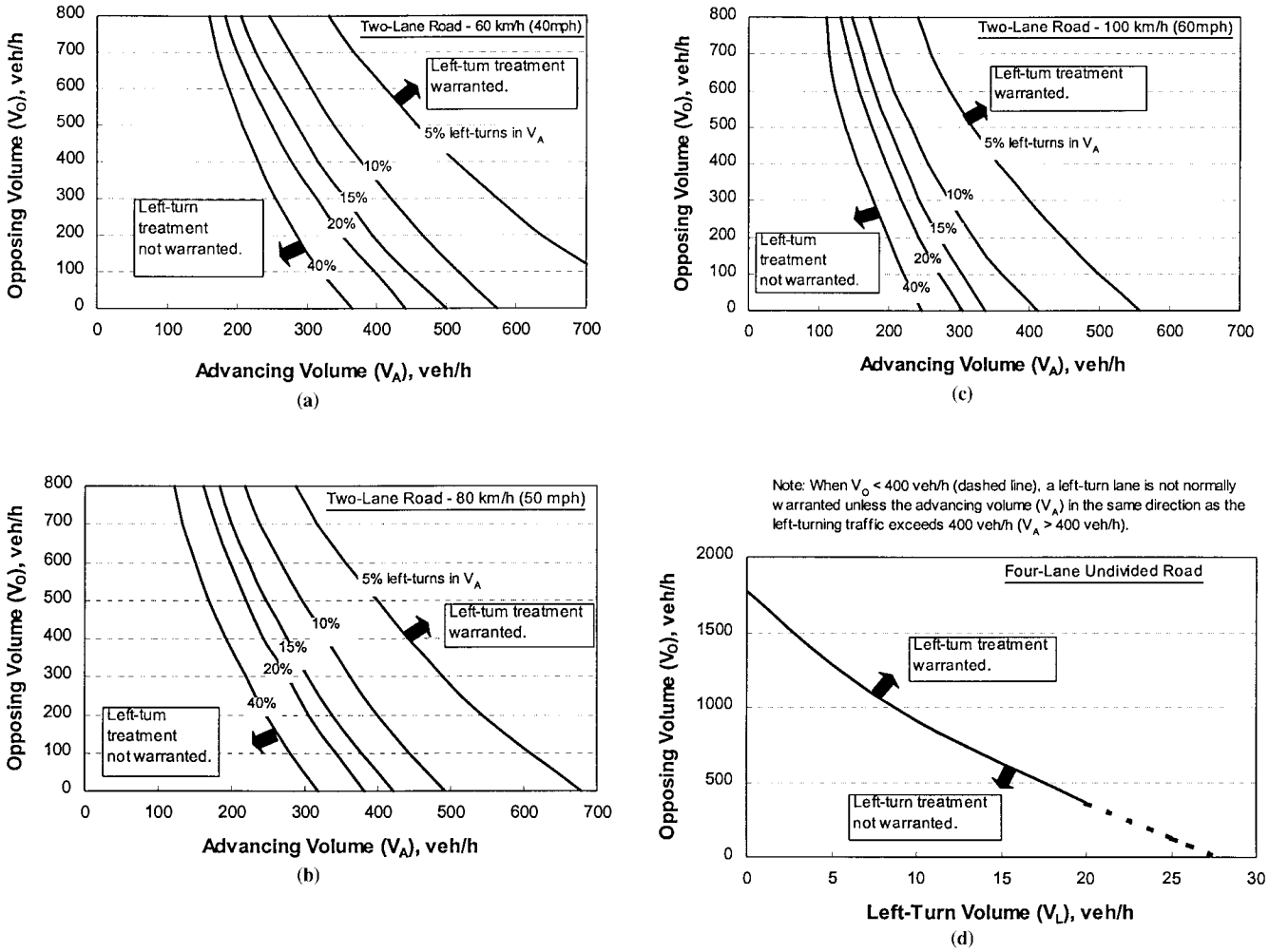


Figure 2-5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

Application. The guidance stated in the preceding section defines the conditions that may justify the provision of a left-turn bay. Application of this guidance requires two types of data:

1. Major-road turn movement volume for the peak hour of the average day and
2. Major-road 85th percentile speed (posted speed can be substituted if data are unavailable).

Use of Figure 2-5 requires determination of the opposing volume, the advancing volume, and the operating speed. The opposing volume should include only the right-turn and through movements on the approach across from (and heading in the opposite direction of) the subject major-road approach. The advancing volume should include the left-turn, right-turn, and through movements on the subject approach. The operating speed can be estimated as the 85th percentile speed. If the operating speed does not coincide with 60, 80, or 100 km/h (i.e., 40, 50, or 60 mph), then interpolation can be used or, as a more conservative approach, the operating speed can be rounded up to the nearest speed for which a figure is provided.

In application, Figure 2-5 is used once for each major-road approach to the intersection. The appropriate trend line is identified on the basis of the percentage of left-turns on the subject major-road approach. If the advancing and opposing volume combination intersects above or to the right of this trend line, a left-turn bay should be considered for the subject approach. If a bay is included at the intersection, it should be long enough to store left-turn vehicles 99.5 percent of the time (i.e., the bay should not overflow more than 0.5 percent of the time). Techniques for estimating this storage length are provided in the section, Increase the Length of the Turn Bay.

Add a Right-Turn Bay on the Major Road

Introduction. Provision of a right-turn bay on the major road to a two-way stop-controlled intersection can signifi-

cantly improve operations and safety at the intersection. A right-turn bay effectively separates those vehicles that are slowing or stopped to turn from those vehicles in the through traffic lanes. This separation minimizes turn-related collisions (e.g., angle, rear-end, and same-direction-sideswipe) and eliminates unnecessary delay to through vehicles.

One disadvantage of adding a bay to the major-road approach is that it may require reallocating the existing pavement or widening of the approach cross section. Sometimes the pavement width needed for the additional lane is available within the existing roadway cross section. However, in downtown settings this reallocation may require the removal of some curb parking stalls and can affect adjacent business significantly. Occasionally, the cross section must be widened to provide for the turn bay. If the needed width can be provided within the available right-of-way, the cost may be limited to that of construction. However, if additional right-of-way is needed, the costs of acquiring this property in urban settings can be high.

Guidance. Hasan and Stokes (*22*) developed guidelines for determining when to provide a right-turn bay on the major road of a two-way stop-controlled intersection. These guidelines were based on an evaluation of the operating and collision costs associated with the right-turn maneuver relative to the cost of constructing a right-turn bay. The operating costs included those of road-user fuel and delay. Separate guidelines were developed for two-lane and four-lane roadways. These guidelines are shown in Figure 2-6.

Application. The guidance described in the preceding section defines conditions that may justify the provision of a right-turn bay. Application of this guidance requires two types of data:

1. Major-road turn movement volume for the peak hour of the average day and
2. Major-road 85th percentile speed (posted speed can be substituted if data are unavailable).

Figure 2-6 should be consulted once for each major-road approach. If the combination of major-road approach volume and right-turn volume intersects above or to the right of the trend line corresponding to the major-road operating speed, then a right-turn bay is a viable alternative.

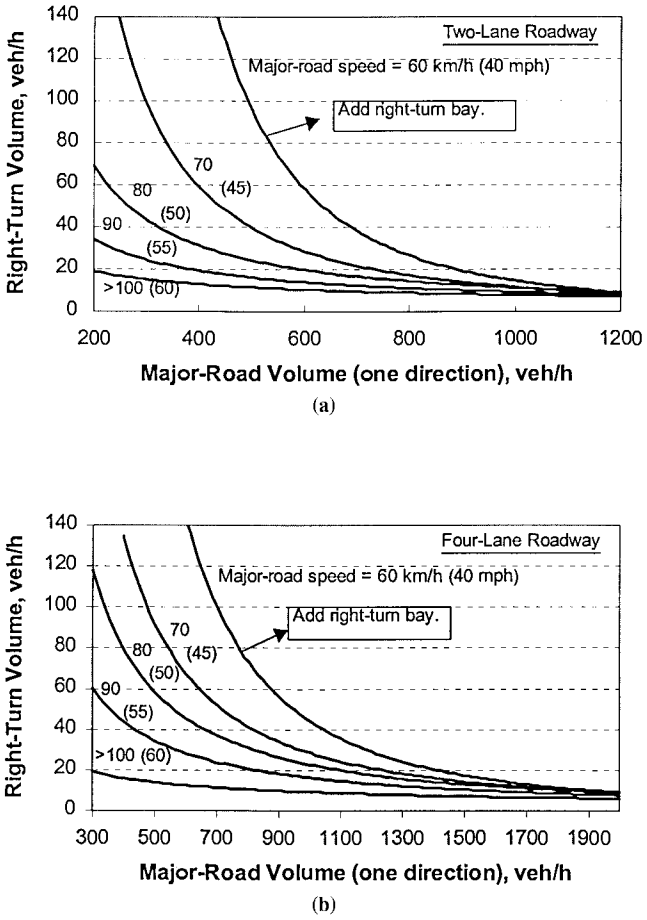


Figure 2-6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

Increase Length of Turn Bay

Introduction. Turn bay length can affect the safety and operation of the intersection approach significantly. This effect becomes more negative as the frequency with which vehicles exceed the available storage increases. Also, for unstopped approaches, this effect becomes more negative as more of the turning vehicle's deceleration occurs in the through lane, prior to the bay. The need to provide adequate storage length, deceleration length, or both is dependent on the type of approach control used and whether the vehicle is turning left or right. Table 2-13 identifies the appropriate bay

TABLE 2-13 Turn-bay length components at unsignalized intersections

Approach Control	Length Components	
	Left-Turn Bay	Right-Turn Bay
Unstopped	Storage Length + Deceleration Length	Deceleration Length
Stopped	Storage Length	Storage Length

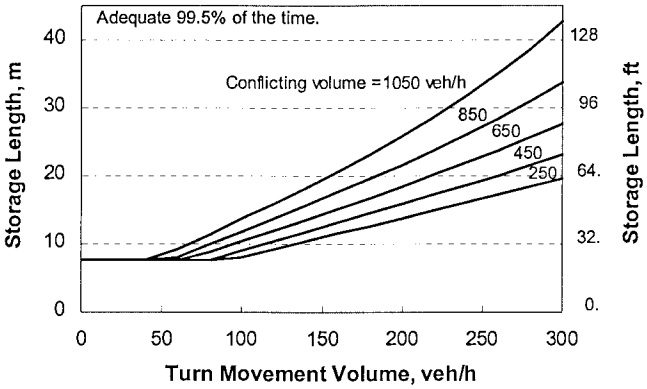


Figure 2-7. Guideline for determining if the bay storage length for an unstopped approach is adequate.

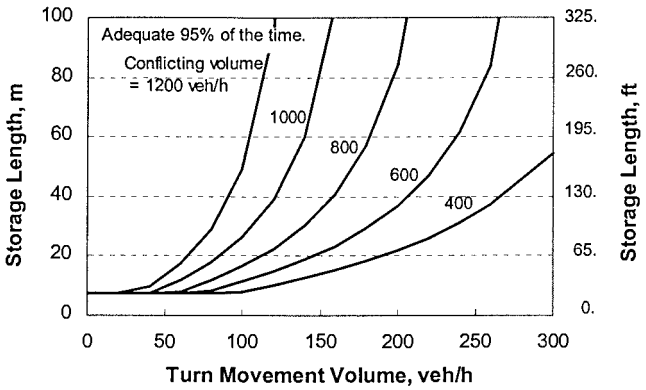


Figure 2-8. Guideline for determining if the bay storage length for a stopped approach is adequate.

length components for typical combinations of approach control and turn movement.

Guidance. A turn bay should be long enough to store waiting vehicles almost all of the time and, in doing so, prevent conflict between the through and turning movements. A bay equal in length to the 95th percentile queue (which allows for a 5-percent probability of overflow) is typically used for most stop- or signal-controlled approaches. A bay length corresponding to a 0.5-percent probability of overflow is recommended by Harmelink (*23*) for unstopped approaches in recognition of the greater speed differential between through and turning movements.

Figures 2-7 and 2-8 illustrate the combination of volume and storage length that limit overflows to 0.5 and 5 percent, respectively. The trends in these figures are based on the queue length equation reported by Harmelink (*23*). The capacity needed for this equation was estimated using the procedures in Chapter 17 of the *Highway Capacity Manual 2000* (*15*). The development of Figures 2-7 and 2-8 is described elsewhere by Bonneson and Fontaine (*20*). A practical minimum storage length of 8 m (25 ft) is reflected in both figures.

As indicated in Table 2-13, a bay on the unstopped approach to an intersection should also provide sufficient length for the turning vehicle to decelerate once it is clear of the adjacent through traffic lane. A report by Koepke (*24*) provides an indication of the bay length needed for turn vehicle deceleration. However, the lengths cited by Koepke include both deceleration length and bay taper length. Subtraction of the taper length [estimated at 35 m (120 ft)] from the reported lengths leaves a conservative estimate of the length of full-width turn bay needed to facilitate the deceleration process. This length is shown in Figure 2-9.

Application. The guidelines described in the preceding section can be used to determine when turn-bay length may need to be increased to minimize operational or safety problems associated with short turn bays. Application of this guideline requires three types of data:

1. Major- and minor-road turn movement volumes for the peak hour of the average day;
2. Major-road 85th percentile speed (posted speed can be substituted if data are unavailable); and
3. Major- and minor-road bay lengths (taper length should be excluded).

In application, each turn movement is considered separately. Table 2-13 is consulted first to determine if storage length, deceleration length, or both should be provided within the bay for the subject approach. Next, Figures 2-7, 2-8, and 2-9 are consulted. The subject movement volume and conflicting volumes should be used to determine the minimum length(s) needed from the appropriate figure(s). The operat-

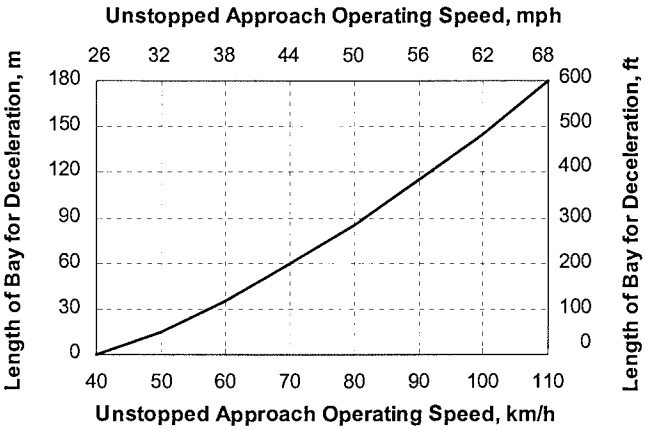


Figure 2-9. Guideline for determining if the deceleration length component of a bay is adequate.

ing speed can be estimated as the 85th percentile speed. The conflicting volume should reflect those traffic streams that have priority over the subject movement and that cross its travel path within the intersection [see Chapter 17 of the *Highway Capacity Manual 2000* (*15*) for a more detailed definition of conflicting volume]. If the available bay length is less than the computed minimum length, then an increase in bay length is a viable alternative.

Increase the Right-Turn Radius

Introduction. The radius of the right-turn path can affect the operation and safety of an intersection. Larger radii have the following advantages:

- On the major-road approach, they allow for higher speed turns and by that, reduce delay to following through vehicles.
- On the minor-road approach, they widen the throat of the approach and effectively act as a short right-turn bay.
- They allow large trucks and buses to turn without encroachment into adjacent lanes or onto adjacent property.

Larger radii also have disadvantages. These disadvantages include the following:

- They require more right-of-way.
- They may reduce pedestrian safety through increased crossing distance and higher turn speeds.

The second disadvantage noted for large radii can be minimized through the inclusion of island channelization on the outside of the right-turn path. This island would have a triangular shape and serve as a pedestrian refuge.

Guidance. The AASHTO document, *A Policy on Geometric Design of Highways and Streets* (*Green Book*) (*5*) provides general guidance on the minimum radii needed at intersections in suburban or urban areas. These guidelines are reproduced in Table 2-14.

Larger radii should be used when right-of-way is available and pedestrian volumes are minimal. If larger radii are desired and right-of-way is restricted, then a simple-curve-radius-with-taper or a 3-centered curve may be used to increase the "effective" radius without using as much right-of-way as a simple radius. Desirable geometrics for these curves are described in Tables IX-1 and IX-2 of the *Green Book* (*5*). If larger radii are desired and pedestrian volumes are significant, then island channelization should be provided. The *Green Book* lists several 3-centered curve designs in Table IX-4 that produce islands meeting the minimum island size requirements.

Hasan and Stokes (*22*) developed guidelines for determining when to provide a simple-curve-radius-with-taper design on the major road of a two-way stop-controlled intersection. These guidelines were based on an evaluation of the operating and collision costs associated with the right-turn maneuver relative to the cost of constructing a right-turn bay. The operating costs included those of road-user fuel and delay. Separate guidelines were developed for two-lane and four-lane roadways. These guidelines are shown in Figure 2-10.

Application. The guidance provided in the preceding section can be used to determine if an intersection has adequate right-turn radius design. Application of the *Green Book* (*5*) guidance requires three types of data:

1. Heavy vehicle volume during the peak hour of the average day;
2. Major- and minor-road classification; and
3. Major- and minor-road right-turn radius, measured to the edge of the traveled way.

As a first step, the engineer should decide whether a simple curve radius or a more complicated curve design is appropriate for the subject intersection. In general, a simple curve radius is appropriate for low-speed approaches to urban intersections; otherwise, a simple-curve-radius-with-taper or a 3-centered curve design should be considered.

If a simple curve radius is deemed appropriate, Table 2-14 is consulted once for each intersection approach. If the existing right-turn radius on a given approach does not equal or exceed the value listed, then increasing the right-turn radius should be considered a viable alternative.

TABLE 2-14 Guideline for determining the need for a larger simple radius

	Local or Collector Street[1]		Arterial Street	
	Few Trucks[2]	Many Trucks	Few Trucks[2]	Many Trucks
Minimum Simple Radius[3], m (ft)	4.5 (15)	7.5 (25)	9 (30)	15 (50)

Note:
1 - If the local or collector street cross-section width is less than 11 m (36 ft), then use the "arterial street" criteria.
2 - "Few Trucks" is defined herein as being less than 10 trucks per hour.
3 - Radius is measured to the inside edge of the traveled way.

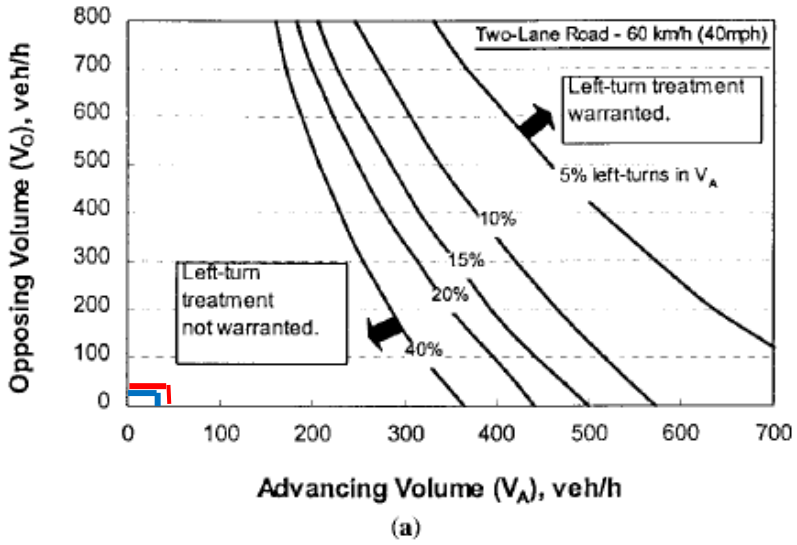
Left Turn Warrant Analysis					
Intersection	Year 2023				
	Advancing Volume	Opposing Volume	Left Turn Volumes (Includes U-turns)	AM	PM
Silent Manor Dr & Driveway 1	31(24)	21(17)	0(0)	No	No
Stadium Dr & Driveway 2	140(109)	120(312)	7(6)	No	No

LEGEND:
AM Volume (PM Volume)

Silent Manor Dr & Driveway 1

AM Peak Volumes

PM Peak Volume

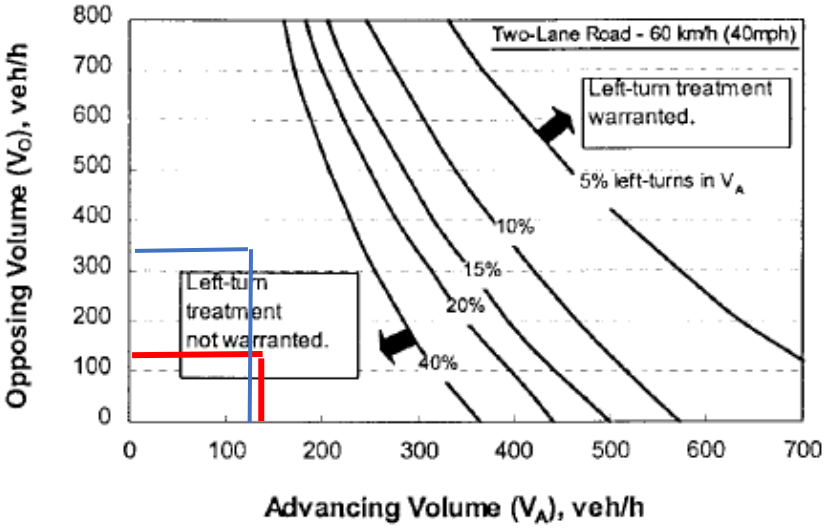


(a)

Stadium Dr & Driveway 2

AM Peak Volumes

PM Peak Volume



(a)

Right Turn Warrant Analysis				
Intersection	Year 2023			
	Major-Road Volume	Right Turn Volume	AM	PM
Silent Manor Dr & Driveway 1	21(17)	2(2)	No	No
Stadium Dr & Driveway 2	120(312)	63(92)	No	No

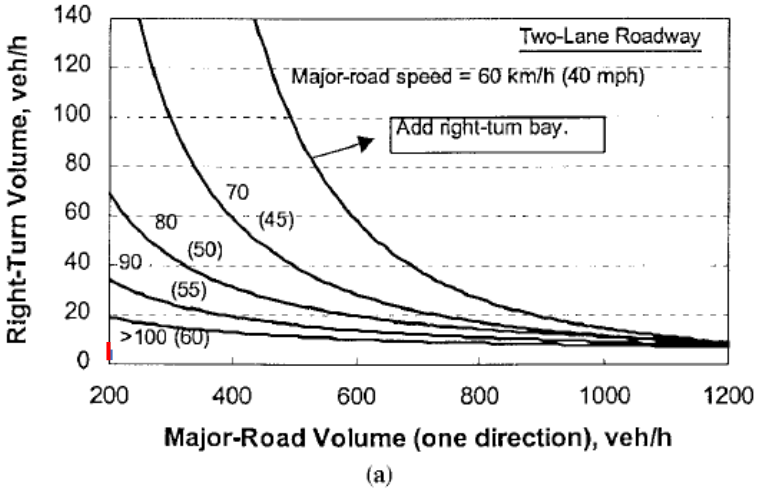
LEGEND:

AM Volume (PM Volume)

Silent Manor Dr & Driveway 1

AM Peak Volumes

PM Peak Volume

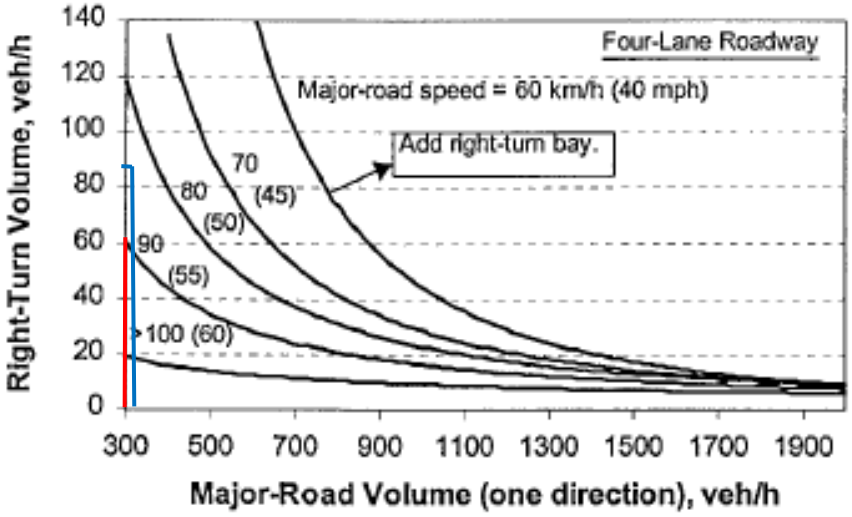


(a)

Stadium Dr & Driveway 2

AM Peak Volumes

PM Peak Volume

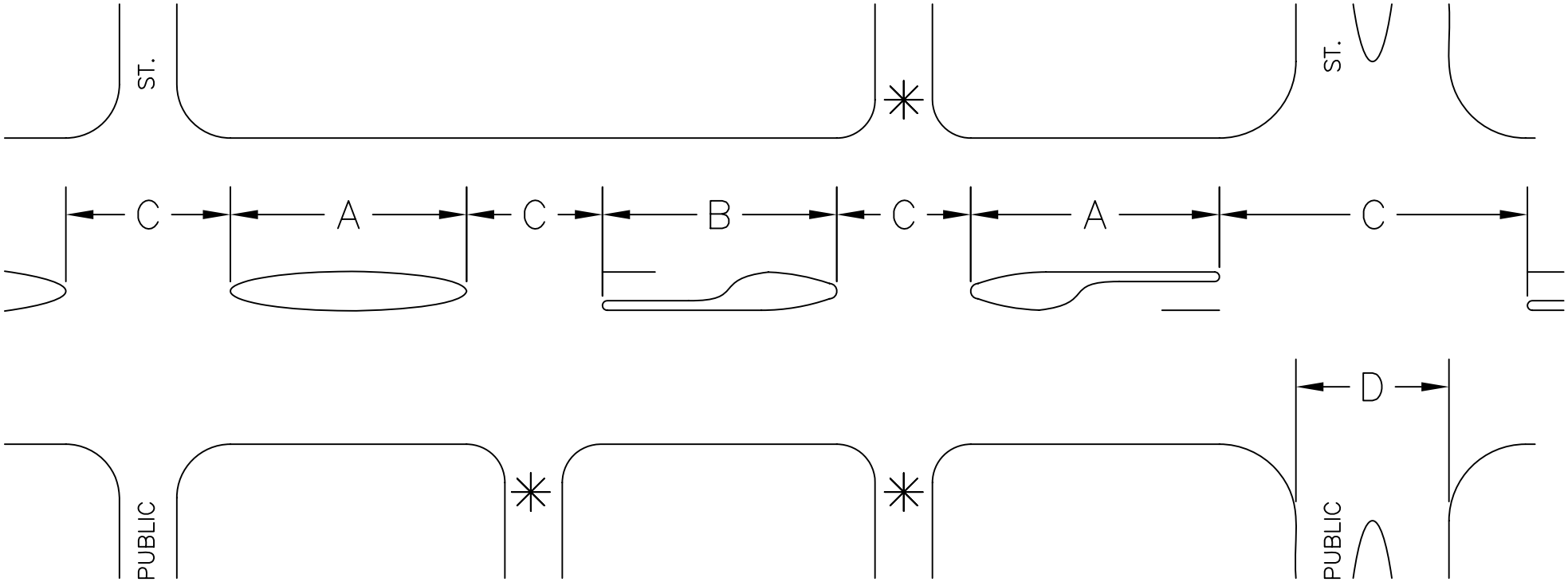


(b)

Appendix H

Median Opening Analysis

TYPICAL LENGTH OF MEDIAN AND MEDIAN OPENING



TYPICAL LENGTH OF MEDIAN OPENING "C" = 50' OR D + 10" WHICHEVER IS GREATER

MINIMUM ACCEPTABLE MEDIAN LENGTH FOR TYPE OF STREET

IF PLANNED DIVIDED STREET IS	PURPOSE OF MEDIAN INTERRUPTION			
	ARTERIAL/ HIGHWAY (A)	COLLECTOR STREET (A)	LOCAL STREET (A)	PRIVATE STREET OR DRIVEWAY (B)
ARTERIAL/HIGHWAY	350'	300'	300'	300'
COLLECTOR STREET	300'	250'	250'	250'
LOCAL STREET	250'	250'	250'	200'

Appendix I

Signal Timings

Station : 900 - US 90A @ University_atc (Standard File)

Phase Timings 1-16 [1.1.1]

	1 (SL)	2 (NR)	3 (WL)	4 (ER)	5 (NL)	6 (SR)	7 (EL)	8 (WR)	9	10	11	12	13	14	15	16
Walk		5		5				5								
Ped Clearance		46		25				25								
Min Green	4	4	4	7	4	4	4	7								
Gap Ext	3	3	2	2.5	3	3	3	2.5								
Max1	25	25	20	50	20	25	20	50								
Max2	30	30	25	70	25	30	25	70								
Yellow Clr	4	4	5	5	4	4	5	5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red Clr	3.3	3.3	2	2	3.3	3.3	2	2								
Red Revert																
Added Initial																
Max Initial																
Time Before Reduce																
Cars Before Reduce																
Time To Reduce																
Reduce By																
Min Gap																
Dynamic Max Limit																
Dynamic Max Step																
Auto Flash Entry																
Auto Flash Exit																
Non-Actuated 1																
Non-Actuated 2																
Rest In Walk																

Phase Option [1.1.2]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable	ON	ON	ON	ON	ON	ON	ON	ON								
Lock Call																
Min Recall				ON				ON								
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry		ON		ON	ON			ON								
Sim Gap Enable																
Guar Passage																
Cond Service																
Add Init Calc																

Phase Option+ [1.1.3]/[1.1.5]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Reservice																
Ped Clr Thru Yellow																
Skip Red-NoCall																
Red Rest																
Max 2																
Max Inhibit																
Ped Delay																
Red Rest On Gap																
Conflicting P																
Green Ped Delay Time																
Omit Yel																
Ped Out																
Start Yel																
Inhibit P1																
Inhibit P2																
Inhibit P3																
Inhibit P4																
Inhibit P5																
Inhibit P6																
Inhibit P7																
Inhibit P8																
Call Phs1																
Call Phs2																
Call Phs3																
Call Phs4																
Redirect P Calls From 1																
Redirect P Calls To 1																
Redirect P Calls From 2																
Redirect P Calls To 2																
Redirect P Calls From 3																
Redirect P Calls To 3																
Redirect P Calls From 4																
Redirect P Calls To 4																

Prepared By	Date Implemented	Reviewed By	Traffic Engineer

Station : 900 - US 90A @ University_atc (Standard File)

Coordination, Splits [2.7.1]

Split Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	20	18	18	44	18	20	15	47								
Mode	NON	NON	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase								ON								

Split Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	18	18	15	99	16	20	15	99								
Mode	NON	NON	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase								ON								

Split Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	24	22	22	52	22	24	18	56								
Mode	NON	NON	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase								ON								

Split Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	20	18	18	44	18	20	18	44								
Mode	NON	NON	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase								ON								

Split Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	16	16	16	62	16	16	16	62								
Mode	NON	NON	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase				ON												

Split Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	20	20	20	90	20	20	15	95								
Mode	NON	NON	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase								ON								

Split Table 7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	22	20	20	48	20	22	16	52								
Mode	NON	NON	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase				ON												

Split Table 8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	18	18	22	62	18	18	18	66								
Mode	NON	NON	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase								ON								

Split Table 9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	20	17	15	83	17	20	15	83								
Mode	NON	NON	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase								ON								

Split Table 10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																

Split Table 11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	20	20	20	110	20	20	20	110								
Mode	NON	NON	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase				ON												

Split Table 12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	20	20	20	120	20	20	20	120								
Mode	NON	NON	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase				ON												

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Coordination, Modes,+ [2.1]

Modes

Operational	Correct	Maximum	Force-Off
	SHRT/LNG	MAX INH	FIXED

Modes+

Mode	Leave Before	Leave After	Recycle	Stop In Walk	External	Auto Reset	Latch Sec Foff	Coord Easy Float	Yield Value	Coord NTCIP Yield Sign	Closed Loop Active	
EASY	TIMED	TIMED	P1256_INH	ON	OFF	ON	OFF	OFF		+	ON	ON

Coordination, Pattern 1-16 [2.4]

Pattern	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cycle Time	100	150	120	100	110	150	110	120	135		170	180				
Offset Time	20	130	50	20	50	35	77	40	25		90	90				
Split Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Seq Number	7	6	7	7	11	6	11	7	7	1	10	10	1	1	1	

Coordination, Pattern+ 1-16 [2.5][2.6]

Pattern	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Short	12	24	24	24	20	20	24	24	24	24	24	24	12	12	12	12
Long	35	35	35	35	35	90	35	35	35	35	35	35	35	35	35	35
Dwell																
No Short P 1																
No Short P 2																
No Short P 3																
No Short P 4																
Early Yield																
Offset	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn
CNA	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off
Max 2	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off
Float	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off
Min Veh Perm	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off
Min Ped Perm	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off
Percentage	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off
MI	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off
Ret Hold	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off
ASC																
Ph Opt Table																
Ph Time Table																
Det Grp								1								
Call Inh																
Olp Off 1	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off
Olp Off 2	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off
Olp Off 3	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off
Olp Off 4	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off
Olp Off 5	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off
Olp Off 6	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off
Olp Off 7	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off
Olp Off 8	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off
Dia Mode	dft	dft	dft	dft	dft	dft	dft	dft	dft	dft	dft	dft	dft	dft	dft	dft
Force Mode	dft	dft	dft	dft	dft	dft	dft	dft	dft	dft	dft	dft	dft	dft	dft	dft

Channels/SDLC, Assign to Phases [1.3.1](v61) or [1.8.1](v65, v76)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
PH/OLP #	1	2	3	4	5	6	7	8					2	4	6	8								
Type	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	OLP	OLP	OLP	OLP	PED	PED	PED	PED	PED	PED	PED	PED	PED	PED	PED	PED
Flash	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK
Alt Hz																								
Dimming Green																								
Dimming Yellow																								
Dimming Red																								
Dimming Cyc	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

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Detector, Vehicle Parameters & Options [5.1][5.2]

1-16

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Volume	ON	ON	ON	ON	ON	ON	ON	ON								
Occupancy	ON	ON	ON	ON	ON	ON	ON	ON								
Yellow Lock																
Red Lock																
Extend	ON	ON	ON	ON	ON	ON	ON	ON								
Added Initial																
Queue																
Call	ON	ON	ON	ON	ON	ON	ON	ON								
Call Phase	1	2	3	4	5	6	7	8								
Switch Phase																
Delay Time																
Extend Time																
Queue Limit																
No Activity																
Max Presence	10	10	10	10	10	10	10	10								
Erratic Counts																
Fail Time	30	30	30	30	30	30	30	30								

17-32

	17 (NL1)	18	19 (NT1)	20	21 (NR1)	22	23	24	25	26 (WL1)	27	28 (WL2)	29	30 (WT1)	31	32 (WT2)
Volume	ON	ON	ON	ON	ON	ON	ON			ON	ON	ON	ON	ON	ON	ON
Occupancy	ON	ON	ON	ON	ON	ON	ON			ON	ON	ON	ON	ON	ON	ON
Yellow Lock																
Red Lock	ON	ON	ON	ON	ON	ON	ON			ON	ON	ON	ON	ON	ON	ON
Extend	ON	ON	ON	ON	ON	ON	ON			ON	ON	ON	ON	ON	ON	ON
Added Initial																
Queue																
Call	ON	ON	ON	ON	ON	ON	ON			ON	ON	ON	ON	ON	ON	ON
Call Phase	5	5	2	2	2	2	2			3	3	3	3	8	8	8
Switch Phase																
Delay Time																
Extend Time																
Queue Limit																
No Activity																
Max Presence	5	5	5	5	5	5	5			5	5	5	5	5	5	5
Erratic Counts																
Fail Time	7	7	7	7	7	7	7			7	7	7	7	7	7	7

33-48

	33	34 (WT3)	35	36 (WT4)	37	38 (WR1)	39	40	41 (SL1)	42	43	44 (ST1)	45	46	47 (ST2)	48
Volume	ON	ON	ON	ON	ON	ON			ON	ON	ON	ON	ON	ON	ON	ON
Occupancy	ON	ON	ON	ON	ON	ON			ON	ON	ON	ON	ON	ON	ON	ON
Yellow Lock																
Red Lock	ON	ON	ON	ON	ON	ON			ON	ON	ON	ON	ON	ON	ON	ON
Extend	ON	ON	ON	ON	ON	ON			ON	ON	ON	ON	ON	ON	ON	ON
Added Initial																
Queue																
Call	ON	ON	ON	ON	ON	ON			ON	ON	ON	ON	ON	ON	ON	ON
Call Phase	8	8	8	8	8	8			1	1	1	6	6	6	6	6
Switch Phase																
Delay Time																
Extend Time																
Queue Limit																
No Activity																
Max Presence	5	5	5	5	5	5			5	5	5	5	5	5	5	5
Erratic Counts																
Fail Time	7	7	7	7	7	7			7	7	7	7	7	7	7	7

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49-64

	49	50 (SR1)	51	52 (EL1)	53	54 (EL2)	55	56 (ET1)	57	58 (ET2)	59	60 (ET3)	61	62 (ET4)	63	64 (ER1)
Volume	ON	ON		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
Occupancy	ON	ON		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
Yellow Lock																
Red Lock	ON			ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	
Extend	ON			ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	
Added Initial																
Queue																
Call	ON			ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	
Call Phase	6	6		7	7	7	7	4	4	4	4	4	4	4	4	4
Switch Phase																
Delay Time																
Extend Time																
Queue Limit																
No Activity																
Max Presence	5	5		5	5	5	5	5	5	5	5	5	5	5	5	5
Erratic Counts																
Fail Time	7	7		8	8	8	8	8	8	8	8	8	8	8	8	8

Detector, Vehicle Parameters+ [5.3]

1-16

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green Occupancy																
Yellow Occupancy																
Red Occupancy																
External Mode	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
Delay Phase 1																
Delay Phase 2																
Source																

17-32

	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Green Occupancy																
Yellow Occupancy																
Red Occupancy																
External Mode	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
Delay Phase 1																
Delay Phase 2																
Source																

33-48

	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Green Occupancy																
Yellow Occupancy																
Red Occupancy																
External Mode	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
Delay Phase 1																
Delay Phase 2																
Source	3	2														

49-64

	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Green Occupancy																
Yellow Occupancy																
Red Occupancy																
External Mode	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
Delay Phase 1																
Delay Phase 2																
Source																

Detector, Ped Detectors 1-16 [5.4]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Call Phase		2		4		6		8								
No Activity																
Max Presence		5		5		5		5								
Erratic Cnt																

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Overlap General Parameters [1.5.1]

Conflict Lock	Lock Inhibit	Program Card	Use Parent	Canadian Fast Flash
OFF	OFF	ON	ALWAYS	

Overlap Program Parameters [1.5.2.1]

Overlap	Included Phases								Modifer Phases								Type	Green	Yellow	Red
Overlap 1																	NORMAL		3.5	1.5
Overlap 2																	NORMAL		3.5	1.5
Overlap 3																	NORMAL		3.5	1.5
Overlap 4																	NORMAL		3.5	1.5
Overlap 5																	NORMAL		3.5	1.5
Overlap 6																	NORMAL		3.5	1.5
Overlap 7																	NORMAL		3.5	1.5
Overlap 8																	NORMAL		3.5	1.5
Overlap 9																	NORMAL		3.5	1.5
Overlap 10																	NORMAL		3.5	1.5
Overlap 11																	NORMAL		3.5	1.5
Overlap 12																	NORMAL		3.5	1.5
Overlap 13																	NORMAL		3.5	1.5
Overlap 14																	NORMAL		3.5	1.5
Overlap 15																	NORMAL		3.5	1.5
Overlap 16																	NORMAL		3.5	1.5

Overlap Conflict Parameters+ [1.5.2.2]

Overlap	Conflicting Phases								Conflicting Overlaps								Conflicting Peds							
Overlap 1																								
Overlap 2																								
Overlap 3																								
Overlap 4																								
Overlap 5																								
Overlap 6																								
Overlap 7																								
Overlap 8																								
Overlap 9																								
Overlap 10																								
Overlap 11																								
Overlap 12																								
Overlap 13																								
Overlap 14																								
Overlap 15																								
Overlap 16																								

Flash Parameters [1.4.1]

Auto Flash Parameter

Yellow	Red	Mode	Source
45	30		

Flash,Phases/Overlaps/Phases [1.4.2]

Auto Flash	1	2	3	4	5	6	7	8	9	10	11	12
Phases	4	8										
Overlaps												

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Unit Parameters [1.2.1]

StartUp Flash	Auto Ped Clear	Red Revert	Local Flash Start	Allow < 3 sec Yel	Allow Skip Yel	MCE Timeout	Enable Run	Start Red Time	Phase Mode	Startup Calls	Diamond Mode	Stop Time Over Preempt	Free Ring Sequence	Clearance Decide	Min Ped Clear Time	RingAlgo
5	OFF	3	OFF	OFF	OFF		ON		STD8	OFF	4PH	OFF	1	OFF	OFF	

Ring Sequence 1 [1.2.4]

Ring	P1	P2	P3	P4	P5	P6	P7	P8
Ring 1	1	2	3	4				
Ring 2	5	6	7	8				
Ring 3								
Ring 4								

Phase Startup, Concur [1.1.4]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Startup	RED	RED	RED	YELLOW	RED	RED	RED	YELLOW	RED	RED	RED	RED	RED	RED	RED	RED
Ring	1	1	1	1	2	2	2	2								
Concur 1	5	5	7	7	1	1	3	3								
Concur 2	6	6	8	8	2	2	4	4								
Concur 3																
Concur 4																
Concur 5																
Concur 6																
Concur 7																
Concur 8																

COMM, General Comm Parameters [6.1]

Station ID	Master Station ID	Fallback time	Allow Pencil	PORT	System-Up	Sys-Down	PC/Print	Aux 232
900								

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Alarms, Enable Events [1.6.1]

Event#	Event Enable
1	ON
2	
3	
4	ON
5	ON
6	ON
7	
8	
9	
10	ON
11	
12	ON
13	
14	
15	ON
16	
17	
18	
19	
20	
21	ON
22	ON
23	ON
24	
25	
26	ON
27	
28	
29	ON
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	ON
50	ON
51	ON
52	ON
53	ON
54	ON
55	ON
56	ON
57	ON
58	ON
59	ON
60	ON
61	ON
62	
63	
64	
65	
66	
67	
68	
69	
70	
71	
72	
73	
74	
75	
76	
77	
78	
79	
80	
81	
82	
83	
84	
85	
86	
87	
88	
89	
90	ON
91	
92	
93	
94	
95	
96	
97	
98	
99	
100	
101	
102	
103	
104	
105	
106	
107	
108	
109	
110	
111	
112	

Alarms, Enable Alarms [1.6.4]

Alarm#	Alarm Enable
1	ON
2	
3	
4	ON
5	ON
6	ON
7	
8	
9	
10	ON
11	
12	ON
13	
14	
15	ON
16	
17	
18	
19	
20	
21	ON
22	ON
23	ON
24	
25	
26	ON
27	
28	
29	ON
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	ON
50	ON
51	ON
52	ON
53	ON
54	ON
55	ON
56	ON
57	ON
58	ON
59	ON
60	ON
61	ON
62	
63	
64	
65	
66	
67	
68	
69	
70	
71	
72	
73	
74	
75	
76	
77	
78	
79	
80	
81	
82	
83	
84	
85	
86	
87	
88	
89	
90	ON
91	
92	
93	
94	
95	
96	
97	
98	
99	
100	
101	
102	
103	
104	
105	
106	
107	
108	
109	
110	
111	
112	

Alarms, Parameters [1.6.7]

Preempt Event Enabled	Pattern Event Enabled
OFF	ON

113	
114	
115	
116	
117	
118	
119	
120	
121	
122	
123	
124	
125	
126	
127	
128	

113	
114	
115	
116	
117	
118	
119	
120	
121	
122	
123	
124	
125	
126	
127	
128	

Station : 900 - US 90A @ University_atc (Standard File)

Preemption Times[3.1]/Phases[3.2]/Options[3.3]

Channel	1	2	3	4	5	6
Lock Input						ON
Override Auto Flash						
Override Higher Preempt						
Flash in Dwell	ON					
Link to Preempt						
Delay						
Min Duration						8
Min Green		5	5	5		5
Min Walk						
Ped Clear				18		16
Track Green		29	29			
Min Dwell						
Max Presence						180
Track Veh 1		1	1			
Track Veh 2		6	6			
Track Veh 3						
Track Veh 4						
Dwell Cyc Veh 1		1	1	1	4	3
Dwell Cyc Veh 2		6	6	6	8	8
Dwell Cyc Veh 3				2	3	
Dwell Cyc Veh 4				5	5	
Dwell Cyc Veh 5				3		
Dwell Cyc Veh 6				7		
Dwell Cyc Veh 7				4		
Dwell Cyc Veh 8				8		
Dwell Cyc Veh 9						
Dwell Cyc Veh 10						
Dwell Cyc Veh 11						
Dwell Cyc Veh 12						
Dwell Cyc Ped1						
Dwell Cyc Ped2						
Dwell Cyc Ped3						
Dwell Cyc Ped4						
Dwell Cyc Ped5						
Dwell Cyc Ped6						
Dwell vPed7						
Dwell Cyc Ped8						
Exit 1		1	1	1	1	
Exit 2		6	6	6	6	
Exit 3						
Exit 4						

Low Priority Preempt [3]

Preempt	7	8	9	10
Min				
Max				
Enable				
Lock Mode	MAX	MAX	MAX	MAX
Coord in Preempt				
No Skip				
Priority P1				
Priority P2				
Priority P3				
Priority P4				
Lock				
Headway				
Group Lock				
Queue Jump				
Free Mode				
Alt Table				

Preemption Times+[3.4]/Overlaps+[3.5]/Options+[3.6]

Preempt	1	2	3	4	5	6
Enable	ON	ON	ON	ON	ON	ON
Type	RAIL	RAIL	RAIL	RAIL	RAIL	EMERG
Skip Track						
Volt Mon Flash						
Coord in Preempt	ON	ON	ON	ON	ON	
Return Max/Min	MAX	MAX	MAX	MAX	MAX	MAX
Extend Dwell						
Pattern						
Output Mode	TS2	TS2	TS2	TS2	TS2	TS2
Track Over 1						
Track Over 2						
Track Over 3						
Track Over 4						
Track Over 5						
Track Over 6						
Track Over 7						
Track Over 8						
Track Over 9						
Track Over 10						
Track Over 11						
Track Over 12						
DwellCyc Over 1						
DwellCyc Over 2						
DwellCyc Over 3						
DwellCyc Over 4						
DwellCyc Over 5						
DwellCyc Over 6						
DwellCyc Over 7						
DwellCyc Over 8						
DwellCyc Over 9						
DwellCyc Over 10						
DwellCyc Over 11						
DwellCyc Over 12						
Ped Clear						
Yellow	5	5	5	5	5	5
Red	2	2	2	2	2	2
Return Max						

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TB Coor, Advanced Scheduler [4.3]

	Month											Day of Week							Day of Month									1									2									3		
Plan	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	Day Plan
1	1	1	1	1	1	1	1	1	1	1	1	1								1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5
3	1	1	1	1	1	1	1	1	1	1	1	1							1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4																																																	1
5																																																	1
6																																																	1
7																																																	1
8																																																	1
9																																																	1
10																																																	1
11																																																	1
12																																																	1
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26																																																	1
27																																																	1
28																																																	1
29																																																	1
30																																																	1
31																																																	1
32																																																	1

TB Coor, Day Plan [4.4]

Day Plan Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		6	21													
Minute																
Action	100	5	100													

Day Plan Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		4	6	9	15	19	21									
Minute		30		30												
Action	100	4	8	8	6	8	7									

Day Plan Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		6	8	20												
Minute																
Action	100	4	5	4												

Day Plan Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		4	6	7	9	15	19	21								
Minute		30		30												
Action	100	4	2	9	8	6	8	7								

Day Plan Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		4	6	9	15	21										
Minute		30		30												
Action	100	4	3	8	9	7										

Day Plan Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Station : 900 - US 90A @ University_atc (Standard File)

Day Plan Table 7	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Hour																
Minute																
Action																

Day Plan Table 8	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Hour																
Minute																
Action																

Day Plan Table 9	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Hour																
Minute																
Action																

Day Plan Table 10	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Hour																
Minute																
Action																

Day Plan Table 11	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Hour																
Minute																
Action																

Day Plan Table 12	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Hour																
Minute																
Action																

Day Plan Table 13	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Hour																
Minute																
Action																

Day Plan Table 14	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Hour																
Minute																
Action																

Day Plan Table 15	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Hour																
Minute																
Action																

Day Plan Link 1-16 [4.3]

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Link																

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TB Coor, Action Table [4.5]

Action	Pattern	Aux 1	Aux 2	Aux 3	Special 1	Special 2	Special 3	Special 4	Special 5	Special 6	Special 7	Special 8
1	1											
2	2	ON										
3	3											
4	4											
5	5											
6	6											
7	7											
8	8											
9	9											
10	10											
11	11											
12	12											
13	13											
14	14											
15	15											
16	16											
17	17											
18	18											
19	19											
20	20											
21	21											
22	22											
23	23											
24	24											
25	25											
26	26											
27	27											
28	28											
29	29											
30	30											
31	31											
32	32											
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43												
44												
45												
46												
47												
48												
49												
50												
51												
52												
53												
54												
55	255											
56												
57												
58												
59												
60												
61												
62												
63												
64												
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67												
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87												
88												
89												
90												
91												
92												
93												
94												
95												
96												
97												
98												
99												
100	254											

Channels/SDLC+, IO Logic [1.8.7]

	1	2	3	4	5	6	7	8	9	10

User Input map [1.8.9.1]

	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8

User Output Map [1.8.9.2]

	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8

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Miscellaneous Data

Alternate Phase Program 1, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 2, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 3, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 1, Phase Options [1.1.6.2]

Column	Non Act1	Lock Call	Soft Recall	Dual Entry	Sim Gap Enb	Guar Pass	RIW	Cond Service	Reservice	Red Rest	Max 2	Ped Delay	Conf Phs1	Conf Phs1	Assign Phase
1	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
2	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
3	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
4	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
5	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
6	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
7	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
8	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		

Alternate Phase Program 2, Phase Options [1.1.6.2]

Column	Non Act1	Lock Call	Soft Recall	Dual Entry	Sim Gap Enb	Guar Pass	RIW	Cond Service	Reservice	Red Rest	Max 2	Ped Delay	Conf Phs1	Conf Phs1	Assign Phase
1	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
2	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
3	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
4	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
5	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
6	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
7	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
8	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		

Alternate Phase Program 3, Phase Options [1.1.6.2]

Column	Non Act1	Lock Call	Soft Recall	Dual Entry	Sim Gap Enb	Guar Pass	RIW	Cond Service	Reservice	Red Rest	Max 2	Ped Delay	Conf Phs1	Conf Phs1	Assign Phase
1	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
2	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
3	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
4	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
5	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
6	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
7	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
8	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		

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Alternate Phase Program 1, Calls and Redirection [1.1.6.3]

ENTRY	Call Phases				From	to	From	to	From	to	From	to	Assigned Ph
1													
2													
3													
4													
5													
6													
7													
8													

Alternate Phase Program 2, Calls and Redirection [1.1.6.3]

ENTRY	Call Phases				From	to	From	to	From	to	From	to	Assigned Phs
1													
2													
3													
4													
5													
6													
7													
8													

Detector Alternate Program 1, Vehicle Parameters [5.5.1]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Extend																
Queue																
Call Phase																
Switch Phase																
Delay Time																
No Activity																
Max Presence																
Erratic Cnt																
Fail Time	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

Detector Alternate Program 1, Vehicle Options [5.5.2]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Volume																
Occupancy																
Yellow Lock																
Red Lock																
Added Initial																
Call																
Extend Time																
Queue Limit																

Detector Alternate Program 1, Ped Parameters [5.5.4]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Call Phase																
No Activity																
Max Presence																
Erratic Cnt																

Channel/SDLC +, Assign to Phases [1.8.4]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	10	21	22	23	24
PH/OLP #	1	2	3	4	5	6	7	8					2	4	6	8								
Flash Red																								
Flash Yellow																								
Flash Green																								
Inh Red Flash in Preempt																								
Color Flash Rate																								
Override Type																								
Olap Ovrd																								

Station : 900 - US 90A @ University_atc (Standard File)

Communication, IP Parameters [6.5]

	Octet 1	Octet 2	Octet 3	Octet 4
IP Address 1	10			
IP Address 2	3			
IP Address 3	3			
IP Address 4	231			
IP Mask 1	255			
IP Mask 2	255			
IP Mask 3	255			
IP Mask 4	192			
IP Broadcast 1				
IP Broadcast 2				
IP Broadcast 3				
IP Broadcast 4				
IP Gateway 1	10			
IP Gateway 2	3			
IP Gateway 3	3			
IP Gateway 4	193			
IP Port	5085			