

# Traffic Impact Study

## Sunset Amphitheater at Mustang Creek

December 2023

*FOR SUBMITTAL TO:*

City of Oklahoma City, Oklahoma

*PREPARED FOR:*

Notes Live

**PREPARED BY:**

4727 Gaillardia Parkway, Suite 250  
Oklahoma City, OK 73142  
405-241-5423

**Kimley»Horn**





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Oklahoma Firm Registration Number 2740

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## 1.0 Executive Summary

### 1.1 PROJECT SUMMARY

This traffic study evaluated the anticipated traffic impacts associated with the *Sunset Amphitheater at Mustang Creek* development, which is expected to be completed in 2025 (referred to herein as build-out year). As currently envisioned, the development will consist of an approximate 12,500-seat amphitheater. The approximate 51-acre site is located east of the John Kilpatrick Turnpike and west of S Sara Road at SW 15<sup>th</sup> Street in the City of Oklahoma City, Oklahoma.

The following scenarios were considered in this analysis:

- Existing 2023 Conditions
- Projected 2025 No-Build Conditions
- Projected 2025 Build Conditions

The study network for this analysis includes the following intersections:

1. Reno Avenue at S Sara Road
2. Reno Avenue at S Morgan Road
3. Interstate 40 at S Morgan Road
4. SW 15<sup>th</sup> Street at S Morgan Road
5. SW 15<sup>th</sup> Street at S Sara Road
6. Southernmost Amphitheater Driveway to S Sara Road (Driveway B)
7. Middle Amphitheater Driveway to S Sara Road (Driveway C)
8. Northernmost Amphitheater Driveway to S Sara Road (Driveway D)
9. South Driveway to SW 15<sup>th</sup> Street (Driveway A)
10. SW 15<sup>th</sup> Street at John Kilpatrick Turnpike
11. S Mustang Road at SW 11<sup>th</sup> Street



**Figure 1: Traffic Count Locations**

**Figure 1** shows the locations that traffic counts were taken.

The proposed development will be served by five driveways – three (3) three-legged, unsignalized driveways along S Sara Road (Driveway B-D), one (1) three-legged, unsignalized driveway along SW 15<sup>th</sup> Street (Driveway A), and one private connecting to Courty Boulevard to the interior (Driveway E).

## 1.2 EVALUATION

Traffic conditions for the amphitheater site were analyzed to better understand how traffic generated by an event will impact the surrounding roadway network. Modeling the roadway capacity, identifying strategies on vehicle entry and exit to and from the site, and forecasting travel patterns of parking and rideshare vehicles were key factors to forecast the traffic impact of this amphitheater development for the build out year.

## 1.3 RECOMMENDATIONS

Per the findings of this study, recommendations for on-site and off-site traffic operations for events include:

### Event Management Recommendations:

- Parking Information Guide and Access Signage
- On-Site Traffic Control
- Event Day Police Control at Driveways
- Event Day Police-Controlled Intersections
- Multi-Directional Lanes

### Infrastructure Improvement Recommendations:

- Revised Signal Timing Plans
- Upgraded Lane Configurations – John Kilpatrick Turnpike (Northbound On-Ramp)

## 2.0 INTRODUCTION

This Traffic Impact Study evaluated the anticipated traffic associated with the *Sunset Amphitheater at Mustang Creek* development, which is expected to be completed in 2025 (referred to herein as build-out year). As currently envisioned, the development will consist of an approximate 12,500-seat amphitheater. The approximate 51-acre site is located east of the John Kilpatrick Turnpike and west of S Sara Road at SW 15<sup>th</sup> Street in the City of Oklahoma City, Oklahoma.

The following scenarios were considered in this analysis:

- Existing 2023 – No-Build Conditions
- Forecasted 2025 - No-Build Conditions
- Forecasted 2025 - Build Conditions

The study network for this analysis includes the following intersections:

1. Reno Avenue at S Sara Road
2. Reno Avenue at S Morgan Road
3. Interstate 40 at S Morgan Road
4. SW 15<sup>th</sup> Street at S Morgan Road
5. SW 15<sup>th</sup> Street at S Sara Road
6. Southernmost Amphitheater Driveway to S Sara Road (Driveway B)
7. Middle Amphitheater Driveway to S Sara Road (Driveway C)
8. Northernmost Amphitheater Driveway to S Sara Road (Driveway D)
9. South Driveway to SW 15<sup>th</sup> Street (Driveway A)
10. SW 15<sup>th</sup> Street at John Kilpatrick Turnpike
11. S Mustang Road at SW 11<sup>th</sup> Street

The proposed development will be served by access points – three (3) three-legged, unsignalized driveways along S Sara Road (Driveway B-D), one (1) three-legged, unsignalized driveway along SW 15<sup>th</sup> Street (Driveway C), and one private connection to Courty Boulevard to the west (Driveway E). **Figure 2** provides a location map of the project site. **Figure 3** provide an aerial image of the project site. A site plan is also included in **Appendix A**.

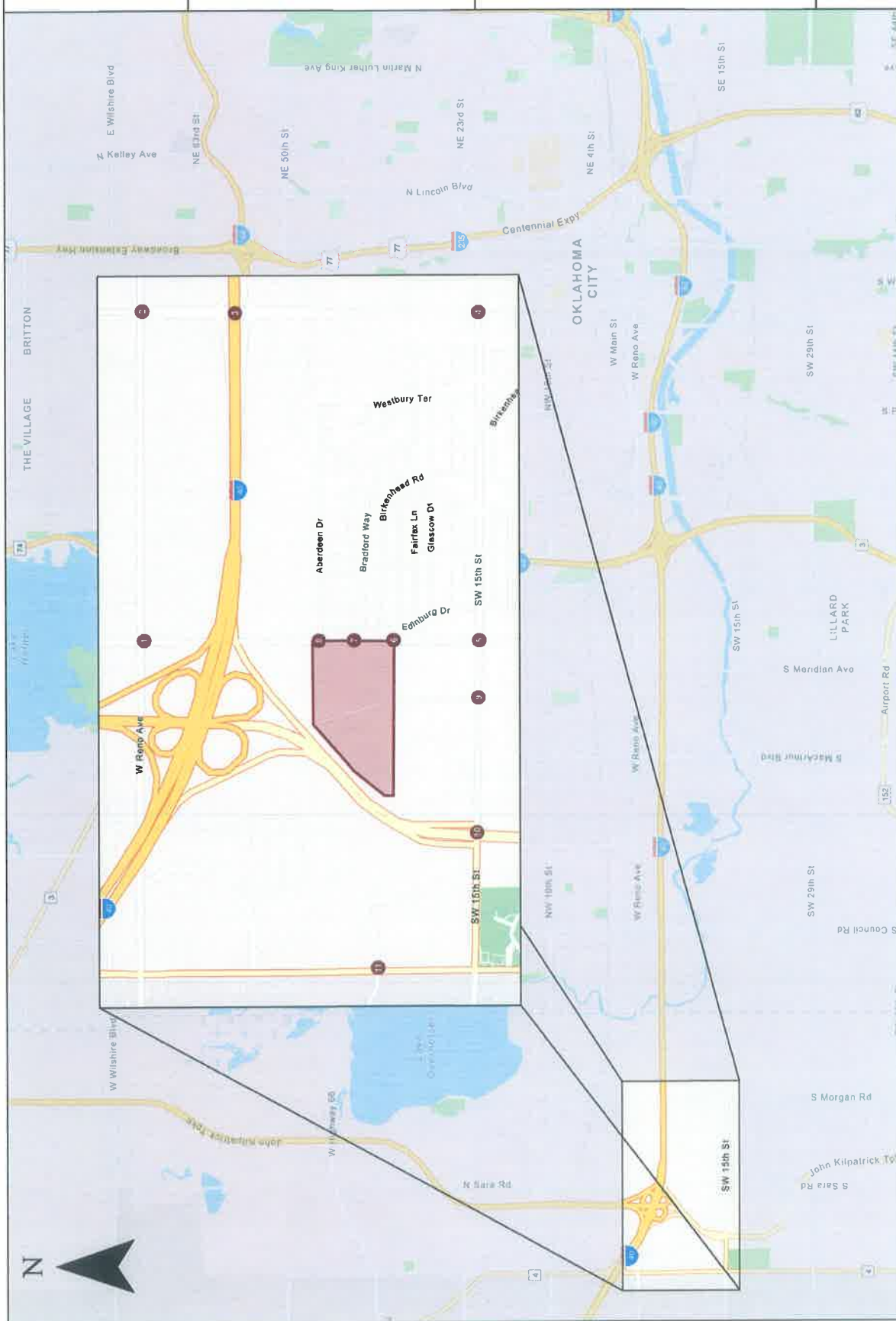




Figure 3

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Sunset Amphitheater at Mustang Creek  
Traffic Impact Study

Site Aerial



## 3.0 EXISTING CONDITIONS

### 3.1 VEHICULAR NETWORKS

Characteristics for the roadways within the study are summarized in **Table 1** below.

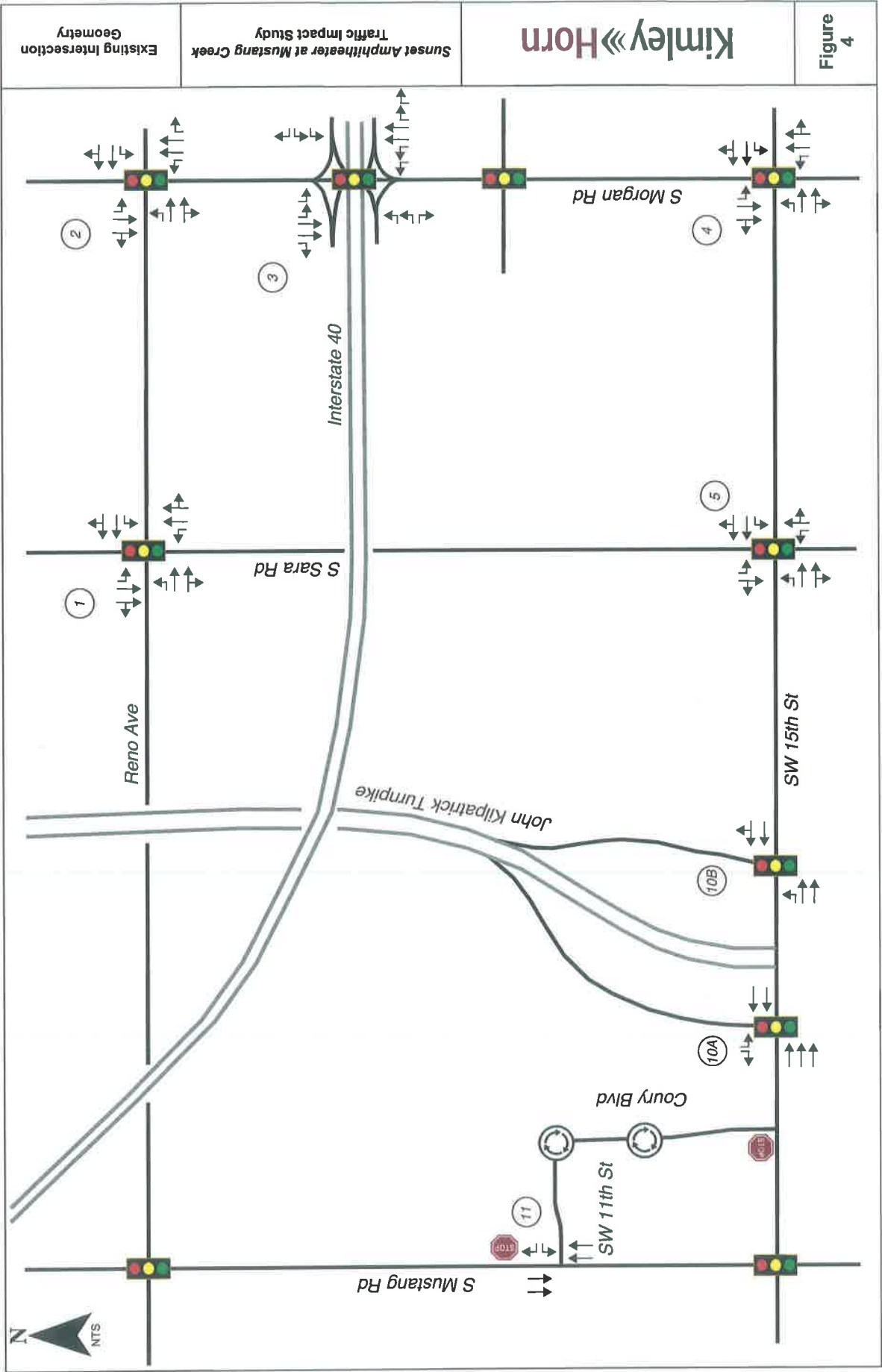
Roadway	Number of Lanes	Posted Speed Limit (MPH)	Road Classification	AADT
SW 15th Street	4	45	Local Road	9,000
S Sara Avenue	2	40	Urban Collector	5,600
S Mustang Road	4	45	Highway Principal Arterial	19,400
S Morgan Road	4 + TWLTL	40	Urban Minor Arterial	13,500
Reno Avenue	4	45	Principal Arterial	9,400

The existing intersection geometry is illustrated in **Figure 4**. SW 15<sup>th</sup> Street is currently under design and is anticipated to be widened. Construction is anticipated the summer of 2024.

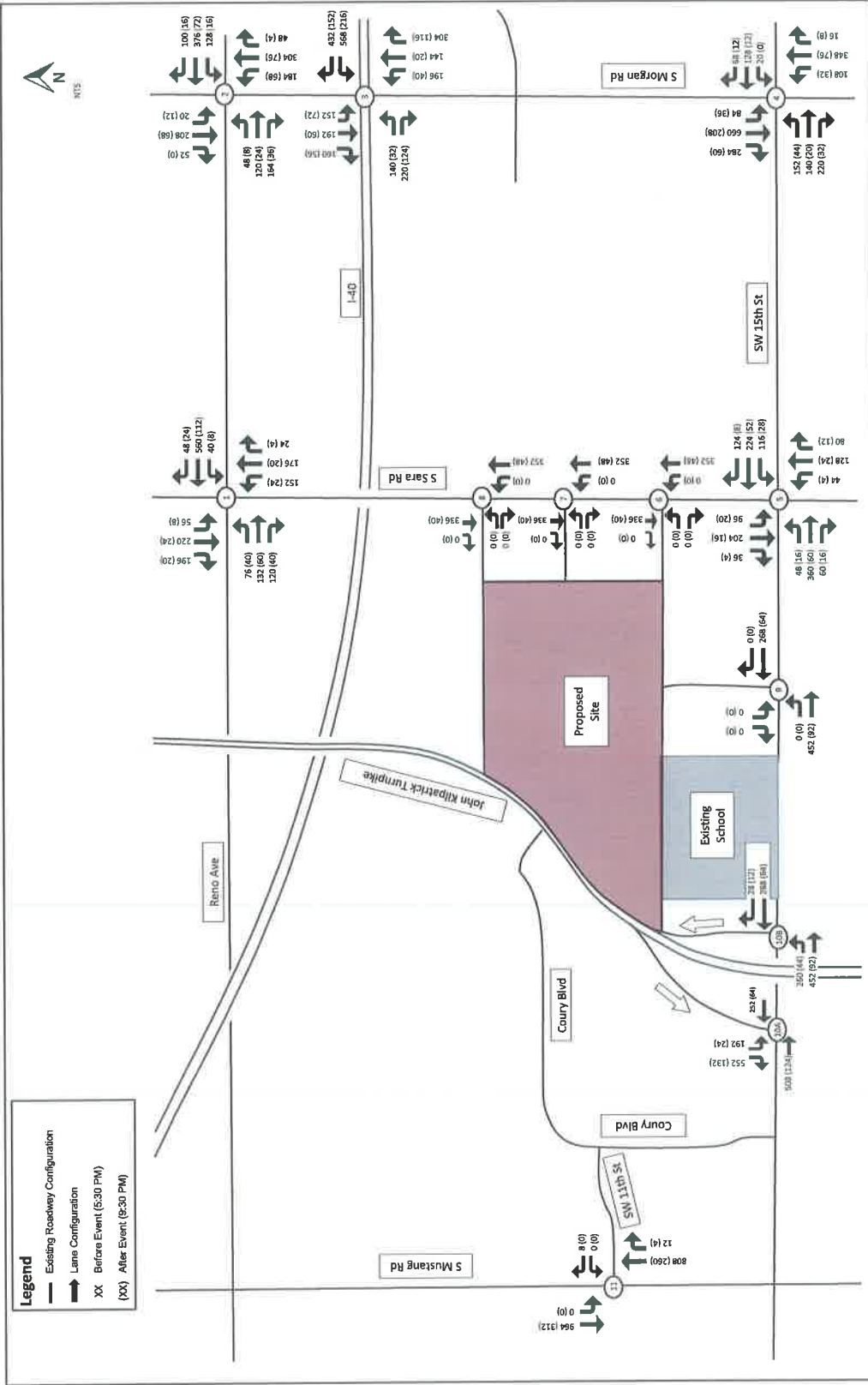
### 3.2 VEHICULAR VOLUMES

Vehicle peak hour turning movement counts (TMCs) were collected by CJ Hensch & Associates on Thursday, November 2, 2023, for eight (8) of the study intersections listed below. These intersections were observed on evening weekdays to determine the volume counts for the ingress and egress times for the amphitheater. The amphitheater is anticipated to have the peak ingress from 5:30-6:30 PM and peak egress from 9:30-10:30 PM, these times were used to compare against existing traffic to better understand the impact of event traffic on the surrounding intersections. The evaluated ingress/egress times and peak hours for the study intersections are shown in **Table 2**. The existing 2023 traffic volumes are shown in **Figure 5**. The complete traffic count data is provided in **Appendix B**.

Intersection	Count Type	PM Peak	Ingress Hours	Egress Hours
1. Reno Avenue at Sara Road	Miovision TMC	4:45 - 5:45 PM	5:30 - 6:30 PM	9:30 - 10:30 PM
2. Reno Avenue at Morgan Road	Miovision TMC	3:30 - 4:30 PM	5:30 - 6:30 PM	9:30 - 10:30 PM
3. Morgan Street at I-40	Miovision TMC	4:45 - 5:45 PM	5:30 - 6:30 PM	9:30 - 10:30 PM
4. 15th Street at Morgan Street	Miovision TMC	5:00 - 6:00 PM	5:30 - 6:30 PM	9:30 - 10:30 PM
5. 15th Street at Sara Road	Miovision TMC	4:45 - 5:45 PM	5:30 - 6:30 PM	9:30 - 10:30 PM
6. Driveway B	Projected Traffic Volumes	-	5:30 - 6:30 PM	9:30 - 10:30 PM
7. Driveway C	Projected Traffic Volumes	-	5:30 - 6:30 PM	9:30 - 10:30 PM
8. Driveway D	Projected Traffic Volumes	-	5:30 - 6:30 PM	9:30 - 10:30 PM
9. Driveway A	Projected Traffic Volumes	-	5:30 - 6:30 PM	9:30 - 10:30 PM
10A. 15th Street at JKT SBFR	Miovision TMC	4:45 - 5:45 PM	5:30 - 6:30 PM	9:30 - 10:30 PM
10B. 15th Street at JKT NBFR	Miovision TMC	4:45 - 5:45 PM	5:30 - 6:30 PM	9:30 - 10:30 PM
11. Mustang Road at SW 11th Street	Miovision TMC	4:45 - 5:45 PM	5:30 - 6:30 PM	9:30 - 10:30 PM







**Figure 5**

**2023 Existing Traffic Volumes**  
Collected 11/9/2023

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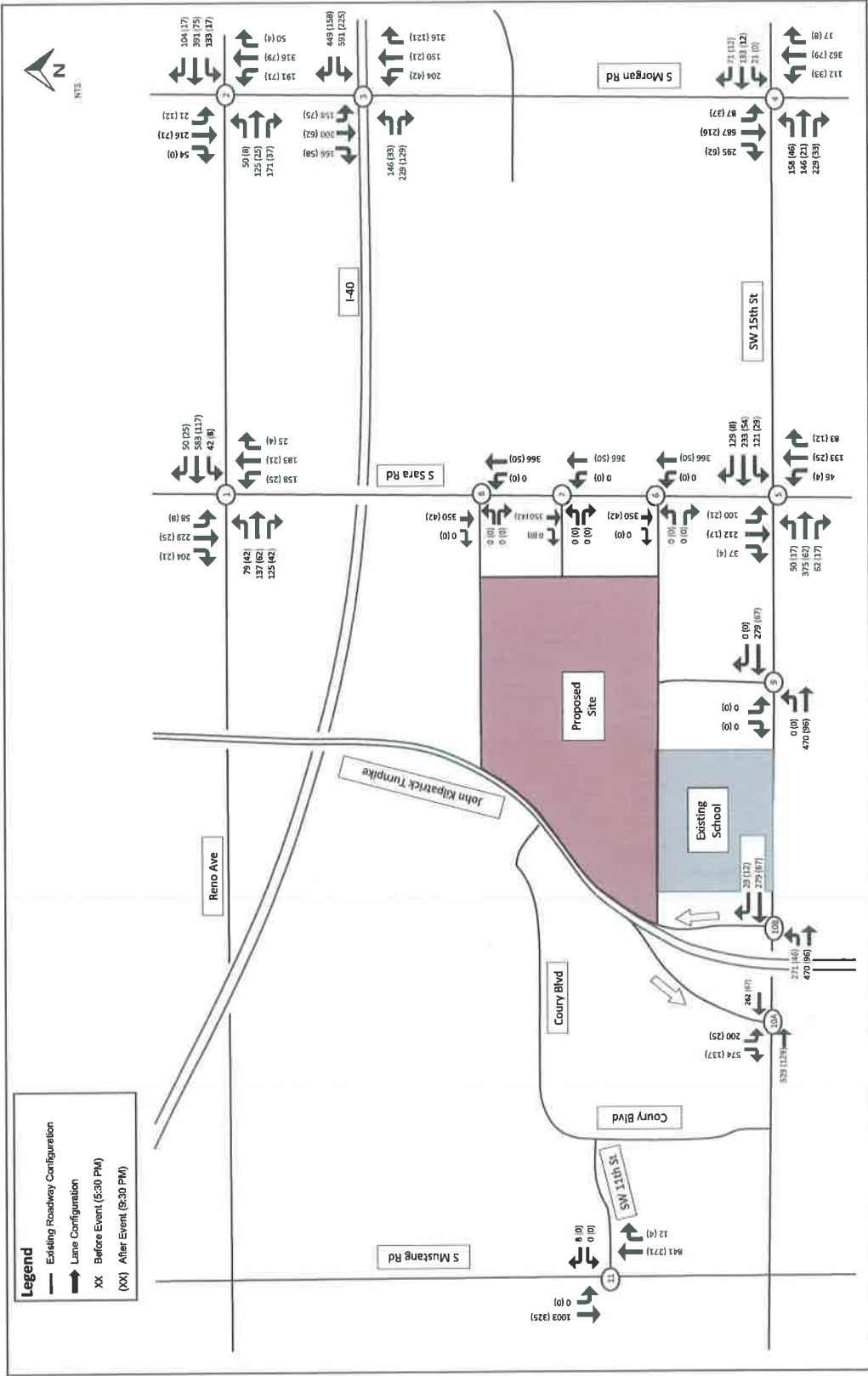
## 4.0 NO-BUILD CONDITIONS

Background traffic is defined as expected traffic on the roadway in future year(s) absent the construction, opening, and operation of the proposed project. Background traffic can include a base growth rate based on historical count data, as well as population growth data and estimates.

Upgraded roadways in the surrounding area will also factor to the roadway capacity. A segment near the site on SW 15<sup>th</sup> Street is will be widened to four lanes, with construction anticipated starting Summer 2024. This roadway improvement could provide increased traffic capacity between S Sara Road and S Mustang Road. The average annual daily traffic (AADT) for the surrounding roadway network is seen in **Table 3**. Even in no-build conditions, annual traffic has been historically growing at approximately 2.0%. To account for this background traffic, the Existing 2023 traffic volumes and existing 2023 AADT were increased by 2.0% per year for two years to account for the expected background growth through the year 2025.

Table 3: Average Annual Daily Traffic		
Roadway	Road Classification	Existing AADT
SW 15th Street	Local Road	9,000
S Sara Avenue	Urban Collector	5,600
S Mustang Road	Highway Principal Arterial	19,400
S Morgan Road	Urban Minor Arterial	13,500
Reno Avenue	Principal Arterial	9,400

**Figure 5** illustrate the Projected 2025 No-Build traffic volumes which includes the existing roadway network, with the 2023 base year traffic grown to the future 2025 year.



**Figure 6**

**2025 No-Build Traffic Volumes**

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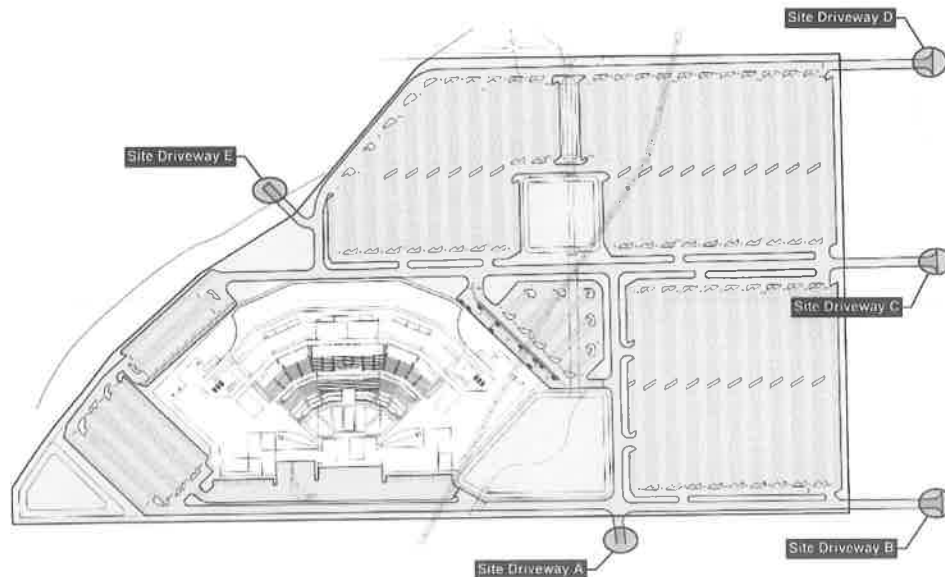
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## 5.0 BUILD CONDITIONS

### 5.1 SITE ACCESS AND CIRCULATION

Access to the proposed site will be provided through five access points. A brief description of the site access is as follows:

- Site Driveway A (to the south)
  - Proposed full access three-legged, unsignalized driveway along SW 15<sup>th</sup> Street, directly south of the amphitheater site. This driveway provides access to the interior of the site.
- Site Driveway B, C, and D (to the east)
  - Three (3) proposed full access three-legged, unsignalized driveways along S Sara Road, along the east boundary of the site. These three (3) driveways create the southern, middle, and northern most internal circulatory roadways entering on the east side of the site.
- Site Driveway E (to the west)
  - Proposed private driveway connecting Coury Boulevard to the interior circulating roadways via an existing underpass below John Kilpatrick Turnpike. Coury Boulevard then connects to SW 15<sup>th</sup> Street and N Mustang Road west of the existing John Kilpatrick Turnpike. This connection is located on the northwest corner of the site, directly north of the proposed amphitheater, and is anticipated to be used mainly for the VIP parking and egress.



**Figure 7: Site Driveway Location**

Refer to the site plan in **Appendix A** for a visual representation of vehicular access and circulation throughout the proposed development. **Figure 8** depicts the proposed site access driveways and anticipated roadway geometry.

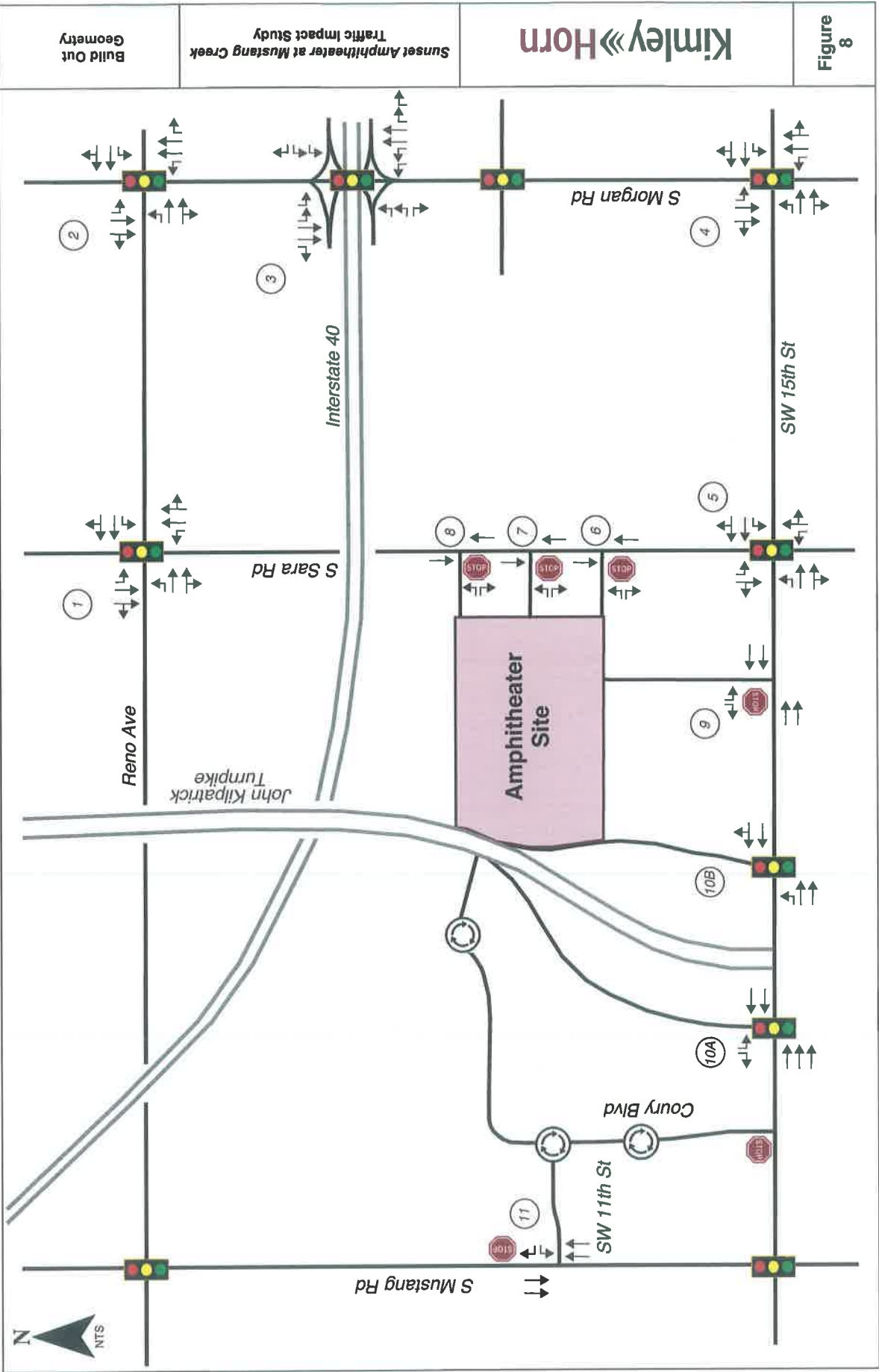


Figure 8

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Sunset Amphitheater at Mustang Creek  
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Build Out  
Geometry

## 5.2 TRIP GENERATION

Traffic for the proposed development was calculated using site specific data and projections using engineering judgement. The following items were considered in the methodology for the trip generation calculations:

- Vehicle traffic divided into:
  - Parked vehicles (event attendees parking on site for the entire duration of the event – parked vehicles enter during the ingress period and exit during the egress period only)
  - Rideshare vehicle (vehicles drop off attendees and circulate to exit the site – rideshare vehicles will enter and exit during the same timeframe for both ingress and egress).
- Trip generation was projected for the following event scenarios:
  - Small Event
  - Medium Event
  - Max Event (Full capacity for the amphitheater)

**Table 4** summarizes the event ingress/egress distribution. **Table 5** summarizes the projected trip generation for each event scenario.

Time	Event Status	Parked		Rideshare	
		Ingress	Egress	Ingress	Egress
5:00 PM	-	25%	-	25%	25%
6:00 PM	Doors Open	60%	-	60%	60%
7:00 PM	Event Start	15%	-	15%	15%
8:00 PM	Event	-	-	-	-
9:00 PM	Event	-	15%	15%	15%
10:00 PM	Event End	-	75%	75%	75%
11:00 PM	-	-	10%	10%	10%

Time	Small Event		Medium Event		Max Event	
	Enter	Exit	Enter	Exit	Enter	Exit
5:00 PM	400	120	800	240	1250	375
6:00 PM	960	288	1920	576	3000	900
7:00 PM	243	72	486	144	759	225
8:00 PM	0	0	0	0	0	0
9:00 PM	72	240	144	480	225	750
10:00 PM	360	1200	720	2400	1125	3750
11:00 PM	48	160	96	320	150	500

The values in the table above represent anticipated trips per hour for each scenario. The max event scenario for the amphitheater site was analyzed in this study within the study area. The max event scenario is anticipated to be the least frequent event scenario to occur and is considered the worst-case traffic scenario associated with this development.

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The [City of Oklahoma City Code of Ordinance](#) provides minimum parking ratios for different business and land uses. After considering the description of the three (3) types of spectator sports and entertainment land venues, the amphitheater aligns with the description provided in the Code or Ordinance with "Spectator Sports and Entertainment: High Impact". However, since this land use type requires director approval for parking, a comparable category would be "Participant Recreation and Entertainment Indoor (Theaters)". The parking required by the Zoning Ordinance is provided in **Table 6** below.

<b>Table 6: Oklahoma City Parking Requirements</b>			
<b>Land Use</b>	<b>Density</b>	<b>Parking Ratio</b>	<b>Required Parking</b>
Indoor Amusement (Amphitheater)	12,500 seats	1 space / 4 seats	3,125 spaces
<b>Total Required Parking</b>			<b>3,125 spaces</b>

The visitor base parking ratio were assuming 2.5 visitors per vehicle. The adjustment is based on rideshare data provided by AEG Presents showing approximately 35-45 percent of venue customers with similar demographics tend to use rideshare transportation to/from performance venues. Due to Oklahoma City's single occupancy vehicle personal driving preferences being higher than the national average, a more conservative rideshare rate of 30% was assumed. This adjusted model was applied to three scenarios: max event (sold out), medium event, and small event. The proposed parking supply on-site is approximately 3,600 parking spaces. **Table 7** below shows the site parking demand projections for the maximum, medium, and small events at the amphitheater.

<b>Table 7: Site Parking Demand Projections</b>							
<b>Scenario</b>	<b>Facility</b>	<b>Density</b>	<b>User</b>	<b>Base Ratio</b>	<b>Rideshare/ Dropoff/</b>	<b>Internal Capture</b>	<b>Parking Demand</b>
Max Event	Amphitheater	12,500 seats	Visitor	0.4	30%	0%	3500
	<b>Total Spaces</b>						<b>3,500</b>
Medium Event	Amphitheater	8,000 seats	Visitor	0.4	30%	0%	2240
	<b>Total Spaces</b>						<b>2,240</b>
Small Event	Amphitheater	4,000 seats	Visitor	0.4	30%	0%	1120
	<b>Total Spaces</b>						<b>1120</b>

The projected parking demand for a max event (sold out) is forecasted to be accommodated within the 3,600 spaces on-site. Off-site employee parking (through shared parking agreements) and walk or shuttle to site is a consideration.



**Table 8** below shows the service rate and curb capacity projections for a maximum, medium, and small event which determines the number of stalls and amount of linear feet needed for the rideshare zone(s). In general, rideshare drivers tend to dwell longer during pickup than drop-off because the rider(s) may not be ready to travel yet. The Uber and Lyft apps urge customers to come out to meet their driver immediately, and wait charges begin after 2-3 minutes of wait time. However, because of this inevitable wait time, we project an estimated 50 stalls needed to provide service to rideshare riders post-show during high event attendance conditions. The proposed rideshare zone for the site is located northeast of the proposed amphitheater. Rideshare drivers are proposed be directed to enter the site from the west via Coury Boulevard via SW 15th Street/S Mustang Road to circulate around the amphitheater and exit to the south. A site plan is provided in the attachments that includes mark-ups for access, parking, and rideshare indicating the location and recommendation for the rideshare zone(s).

<b>Table 8: Rideshare Service and Curb Capacity Projections</b>						
<b>PRE-SHOW</b>						
<b>Event Scenario</b>	<b>Visitors</b>	<b>Visitors/ Rideshare Vehicle</b>	<b>Rideshare Trips<sup>1</sup></b>	<b>Service Rate/Stall/Hour<sup>2</sup></b>	<b>Required Stalls</b>	<b>Linear Feet<sup>3</sup></b>
Max	12,500	2.5	1500	60	25	550
Medium	8,000	2.5	960	60	16	352
Small	4,000	2.5	480	60	6	132
<b>POST-SHOW</b>						
<b>Event Scenario</b>	<b>Visitors</b>	<b>Visitors/ Rideshare Vehicle</b>	<b>Rideshare Trips</b>	<b>Service Rate/Stall/Hour<sup>4</sup></b>	<b>Required Stalls</b>	<b>Linear Feet</b>
Max	12,500	2.5	1500	30	50	1100
Medium	8,000	2.5	960	30	32	704
Small	4,000	2.5	480	30	16	352

<sup>1</sup> Estimated trips based on assumption of 30 percent rideshare as shown in Table 5

<sup>2</sup> Assumed each stall can accommodate 1 drop-off per 1 minute

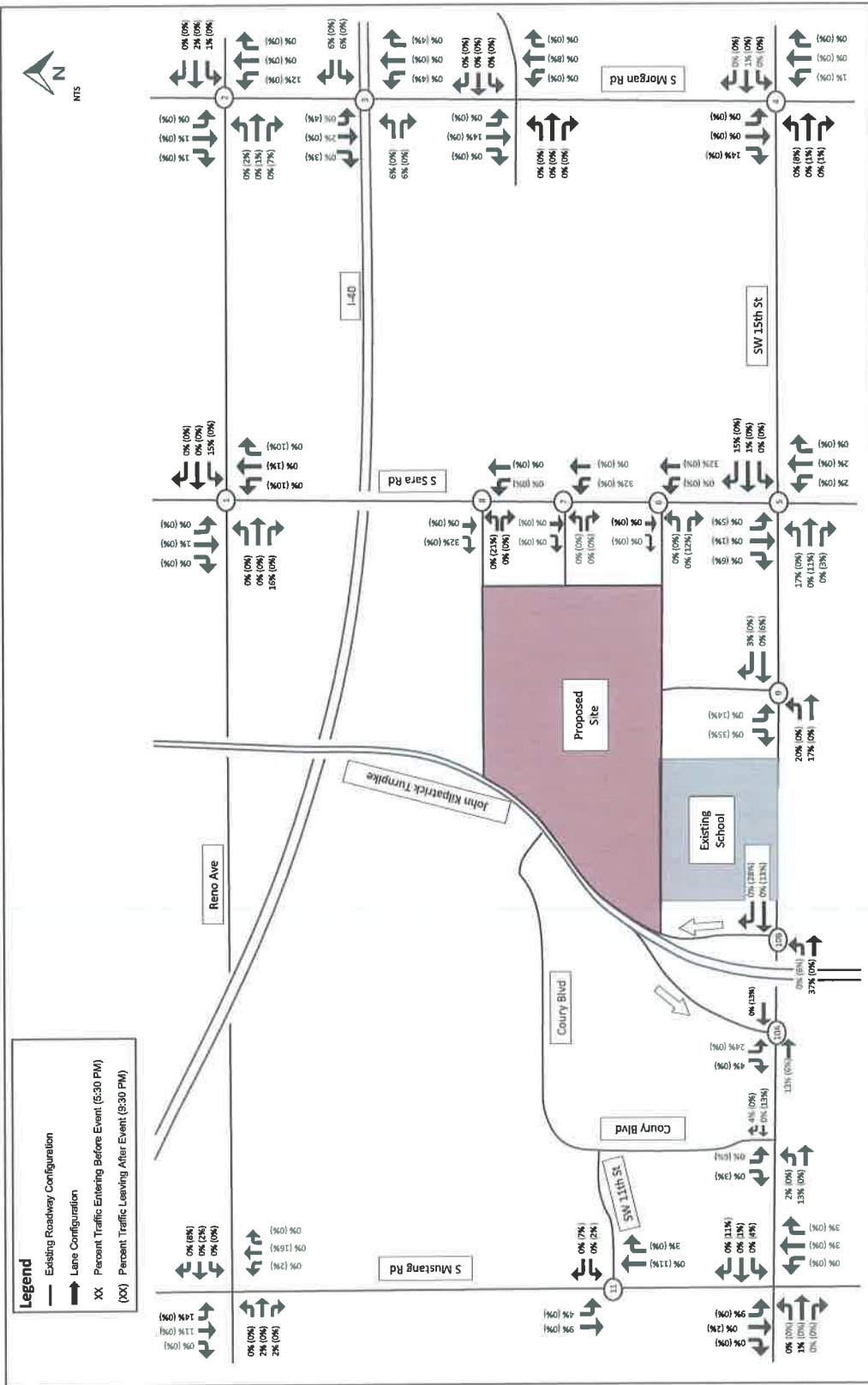
<sup>3</sup> Each stall measures 22 feet in length

<sup>4</sup> Assumed each stall can accommodate 1 pickup per 2 minutes

<sup>5</sup> Assumed show ending time of 10:00pm; some customers will leave up to 30 minutes early

## 5.3 TRIP DISTRIBUTION AND ASSIGNMENT

The directional distribution and assignment of new project trips was based on a review of land uses, population densities in the area, existing turning movement counts, and access to widely used routes, such as interstate and turnpikes. **Figures 9** provides the directional distribution and assignment of new project trips. **Figure 10** illustrates the assignment of projected trips from an event to the study network. The Projected 2025 Build peak hour volumes are shown in **Figure 11**, estimating the number of vehicles generated by the site.



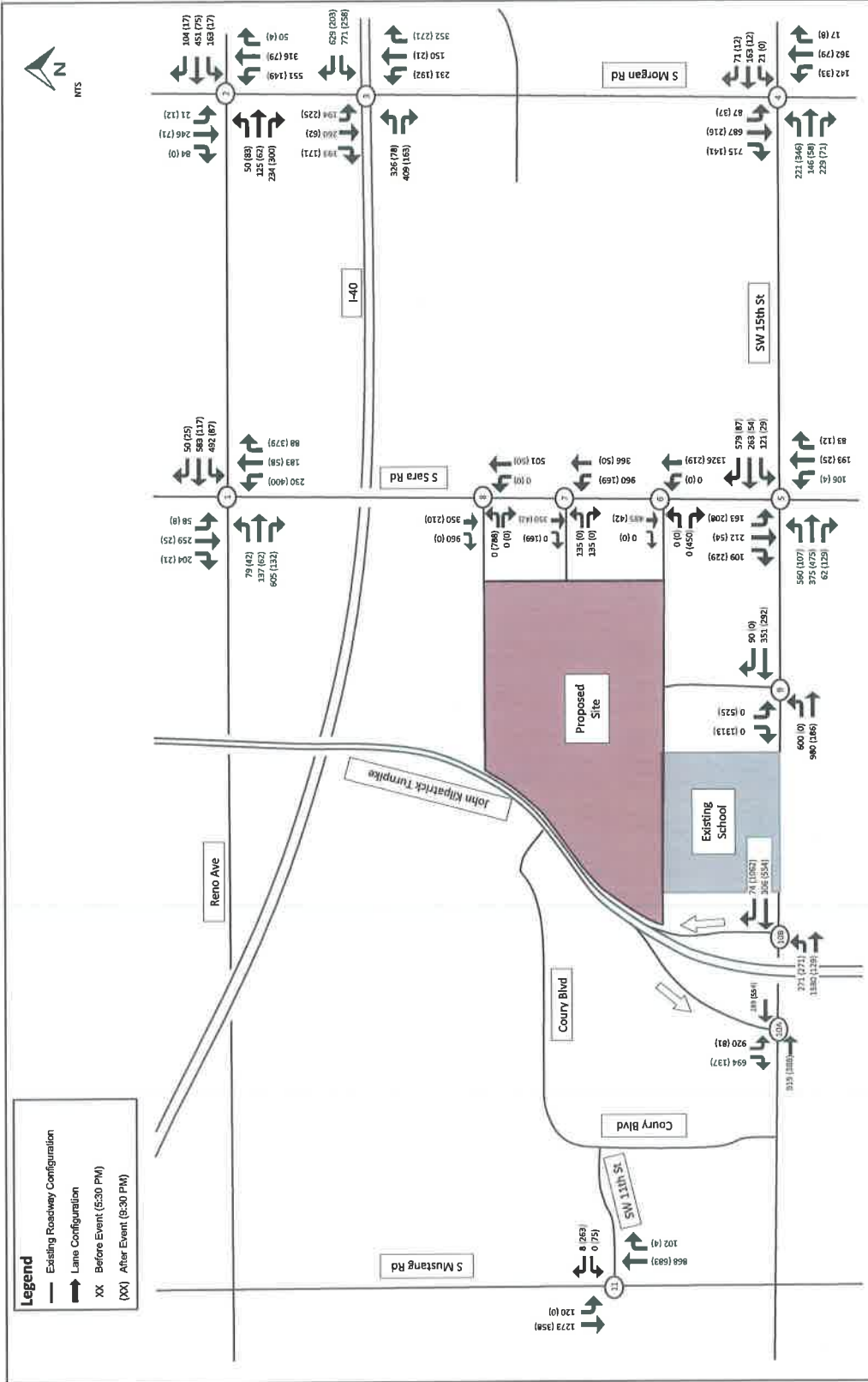
**Figure 9**

**Traffic Distribution Entering and Exiting an Event**

**Sunset Amphitheater at Mustang Creek Traffic Impact Study**

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**Figure 11**

**2025 Forecasted Background + Site Traffic Volumes**

**Sunset Amphitheater at Mustang Creek Traffic Impact Study**

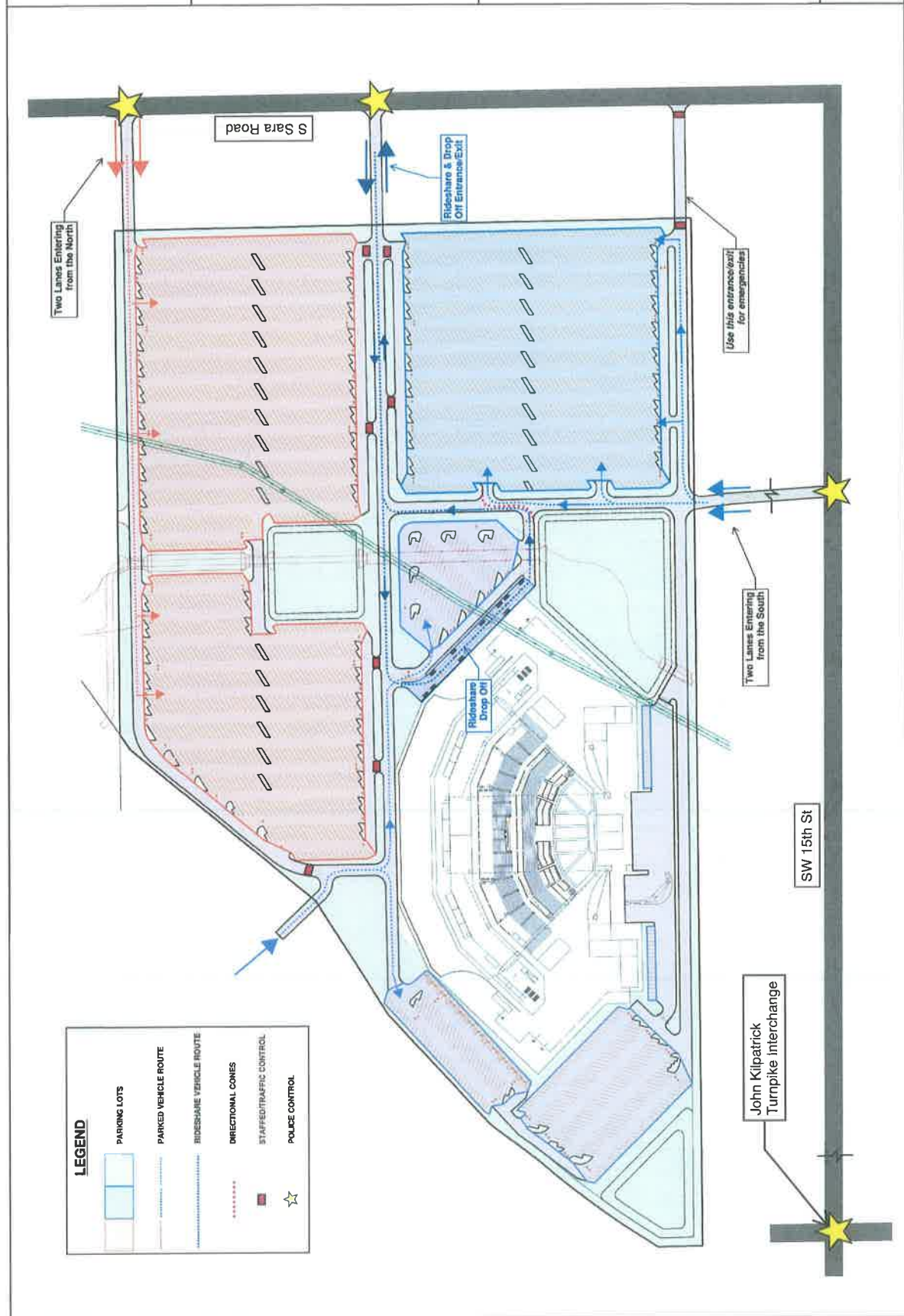
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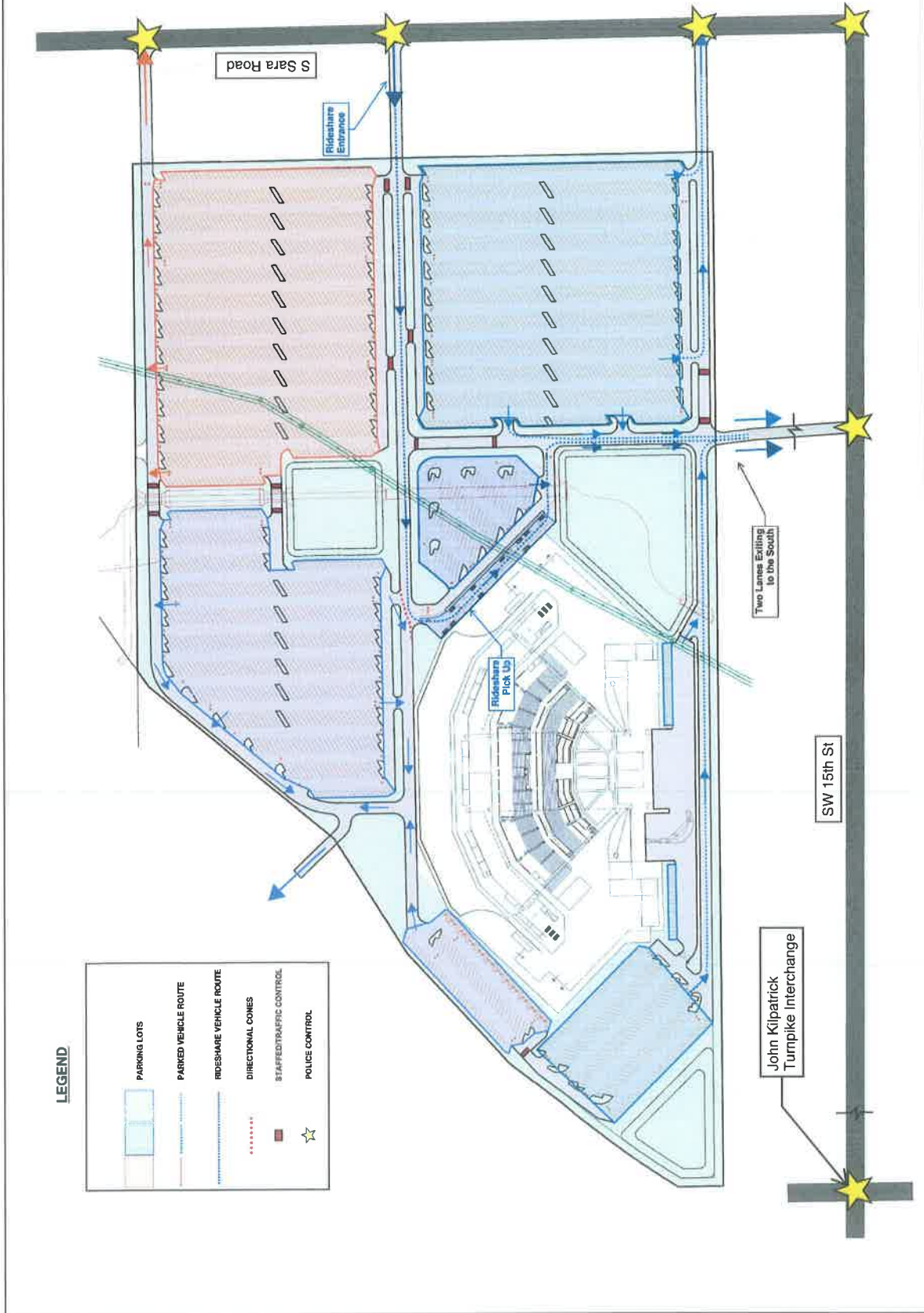
## 5.4 PARKING ACCESS PLAN

An important component of the proposed development is controlling how vehicles enter and exit the amphitheater site during events to maximize traffic flow. A Traffic Management Plan reflects which parking lots are accessed by certain driveways as well as which exits certain parking lots will utilize after the event is finished. Traffic events vary, the figures below reflect an event utilizing the maximum number of anticipated vehicles. The figures below also depict appropriate locations where police control of driveways entering streets would be located during the peak ingress and egress times around events. Police control of driveways allows drivers to be directed in the appropriate direction so that congestion is reduced for all drivers attempting to the enter and exit the site. **Figure 12** depicts the on-site parking control for the ingress of both parking and rideshare vehicles. **Figure 13** depicts the on-site control for both parked and rideshare vehicles to exit the site, to reduce the amount of congestion that is generated.

Figure 12









## 6.0 CAPACITY ANALYSES

Level-of-service (LOS) determinations were made for the two PM hours previously described for the study network intersections using *Synchro™, Version 11*, utilizing the methodologies contained in the *Highway Capacity Manual, 6th Edition* to determine the operating characteristic of an intersections. Capacity is defined as the maximum number of vehicles that can pass over a particular road segment or through a particular intersection within a specified period under prevailing roadway, traffic, and control conditions.

LOS is used to describe the operating characteristics of a road segment or intersection in relation to its capacity. LOS is defined as a qualitative measure that describes operational conditions and motorists' perceptions of a traffic stream. The *Highway Capacity Manual* defines six level of service, LOS A through LOS F, with A being the best and F the worst. A description of each of each operational state for both signalized and unsignalized intersections is presented in **Table 9**.

Levels-of-service for signalized and all-way stop controlled (AWSC) intersections are reported for the intersection as a whole. One or more movement sat an intersection may experience a low level-of-service, while the intersection as a whole may operate acceptably.

LOS	Average Control Delay (sec/veh)		Description
	Signalized	Unsignalized	
A	≤ 10	≤ 10	No delays at intersections with continuous flow traffic. Uncongested operations; high frequency of long gaps available for all left and right turning traffic; no observational queues.
B	> 10 and ≥ 20	> 10 and ≥ 15	
C	> 20 and ≥ 35	> 15 and ≥ 25	Moderate delays at intersections with satisfactory to good traffic flow. Light congestion; infrequent backups on critical approaches.
D	> 35 and ≥ 55	> 25 and ≥ 35	Increased probability of delays along every approach. Significant congestion on critical approaches, but intersection functional. No long-standing lines formed.
E	> 55 and ≥ 80	> 35 and ≥ 50	Heavy traffic flow condition. Heavy delays probable. No available gaps for cross-street traffic or main street turning traffic. Limit of stable flow.
F	>80	>50	Unstable traffic flow. Heavy congestion. Traffic moves in forced flow condition. Average delays greater than one minute highly probable. Total breakdown.

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Capacity analyses were performed for the two main ingress and egress hours for three scenarios (Existing 2023, Projected 2025 No-Build, and Projected 2025 Build traffic conditions). The results of the capacity analyses are summarized in **Table 10**. The *Synchro* analyses reports are included in **Appendix C**.

Table 10: Level of Service Summary LOS (Delay in Seconds)							
Intersection	Approach/ Movement	Existing 2023		Projected 2025 No-Build		Projected 2025 Build	
		PM Ingress Peak	PM Egress Peak	PM Ingress Peak	PM Egress Peak	PM Ingress Peak	PM Egress Peak
1. Reno Avenue at S Sara Road	Overall	C (28)	B (11)	C (29)	B (12)	E (69)	B (17)
2. Reno Avenue at S Morgan Road	Overall	C (26)	B (14)	C (27)	B (14)	D (49)	C (22)
3. I-40 at S Morgan Road	Overall	B (17)	B (11)	B (18)	B (11)	B (18)	B (16)
4. SW 15th Street at S Morgan Road	Overall	C (34)	C (23)	C (35)	C (23)	E (65)	D (38)
5. SW 15th Street at S Sara Road	Overall	C (25)	B (16)	C (25)	B (16)	E (69)	C (22)
10A. SW 15th Street at JKT SB Off Ramp	Overall	A (10)	A (5)	A (10)	A (5)	D (36)	A (7)
10B. SW 15th Street at JKT NB On Ramp	Overall	A (3)	A (1)	A (3)	A (1)	A (2)	B (13)
11. S Mustang Road at SW 11th Street	Overall	A (2)	A (1)	A (3)	A (1)	B (13)	C (19)

## 7.0 CONCLUSION

On-site traffic control and parking management can improve the efficiency and outcome of vehicles entering and exiting parking lots for events. At this amphitheater, event management techniques such as clear signage for lot parking, on-site staff to direct traffic, and police control at driveways exiting to public streets will improve the traffic flow during events. Event traffic can cause congestion on local road leading up and following events. Improvements such as updated signal timing plans, improved signage, event day police-controlled intersections for larger events, and upgraded lane configurations can help mitigate congestion. A site map of potential improvements is shown in **Figure 14**.

Potential improvements include the following:

### 7.1 EVENT MANAGEMENT RECOMMENDATIONS

- Parking Information Guide and Access Signage
  - Place clear signage and marking directing parking vehicles.
  - Have signage directing how rideshare drivers enter, drop off, and exit the site.
  - Information guides that can be distributed with ticket sales to better direct patrons into the site.
- On-Site Traffic Control
  - Have staff directing vehicles to the correct parking lots upon entering the site.
  - Provide clear direction to vehicles where to exit the site.
- Event Day Police Control at Driveways
  - Provide police control to direct traffic to enter at certain driveways and exits in certain directions on the public streets.
  - Police control can decrease congestion among drivers and reduces confusion on how to enter and exit the site, especially during egress when surrounding traffic is at its least.
- Event Day Police-Controlled Intersection
  - At intersections near the proposed site, police control can help mitigate congestion during large amphitheater events.
  - Intersections that could benefit from police control:
    - SW 15<sup>th</sup> Street at S Sara Road
    - John Kilpatrick Turnpike at SW 15<sup>th</sup> Street
- Multi-Directional Lanes
  - Transition driveways into and out of the site for dual lanes to increase traffic flow and decrease congestion.
  - Multilane Entry – Northernmost driveway at S Sara Avenue (Driveway D) and South driveway off SW 15<sup>th</sup> Street (Driveway A).
  - Multilane Exit – South driveway off SW 15<sup>th</sup> Street (Driveway A)

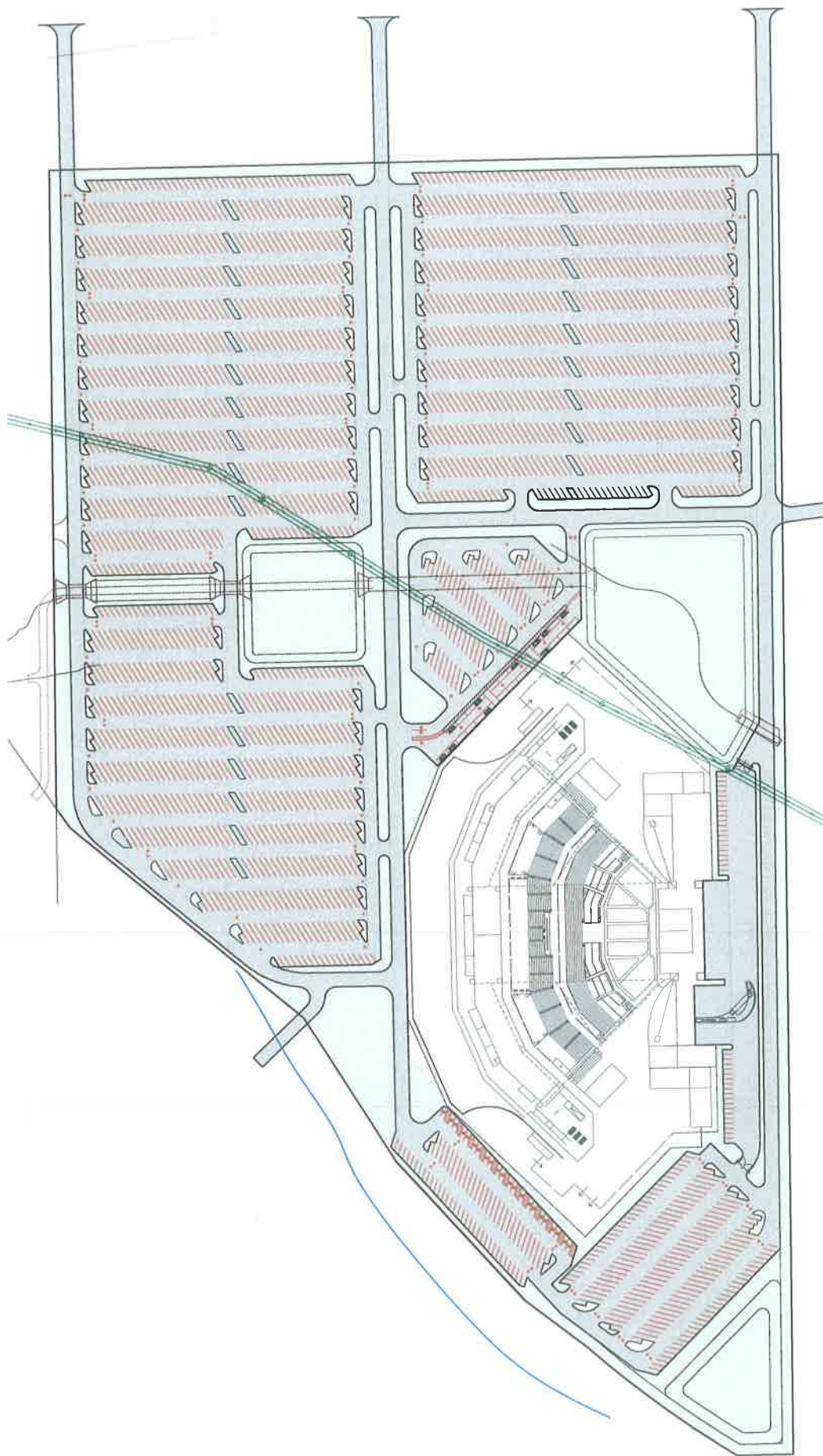
## 7.2 SURROUNDING INFRASTRUCTURE IMPROVEMENT RECOMMENDATIONS

- Revised Traffic Signal Timing Plans
  - Develop coordinated traffic signal timing plans at signalized intersections to increase level of service and reduce control delay around events.
  - Intersections that would benefit from revised timing plans:
    - SW 15<sup>th</sup> Street at S Morgan Road
    - SW 15<sup>th</sup> Street at S Sara Road
    - John Kilpatrick Turnpike at SW 15<sup>th</sup> Street
    - SW 15<sup>th</sup> Street at S Mustang Road
    - Reno Avenue at S Sara Road
- Upgraded Lane Configurations – John Kilpatrick Turnpike (Northbound On-Ramp)
  - Increasing the capacity for the northbound on-ramp of the John Kilpatrick Turnpike at SW 15<sup>th</sup> Street by adding a second tolling lane will help decrease congestion in the future. This increased capacity will help vehicles both at events and as vehicle traffic in this area increases in the future.



## **Appendix A: Site Plan**







## **Appendix B: Traffic Count Data**

# 1. Reno Avenue at Morgan Road - TMC

Thu Nov 2, 2023

Full Length (2 PM-12 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1128550, Location: 35.464342, -97.689054



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

Leg Direction	Morgan Road Southbound					Reno Avenue Westbound					Morgan Road Northbound					Reno Avenue 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				
2023-11-02 2:00PM	18	60	15	0	93	0	12	54	23	0	89	0	12	72	35	2	121	0	38	22	9	0	372		
2:15PM	10	47	8	0	65	0	8	43	28	0	79	0	17	62	51	0	130	0	32	28	12	0	346		
2:30PM	14	79	18	0	111	0	8	43	27	0	78	0	13	58	38	0	109	0	53	33	13	0	397		
2:45PM	7	66	10	0	83	0	16	45	24	0	85	0	30	72	40	0	142	0	35	28	10	0	383		
Hourly Total	49	252	51	0	352	0	44	185	102	0	331	0	72	264	164	2	502	0	158	111	44	0	1498		
3:00PM	11	105	7	0	123	0	9	45	33	0	87	0	22	69	30	0	121	0	36	24	9	0	400		
3:15PM	11	75	18	0	104	0	17	54	28	0	99	0	18	78	41	0	137	0	38	36	11	0	425		
3:30PM	10	61	14	0	85	0	28	54	25	0	107	0	29	78	56	0	163	0	89	53	38	0	535		
3:45PM	11	82	13	0	106	0	17	59	21	0	97	0	20	85	66	0	171	0	59	47	10	0	490		
Hourly Total	43	323	52	0	418	0	71	212	107	0	390	0	89	310	193	0	592	0	222	160	68	0	1850		
4:00PM	18	109	11	0	138	0	24	62	43	0	129	0	27	72	41	0	140	0	81	47	29	0	564		
4:15PM	10	95	22	0	127	0	20	80	27	0	127	0	18	85	41	0	144	0	34	28	10	0	470		
4:30PM	18	57	6	0	81	0	27	68	34	0	129	0	21	62	45	0	128	0	66	40	16	0	460		
4:45PM	19	71	8	0	98	0	26	74	43	0	143	0	20	62	45	0	127	0	62	39	7	0	476		
Hourly Total	65	332	47	0	444	0	97	284	147	0	528	0	86	281	172	0	539	0	243	154	62	0	1970		
5:00PM	22	108	9	0	139	0	36	94	50	1	181	0	23	87	41	0	151	0	65	43	11	0	590		
5:15PM	10	77	6	0	93	0	18	89	51	0	158	0	19	97	45	0	161	0	46	42	6	0	506		
5:30PM	13	52	5	0	70	0	25	94	32	0	151	0	12	76	46	0	134	0	41	30	12	0	438		
5:45PM	9	51	7	0	67	0	14	57	27	0	98	0	6	80	47	1	134	0	35	26	9	0	369		
Hourly Total	54	288	27	0	369	0	93	334	160	1	588	0	60	340	179	1	580	0	187	141	38	0	1903		
6:00PM	4	52	2	0	58	0	10	55	28	0	93	0	11	40	35	0	86	0	23	34	4	0	298		
6:15PM	4	42	11	0	57	0	7	50	13	0	70	0	15	50	31	0	96	0	31	24	9	0	287		
6:30PM	6	39	6	0	51	0	13	39	16	0	68	0	9	45	21	0	75	0	26	19	7	0	246		
6:45PM	9	42	8	0	59	0	8	30	13	0	51	0	3	40	15	0	58	0	21	17	4	0	210		
Hourly Total	23	175	27	0	225	0	38	174	70	0	282	0	38	175	102	0	315	0	101	94	24	0	1041		
7:00PM	6	27	4	0	37	0	9	38	19	0	66	0	6	47	22	0	75	0	23	13	5	0	219		
7:15PM	5	30	2	0	37	0	9	39	16	0	64	0	5	49	16	0	70	0	20	14	2	0	207		
7:30PM	1	18	2	0	21	0	5	24	6	0	35	0	3	39	17	0	59	0	8	18	6	0	147		
7:45PM	1	23	3	0	27	0	2	29	6	0	37	0	11	36	25	0	72	0	8	13	4	0	161		
Hourly Total	13	98	11	0	122	0	25	130	47	0	202	0	25	171	80	0	276	0	59	58	17	0	734		
8:00PM	2	21	6	0	29	0	4	14	5	0	23	0	4	37	17	0	58	0	9	9	3	0	131		
8:15PM	0	21	2	0	23	0	7	26	12	0	45	0	2	32	14	0	48	0	17	16	1	0	150		
8:30PM	4	11	3	0	18	0	5	21	4	0	30	0	2	28	23	0	53	0	8	8	1	0	118		
8:45PM	6	17	2	0	25	0	10	24	11	0	45	0	2	26	13	0	41	0	10	12	1	0	134		
Hourly Total	12	70	13	0	95	0	26	85	32	0	143	0	10	123	67	0	200	0	44	45	6	0	533		
9:00PM	3	17	2	0	22	0	10	26	8	0	44	0	2	28	25	0	55	0	15	14	5	0	155		
9:15PM	4	15	0	0	19	0	1	18	10	0	29	0	1	29	21	0	51	0	11	20	6	0	136		
9:30PM	0	17	3	0	20	0	4	18	4	0	26	0	1	19	17	0	37	0	9	6	2	0	100		
9:45PM	0	19	0	0	19	0	3	6	6	0	15	0	1	26	8	0	35	0	4	8	5	0	86		
Hourly Total	7	68	5	0	80	0	18	68	28	0	114	0	5	102	71	0	178	0	39	48	18	0	477		
10:00PM	0	11	0	0	11	0	4	7	0	0	11	0	1	27	10	0	38	0	10	7	2	0	79		
10:15PM	1	13	0	0	14	0	3	3	4	0	10	0	2	30	4	0	36	0	3	4	1	0	68		
10:30PM	1	13	0	0	14	0	7	6	4	0	17	0	0	29	8	0	37	0	6	10	5	0	89		
10:45PM	2	10	0	0	12	0	1	8	3	0	12	0	0	28	5	0	33	0	4	3	5	0	69		
Hourly Total	4	47	0	0	51	0	15	24	11	0	50	0	3	114	27	0	144	0	23	24	13	0	305		
11:00PM	2	27	7	0	36	0	2	5	3	0	10	0	3	23	10	0	36	0	10	3	1	0	96		
11:15PM	0	9	1	0	10	0	1	6	1	0	8	0	2	14	3	0	19	0	3	5	2	0	47		
11:30PM	0	18	2	0	20	0	3	7	1	0	11	0	0	9	5	0	14	0	3	3	1	0	52		
11:45PM	1	13	1	0	15	0	0	5	1	0	6	0	0	13	5	1	19	0	4	6	1	0	51		
Hourly Total	3	67	11	0	81	0	6	23	6	0	35	0	5	59	23	1	88	0	20	17	5	0	246		
Total	273	1720	244	0	2237	0	433	1519	710	1	2663	0	393	1939	1078	4	3414	0	1096	852	295	0	2243	1	10557
% Approach	12.2%	76.9%	10.9%	0%	-	-	16.3%	57.0%	26.7%	0%	-	-	11.5%	56.8%	31.6%	0.1%	-	-	48.9%	38.0%	13.2%	0%	-	-	
% Total	2.6%	16.3%	2.3%	0%	21.2%	-	4.1%	14.4%	6.7%	0%	25.2%	-	3.7%	18.4%	10.2%	0%	32.3%	-	10.4%	8.1%	2.8%	0%	21.2%	-	
Lights	266	1635	211	0	2112	-	416	1485	619	1	2521	-	327	1818	944	2	3091	-	962	827	285	0	2074	-	9798
% Lights	97.4%	95.1%	86.5%	0%	94.4%	-	96.1%	97.8%	87.2%	100%	94.7%	-	83.2%	93.8%	87.6%	50.0%	90.5%	-	87.8%	97.1%	96.6%	0%	92.5%	-	92.8%
Articulated Trucks	5	55	18	0	78	-	7	6	75	0	88	-	41	68	91	2	202	-	104	11	4	0	119	-	487
% Articulated Trucks	1.8%	3.2%	7.4%	0%	3.5%	-	1.6%	0.4%	10.6%	0%	3.3%	-	10.4%	3.5%	8.4%	50.0%	5.9%	-	9.5%	1.3%	1.4%	0%	5.3%	-	4.6%
Buses and Single-Unit Trucks	2	30	15	0	47	-	10	28	16	0	54	-	25	53	43	0	121	-	30	14	6	0	50	-	272

Leg Direction	Morgan Road Southbound						Reno Avenue Westbound						Morgan Road Northbound						Reno Avenue 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
% Buses and Single-Unit Trucks	0.7%	1.7%	6.1%	0%	2.1%	-	2.3%	1.8%	2.3%	0%	2.0%	-	6.4%	2.7%	4.0%	0%	3.5%	-	2.7%	1.6%	2.0%	0%	2.2%	-	2.6%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	0
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	1
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- 100%

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

1. Reno Avenue at Morgan Road - TMC

Thu Nov 2, 2023

Full Length (2 PM-12 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

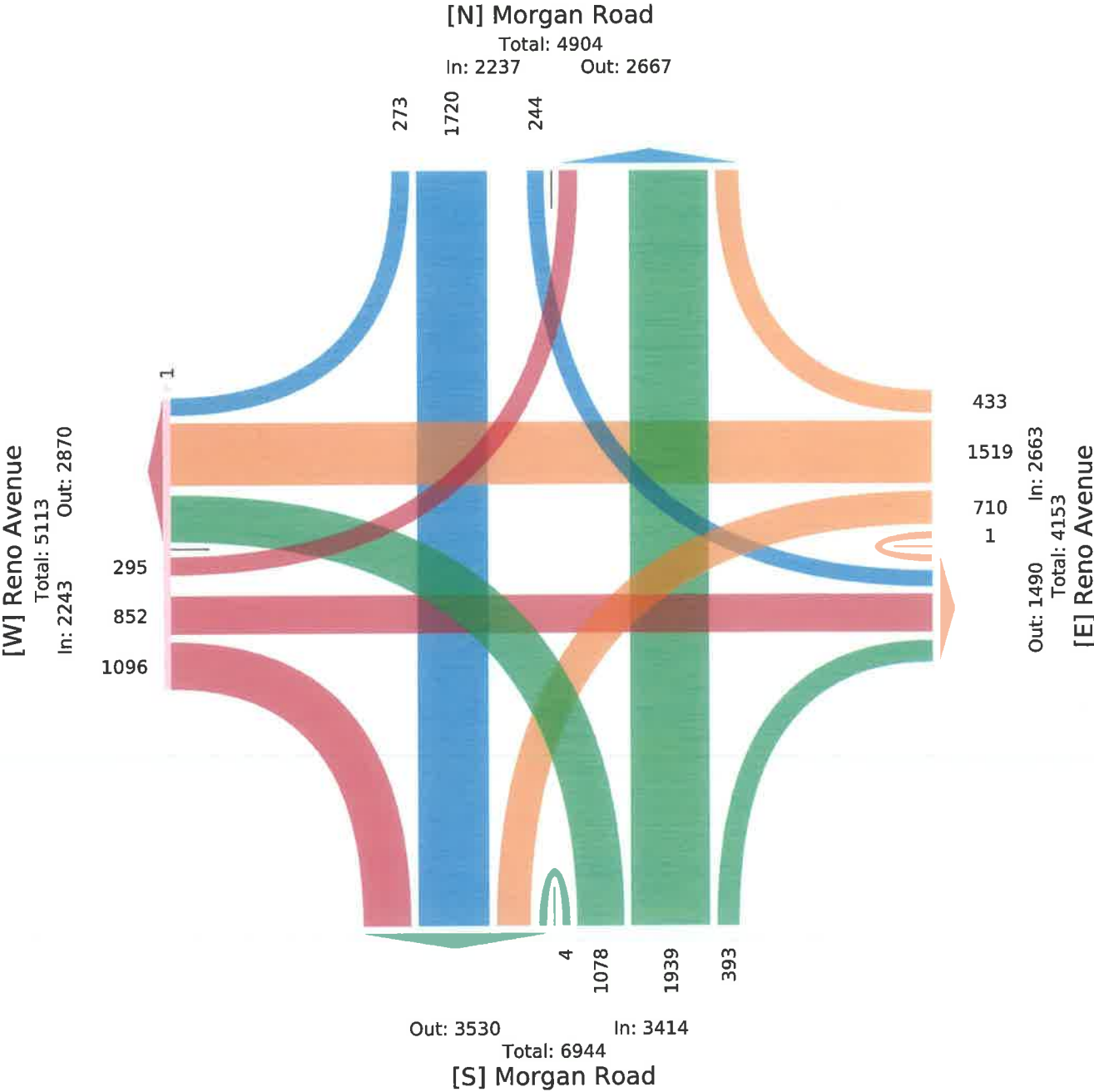
All Movements

ID: 1128550, Location: 35.464342, -97.689054



Provided by: C. J. Hensch & Associates Inc.

5215 Sycamore Ave.,  
Pasadena, TX, 77503, US



# 1. Reno Avenue at Morgan Road - TMC

Thu Nov 2, 2023

PM Peak (Nov 02 2023 3:30PM - 4:30 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1128550, Location: 35.464342, -97.689054



Provided by: C. J. Hensch & Associates Inc.

5215 Sycamore Ave.,  
Pasadena, TX, 77503, US

Leg Direction	Morgan Road Southbound						Reno Avenue Westbound						Morgan Road Northbound						Reno Avenue 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
2023-11-02 3:30PM	10	61	14	0	85	0	28	54	25	0	107	0	29	78	56	0	163	0	89	53	38	0	180	0	535
3:45PM	11	82	13	0	106	0	17	59	21	0	97	0	20	85	66	0	171	0	59	47	10	0	116	0	490
4:00PM	18	109	11	0	138	0	24	62	43	0	129	0	27	72	41	0	140	0	81	47	29	0	157	0	564
4:15PM	10	95	22	0	127	0	20	80	27	0	127	0	18	85	41	0	144	0	34	28	10	0	72	0	470
<b>Total</b>	49	347	60	0	456	0	89	255	116	0	460	0	94	320	204	0	618	0	263	175	87	0	525	0	2059
<b>% Approach</b>	10.7%	76.1%	13.2%	0%	-	-	19.3%	55.4%	25.2%	0%	-	-	15.2%	51.8%	33.0%	0%	-	-	50.1%	33.3%	16.6%	0%	-	-	-
<b>% Total</b>	2.4%	16.9%	2.9%	0%	22.1%	-	4.3%	12.4%	5.6%	0%	22.3%	-	4.6%	15.5%	9.9%	0%	30.0%	-	12.8%	8.5%	4.2%	0%	25.5%	-	-
<b>PHF</b>	0.681	0.796	0.682	-	0.826	-	0.795	0.797	0.674	-	0.891	-	0.810	0.941	0.773	-	0.904	-	0.739	0.825	0.572	-	0.729	-	0.913
<b>Lights</b>	48	335	48	0	431	-	84	247	107	0	438	-	78	298	175	0	551	-	246	168	86	0	500	-	1920
<b>% Lights</b>	98.0%	96.5%	80.0%	0%	94.5%	-	94.4%	96.9%	92.2%	0%	95.2%	-	83.0%	93.1%	85.8%	0%	89.2%	-	93.5%	96.0%	98.9%	0%	95.2%	-	93.2%
<b>Articulated Trucks</b>	0	5	6	0	11	-	2	2	6	0	10	-	8	16	20	0	44	-	13	3	0	0	16	-	81
<b>% Articulated Trucks</b>	0%	1.4%	10.0%	0%	2.4%	-	2.2%	0.8%	5.2%	0%	2.2%	-	8.5%	5.0%	9.8%	0%	7.1%	-	4.9%	1.7%	0%	0%	3.0%	-	3.9%
<b>Buses and Single-Unit Trucks</b>	1	7	6	0	14	-	3	6	3	0	12	-	8	6	9	0	23	-	4	4	1	0	9	-	58
<b>% Buses and Single-Unit Trucks</b>	2.0%	2.0%	10.0%	0%	3.1%	-	3.4%	2.4%	2.6%	0%	2.6%	-	8.5%	1.9%	4.4%	0%	3.7%	-	1.5%	2.3%	1.1%	0%	1.7%	-	2.8%
<b>Pedestrians</b>	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
<b>% Pedestrians</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Bicycles on Crosswalk</b>	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
<b>% Bicycles on Crosswalk</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

1. Reno Avenue at Morgan Road - TMC

Thu Nov 2, 2023

PM Peak (Nov 02 2023 3:30PM - 4:30 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

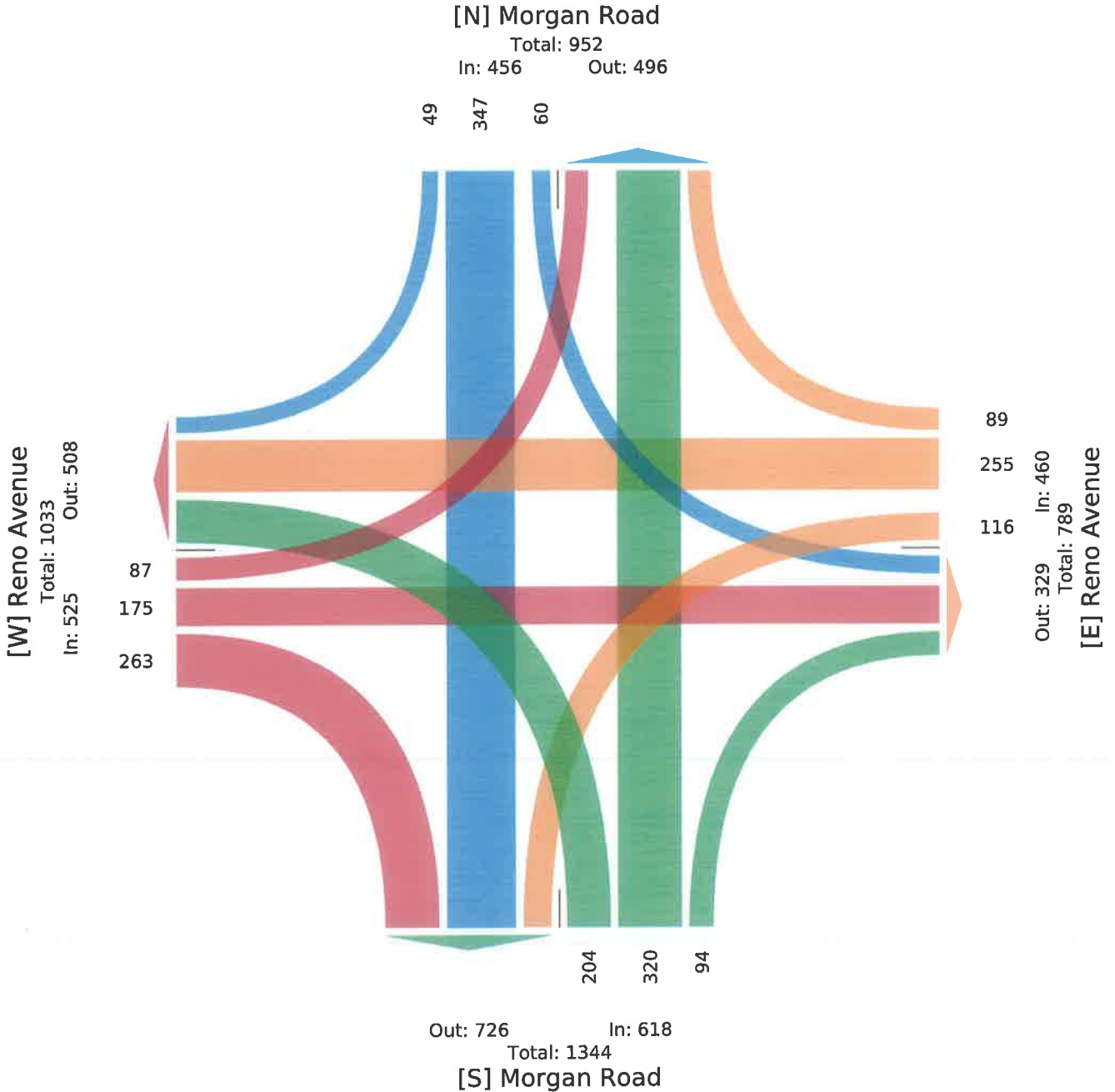
All Movements

ID: 1128550, Location: 35.464342, -97.689054



Provided by: C. J. Hensch & Associates  
Inc.

5215 Sycamore Ave.,  
Pasadena, TX, 77503, US





## 2. Reno Avenue at Sara Road - TMC

Thu Nov 2, 2023

Full Length (2 PM-12 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1128551, Location: 35.464331, -97.706851



Provided by: C. J. Hensch & Associates Inc.

5215 Sycamore Ave.,  
Pasadena, TX, 77503, US

Leg Direction	Sara Road Southbound						Reno Avenue Westbound						Sara Road Northbound						Reno Avenue 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
2023-11-02 2:00PM	12	27	20	0	59	0	16	66	15	0	97	0	4	24	21	0	49	0	26	30	15	0	71	0	276
2:15PM	28	27	20	0	75	0	24	48	11	0	83	0	5	19	20	0	44	0	25	35	13	0	73	0	275
2:30PM	23	31	15	0	69	0	15	59	7	0	81	0	3	23	21	0	47	0	29	40	16	0	85	0	282
2:45PM	19	25	11	0	55	0	17	55	8	0	80	0	8	24	27	0	59	0	20	39	12	0	71	0	265
Hourly Total	82	110	66	0	258	0	72	228	41	0	341	0	20	90	89	0	199	0	100	144	56	0	300	0	1098
3:00PM	20	30	20	0	70	0	14	58	6	0	78	0	6	26	26	0	58	0	26	29	14	0	69	0	275
3:15PM	28	38	19	0	85	0	5	56	8	0	69	0	6	37	22	0	65	0	21	39	11	0	71	0	290
3:30PM	27	38	12	0	77	0	26	71	13	0	110	0	9	28	16	0	53	0	24	37	22	0	83	0	323
3:45PM	35	40	21	0	96	0	12	73	14	0	99	0	4	30	29	0	63	0	28	43	20	0	91	0	349
Hourly Total	110	146	72	0	328	0	57	258	41	0	356	0	25	121	93	0	239	0	99	148	67	0	314	0	1237
4:00PM	46	51	23	0	120	0	20	91	24	0	135	0	4	38	36	0	78	0	29	24	25	0	78	0	411
4:15PM	58	41	16	0	115	0	19	83	15	0	117	0	4	25	32	0	61	0	29	31	24	0	84	0	377
4:30PM	51	43	20	0	114	0	26	106	27	0	159	0	6	24	29	0	59	0	32	32	19	0	83	0	415
4:45PM	56	42	15	0	113	0	23	92	21	0	136	0	5	31	37	0	73	0	28	31	22	0	81	0	403
Hourly Total	211	177	74	0	462	0	88	372	87	0	547	0	19	118	134	0	271	0	118	118	90	0	326	0	1606
5:00PM	41	44	22	0	107	0	20	131	30	0	181	0	3	37	37	0	77	0	34	37	23	0	94	0	459
5:15PM	60	71	17	0	148	0	16	118	16	0	150	0	4	35	37	0	76	0	42	42	28	0	112	0	486
5:30PM	49	55	14	0	118	0	12	140	10	0	162	0	6	44	38	0	88	0	30	33	19	0	82	0	450
5:45PM	36	47	16	0	99	0	5	97	13	0	115	0	6	32	40	0	78	0	26	36	17	0	79	0	371
Hourly Total	186	217	69	0	472	0	53	486	69	0	608	0	19	148	152	0	319	0	132	148	87	0	367	0	1766
6:00PM	34	32	11	0	77	0	5	86	5	0	96	0	6	23	25	0	54	0	34	31	24	0	89	0	316
6:15PM	44	26	14	0	84	0	9	68	14	0	91	0	8	36	32	0	76	0	37	32	19	0	88	0	339
6:30PM	28	27	14	0	69	0	16	53	6	0	75	0	3	21	26	0	50	0	45	29	18	0	92	0	286
6:45PM	19	28	2	0	49	0	8	47	7	0	62	0	11	21	22	0	54	0	21	21	21	0	63	0	228
Hourly Total	125	113	41	0	279	0	38	254	32	0	324	0	28	101	105	0	234	0	137	113	82	0	332	0	1169
7:00PM	27	25	3	0	55	0	11	50	4	0	65	0	4	24	17	0	45	0	28	13	18	0	59	0	224
7:15PM	22	24	12	0	58	0	8	52	5	0	65	0	1	16	16	0	33	0	28	15	11	0	54	0	210
7:30PM	17	24	4	0	45	0	3	27	6	0	36	0	4	14	19	0	37	0	25	18	16	0	59	0	177
7:45PM	19	23	6	0	48	0	11	33	5	0	49	0	1	20	14	0	35	0	23	18	16	0	57	0	189
Hourly Total	85	96	25	0	206	0	33	162	20	0	215	0	10	74	66	0	150	0	104	64	61	0	229	0	800
8:00PM	16	5	3	0	24	0	2	23	7	0	32	0	5	12	10	0	27	0	15	10	11	0	36	0	119
8:15PM	14	14	7	0	35	0	4	20	4	0	28	0	4	8	13	0	25	0	23	17	19	0	59	0	147
8:30PM	17	15	5	0	37	0	6	36	2	0	44	0	2	11	11	0	24	0	15	10	11	0	36	0	141
8:45PM	9	10	5	0	24	0	5	35	3	0	43	0	2	7	11	0	20	0	20	13	13	0	46	0	133
Hourly Total	56	44	20	0	120	0	17	114	16	0	147	0	13	38	45	0	96	0	73	50	54	0	177	0	540
9:00PM	8	7	5	0	20	0	5	32	2	0	39	0	1	7	14	0	22	0	12	15	4	0	31	0	112
9:15PM	11	8	4	0	23	0	7	31	4	0	42	0	4	8	8	0	20	0	16	22	7	0	45	0	130
9:30PM	6	5	2	0	13	0	6	28	2	0	36	0	1	5	6	0	12	0	10	15	10	0	35	0	96
9:45PM	14	10	3	0	27	0	2	10	0	0	12	0	0	3	5	0	8	0	7	12	10	0	29	0	76
Hourly Total	39	30	14	0	83	0	20	101	8	0	129	0	6	23	33	0	62	0	45	64	31	0	140	0	414
10:00PM	4	4	4	0	12	0	1	12	3	0	16	0	2	6	8	0	16	0	8	10	6	0	24	0	68
10:15PM	8	8	1	0	17	0	0	4	0	0	4	0	0	6	5	0	11	0	7	4	12	0	23	0	55
10:30PM	4	2	3	0	9	0	0	14	0	0	14	0	1	7	1	0	9	0	10	14	4	0	28	0	60
10:45PM	6	1	1	0	8	0	2	10	1	0	13	0	1	1	2	0	4	0	4	9	3	0	16	0	41
Hourly Total	22	15	9	0	46	0	3	40	4	0	47	0	4	20	16	0	40	0	29	37	25	0	91	0	224
11:00PM	8	6	9	0	23	0	1	7	1	0	9	0	0	4	0	0	4	0	3	6	1	0	10	0	46
11:15PM	2	2	1	0	5	0	1	9	1	0	11	0	0	2	2	0	4	0	3	5	0	0	8	0	28
11:30PM	1	4	1	0	6	0	0	6	2	0	8	0	1	3	3	0	7	0	2	9	2	0	13	0	34
11:45PM	5	1	4	0	10	0	0	12	0	0	12	0	0	2	2	0	4	0	1	4	5	0	10	0	36
Hourly Total	16	13	15	0	44	0	2	34	4	0	40	0	1	11	7	0	19	0	9	24	8	0	41	0	144
Total	932	961	405	0	2298	0	383	2049	322	0	2754	0	145	744	740	0	1629	0	846	910	561	0	2317	0	8998
% Approach	40.6%	41.8%	17.6%	0%	-	-	13.9%	74.4%	11.7%	0%	-	-	8.9%	45.7%	45.4%	0%	-	-	36.5%	39.3%	24.2%	0%	-	-	-
% Total	10.4%	10.7%	4.5%	0%	25.5%	-	4.3%	22.8%	3.6%	0%	30.6%	-	1.6%	8.3%	8.2%	0%	18.1%	-	9.4%	10.1%	6.2%	0%	25.8%	-	-
Lights	922	937	340	0	2199	-	331	2033	316	0	2680	-	142	718	736	0	1596	-	840	888	553	0	2281	-	8756
% Lights	98.9%	97.5%	84.0%	0%	95.7%	-	86.4%	99.2%	98.1%	0%	97.3%	-	97.9%	96.5%	99.5%	0%	98.0%	-	99.3%	97.6%	98.6%	0%	98.4%	-	97.3%
Articulated Trucks	5	12	51	0	68	-	29	7	2	0	38	-	1	8	0	0	9	-	0	12	7	0	19	-	134

Leg Direction	Sara Road Southbound						Reno Avenue Westbound						Sara Road Northbound						Reno Avenue 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
% Articulated Trucks	0.5%	1.2%	12.6%	0%	3.0%	-	7.6%	0.3%	0.6%	0%	1.4%	-	0.7%	1.1%	0%	0%	0.6%	-	0%	1.3%	1.2%	0%	0.8%	-	1.5%
Buses and Single-Unit Trucks	5	12	14	0	31	-	23	9	4	0	36	-	2	18	4	0	24	-	6	10	1	0	17	-	108
% Buses and Single-Unit Trucks	0.5%	1.2%	3.5%	0%	1.3%	-	6.0%	0.4%	1.2%	0%	1.3%	-	1.4%	2.4%	0.5%	0%	1.5%	-	0.7%	1.1%	0.2%	0%	0.7%	-	1.2%
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

2. Reno Avenue at Sara Road - TMC

Thu Nov 2, 2023

Full Length (2 PM-12 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

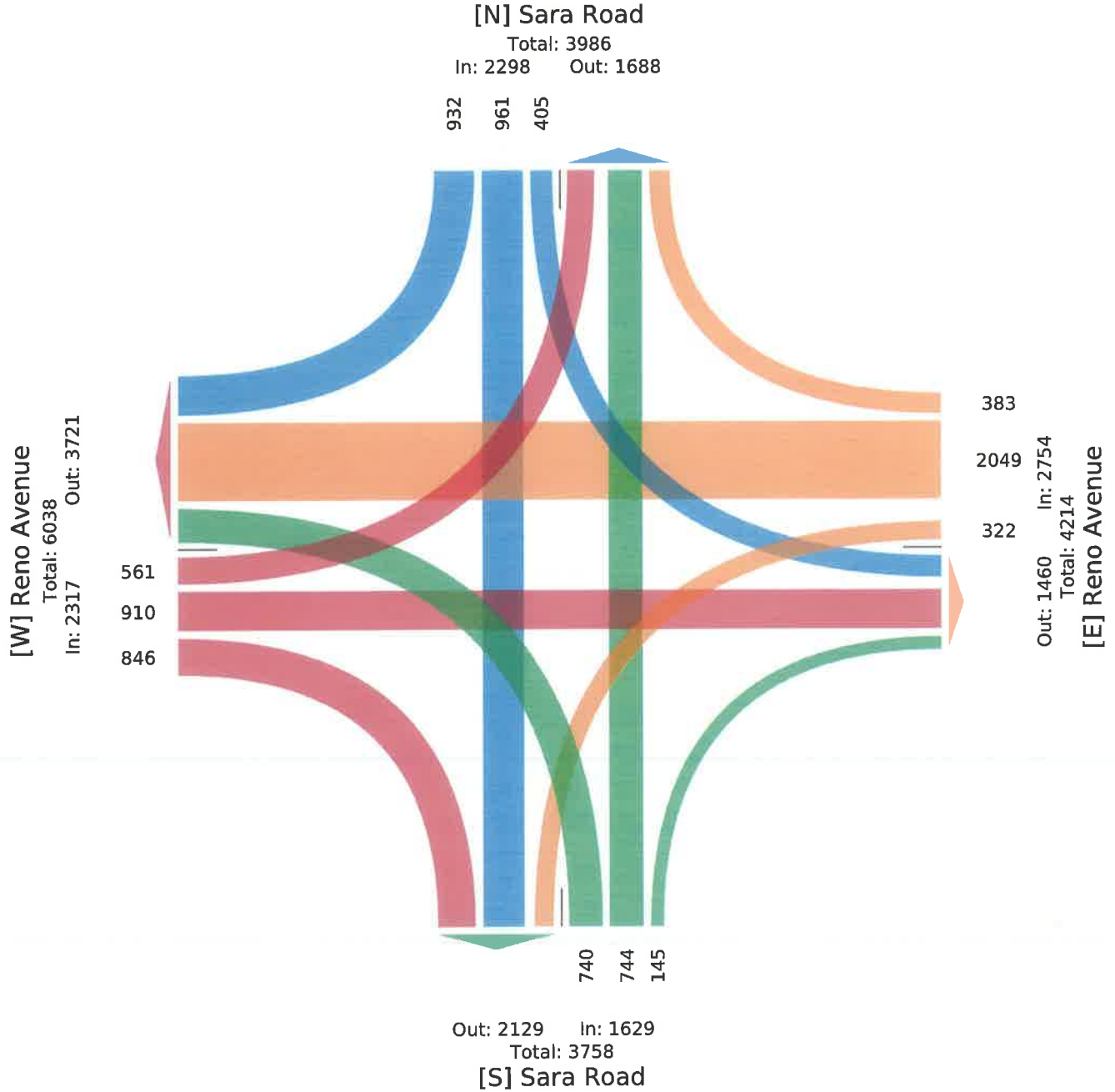
All Movements

ID: 1128551, Location: 35.464331, -97.706851



Provided by: C. J. Hensch & Associates  
Inc.

5215 Sycamore Ave.,  
Pasadena, TX, 77503, US



## 2. Reno Avenue at Sara Road - TMC

Thu Nov 2, 2023

PM Peak (Nov 02 2023 4:45PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1128551, Location: 35.464331, -97.706851



Provided by: C. J. Hensch & Associates Inc.

5215 Sycamore Ave.,  
Pasadena, TX, 77503, US

Leg Direction	Sara Road Southbound						Reno Avenue Westbound						Sara Road Northbound						Reno Avenue 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
2023-11-02 4:45PM	56	42	15	0	113	0	23	92	21	0	136	0	5	31	37	0	73	0	28	31	22	0	81	0	403
5:00PM	41	44	22	0	107	0	20	131	30	0	181	0	3	37	37	0	77	0	34	37	23	0	94	0	459
5:15PM	60	71	17	0	148	0	16	118	16	0	150	0	4	35	37	0	76	0	42	42	28	0	112	0	486
5:30PM	49	55	14	0	118	0	12	140	10	0	162	0	6	44	38	0	88	0	30	33	19	0	82	0	450
<b>Total</b>	206	212	68	0	486	0	71	481	77	0	629	0	18	147	149	0	314	0	134	143	92	0	369	0	1798
<b>% Approach</b>	42.4%	43.6%	14.0%	0%	-	-	11.3%	76.5%	12.2%	0%	-	-	5.7%	46.8%	47.5%	0%	-	-	36.3%	38.8%	24.9%	0%	-	-	-
<b>% Total</b>	11.5%	11.8%	3.8%	0%	27.0%	-	3.9%	26.8%	4.3%	0%	35.0%	-	1.0%	8.2%	8.3%	0%	17.5%	-	7.5%	8.0%	5.1%	0%	20.5%	-	-
<b>PHF</b>	0.858	0.746	0.773	-	0.821	-	0.772	0.859	0.642	-	0.869	-	0.750	0.835	0.980	-	0.892	-	0.798	0.851	0.821	-	0.824	-	0.925
<b>Lights</b>	205	209	63	0	477	-	64	481	75	0	620	-	18	143	149	0	310	-	134	140	92	0	366	-	1773
<b>% Lights</b>	99.5%	98.6%	92.6%	0%	98.1%	-	90.1%	100%	97.4%	0%	98.6%	-	100%	97.3%	100%	0%	98.7%	-	100%	97.9%	100%	0%	99.2%	-	98.6%
<b>Articulated Trucks</b>	1	0	4	0	5	-	3	0	1	0	4	-	0	0	0	0	0	-	0	1	0	0	1	-	10
<b>% Articulated Trucks</b>	0.5%	0%	5.9%	0%	1.0%	-	4.2%	0%	1.3%	0%	0.6%	-	0%	0%	0%	0%	0%	-	0%	0.7%	0%	0%	0.3%	-	0.6%
<b>Buses and Single-Unit Trucks</b>	0	3	1	0	4	-	4	0	1	0	5	-	0	4	0	0	4	-	0	2	0	0	2	-	15
<b>% Buses and Single-Unit Trucks</b>	0%	1.4%	1.5%	0%	0.8%	-	5.6%	0%	1.3%	0%	0.8%	-	0%	2.7%	0%	0%	1.3%	-	0%	1.4%	0%	0%	0.5%	-	0.8%
<b>Pedestrians</b>	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
<b>% Pedestrians</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Bicycles on Crosswalk</b>	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
<b>% Bicycles on Crosswalk</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

## 2. Reno Avenue at Sara Road - TMC

Thu Nov 2, 2023

PM Peak (Nov 02 2023 4:45PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

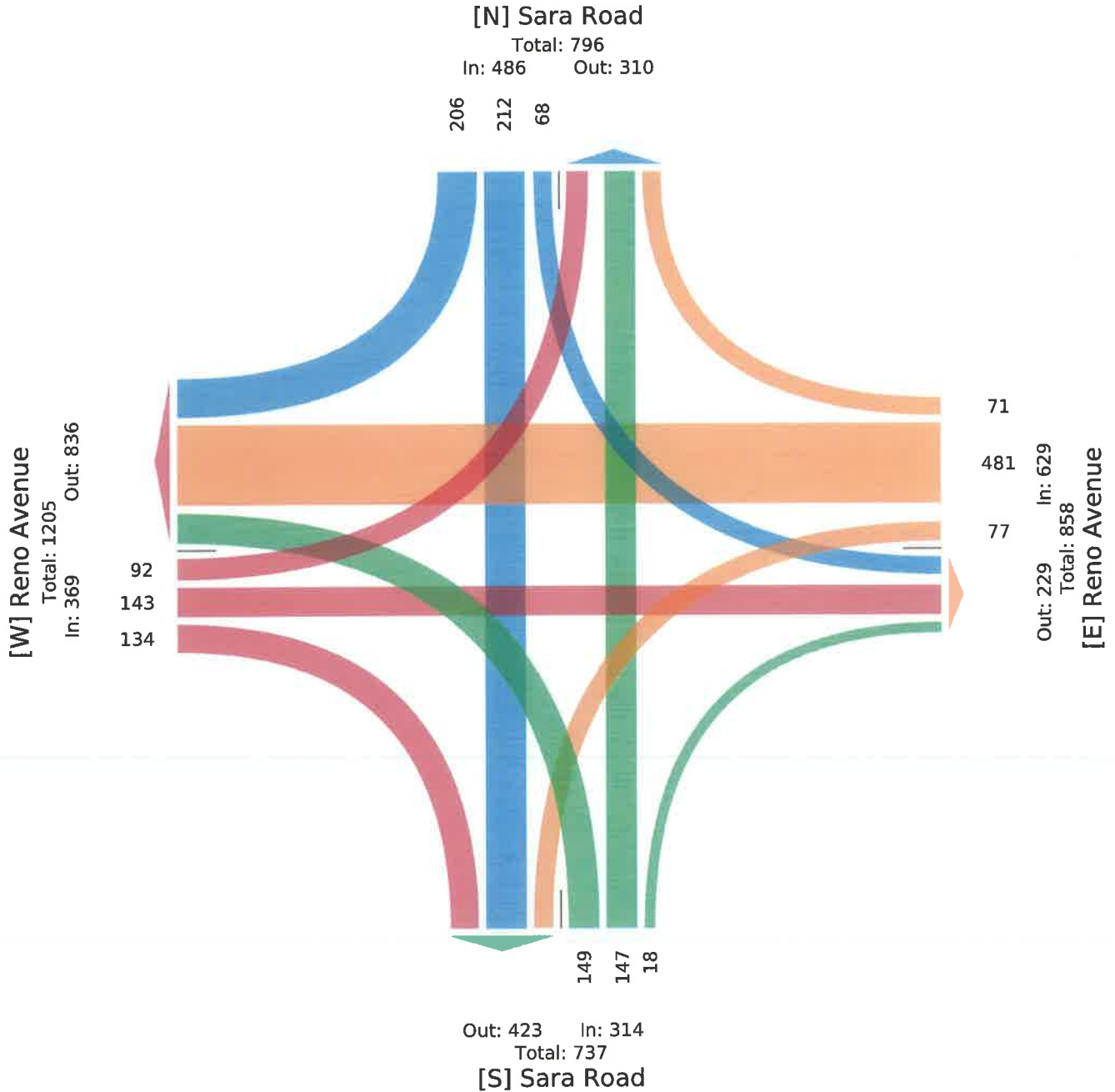
All Movements

ID: 1128551, Location: 35.464331, -97.706851



Provided by: C. J. Hensch & Associates  
Inc.

5215 Sycamore Ave.,  
Pasadena, TX, 77503, US





### 3. Mustang Road at SW 11th Street - TMC

Thu Nov 2, 2023

Full Length (2 PM-12 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1128552, Location: 35.454129, -97.724691



Provided by: C. J. Hensch & Associates

Inc.

5215 Sycamore Ave.,  
Pasadena, TX, 77503, US

Leg Direction	Mustang Road Southbound					SW 11th Street Westbound					Mustang Road Northbound					SW 11th Street 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			
2023-11-02 2:00PM	6	152	0	0	158	0	0	0	0	0	0	157	6	0	163	0	11	0	3	0	14	0	335	
2:15PM	10	163	0	0	173	0	0	0	0	0	0	182	14	0	196	0	8	0	8	0	16	0	385	
2:30PM	4	167	0	0	171	0	1	0	0	1	0	185	15	0	201	0	7	0	8	0	15	0	388	
2:45PM	8	169	0	0	177	0	1	0	0	1	1	209	14	0	223	0	8	0	4	0	12	0	413	
Hourly Total	28	651	0	0	679	0	2	0	0	2	1	733	49	0	783	0	34	0	23	0	57	0	1521	
3:00PM	11	175	0	0	186	0	0	0	0	0	0	173	11	0	185	0	15	0	6	0	21	0	392	
3:15PM	10	189	0	0	199	0	0	0	0	0	1	203	17	0	220	0	13	0	6	0	19	0	438	
3:30PM	14	183	1	0	198	0	2	0	0	2	0	204	19	0	223	0	7	0	6	0	13	0	436	
3:45PM	23	200	0	0	223	0	0	0	0	0	0	202	23	0	225	0	11	0	8	0	19	0	467	
Hourly Total	58	747	1	0	806	0	2	0	0	2	1	782	70	0	853	0	46	0	26	0	72	0	1733	
4:00PM	9	183	1	0	193	0	1	0	0	1	1	196	22	0	219	0	4	0	6	0	10	0	423	
4:15PM	19	203	0	0	222	0	0	0	0	0	1	189	6	0	195	0	13	0	12	0	25	0	442	
4:30PM	18	229	1	0	248	0	1	0	0	1	1	169	23	0	192	0	16	0	4	0	20	0	461	
4:45PM	18	235	0	0	253	0	0	0	0	0	0	209	16	0	225	0	19	0	7	0	26	0	504	
Hourly Total	64	850	2	0	916	0	2	0	0	2	3	763	67	0	831	0	52	0	29	0	81	0	1830	
5:00PM	22	253	1	0	276	0	2	0	0	2	1	208	21	0	230	0	13	0	6	0	19	0	527	
5:15PM	18	246	0	0	264	0	1	1	0	2	0	235	22	0	257	0	18	0	11	0	29	0	552	
5:30PM	18	241	0	0	259	0	2	0	0	2	0	202	13	0	218	0	11	0	3	0	14	0	493	
5:45PM	14	245	0	0	259	0	1	0	0	1	1	188	20	0	209	0	13	0	8	0	21	0	490	
Hourly Total	72	985	1	0	1058	0	6	1	0	7	2	833	76	0	914	0	55	0	28	0	83	0	2062	
6:00PM	11	223	1	0	235	0	1	1	0	2	1	188	12	0	201	0	13	0	6	0	19	0	457	
6:15PM	16	207	0	0	223	0	0	0	0	0	0	213	21	0	234	0	10	0	8	1	19	0	476	
6:30PM	15	236	0	0	251	0	0	0	0	0	0	177	6	0	183	0	8	0	4	0	12	0	446	
6:45PM	12	178	0	0	190	0	0	0	0	0	0	174	7	0	181	0	11	0	5	0	16	0	387	
Hourly Total	54	844	1	0	899	0	1	1	0	2	1	752	46	0	799	0	42	0	23	1	66	0	1766	
7:00PM	8	156	0	0	164	0	0	0	0	0	0	150	10	0	160	0	7	0	5	0	12	0	336	
7:15PM	14	141	0	0	155	0	0	0	0	0	0	169	8	0	178	0	4	0	6	0	10	0	343	
7:30PM	9	143	0	0	152	0	0	0	0	0	1	126	7	0	133	0	6	0	7	0	13	0	298	
7:45PM	10	123	0	0	133	0	0	1	0	1	0	136	5	0	141	0	6	0	8	0	14	0	289	
Hourly Total	41	563	0	0	604	0	0	1	0	1	1	581	30	0	612	0	23	0	26	0	49	0	1266	
8:00PM	13	132	0	0	145	0	0	0	0	0	0	125	9	0	134	0	3	0	2	0	5	0	284	
8:15PM	7	117	0	0	124	0	0	0	0	0	0	99	9	0	108	0	7	0	7	0	14	0	246	
8:30PM	9	112	0	0	121	0	0	0	0	0	0	100	4	0	104	0	6	0	3	0	9	0	234	
8:45PM	8	83	0	0	91	0	1	0	0	1	0	86	8	0	94	0	7	0	3	0	10	0	196	
Hourly Total	37	444	0	0	481	0	1	0	0	1	0	410	30	0	440	0	23	0	15	0	38	0	960	
9:00PM	8	107	0	0	115	0	0	0	0	0	0	71	4	0	75	0	5	0	4	0	9	0	199	
9:15PM	10	80	0	0	90	0	0	0	0	0	0	90	4	0	94	0	6	0	4	0	10	0	194	
9:30PM	10	78	0	0	88	0	0	0	0	0	0	65	6	0	72	0	4	0	1	0	5	0	165	
9:45PM	4	63	0	0	67	0	0	0	0	0	0	51	2	0	53	0	3	0	5	0	8	0	128	
Hourly Total	32	328	0	0	360	0	0	0	0	0	0	277	16	0	294	0	18	0	14	0	32	0	686	
10:00PM	6	58	0	0	64	0	0	0	0	0	0	44	4	0	48	0	6	0	2	0	8	0	120	
10:15PM	6	45	0	0	51	0	0	0	0	0	0	51	3	0	54	0	2	0	5	0	7	0	112	
10:30PM	5	35	0	0	40	0	0	0	0	0	0	34	3	0	37	0	1	0	4	0	5	0	82	
10:45PM	1	33	0	0	34	0	0	0	0	0	0	27	1	0	28	0	1	0	5	0	6	0	68	
Hourly Total	18	171	0	0	189	0	0	0	0	0	0	156	11	0	167	0	10	0	16	0	26	0	382	
11:00PM	4	29	0	0	33	0	0	0	0	0	0	29	2	0	32	0	1	0	0	0	1	0	66	
11:15PM	3	21	0	0	24	0	0	0	0	0	0	23	5	0	28	0	2	0	3	0	5	0	57	
11:30PM	0	19	0	0	19	0	0	0	0	0	0	21	1	0	22	0	0	0	1	0	1	0	42	
11:45PM	3	24	0	0	27	0	1	0	0	1	0	18	0	0	18	0	0	0	1	0	1	0	47	
Hourly Total	10	93	0	0	103	0	1	0	0	1	0	91	8	0	100	0	3	0	5	0	8	0	212	
Total	414	5676	5	0	6095	0	15	3	0	0	18	12	5378	403	0	5793	0	306	0	205	1	512	0	12418
% Approach	6.8%	93.1%	0.1%	0%	-	-	83.3%	16.7%	0%	0%	-	0.2%	92.8%	7.0%	0%	-	59.8%	0%	40.0%	0.2%	-	-	-	
% Total	3.3%	45.7%	0%	0%	49.1%	-	0.1%	0%	0%	0.1%	-	0.1%	43.3%	3.2%	0%	46.7%	-	2.5%	0%	1.7%	0%	4.1%	-	
Lights	412	5641	5	0	6058	-	15	3	0	0	18	12	5323	398	0	5733	-	300	0	204	1	505	-	12314
% Lights	99.5%	99.4%	100%	0%	99.4%	-	100%	100%	0%	0%	100%	100%	99.0%	98.8%	0%	99.0%	-	98.0%	0%	99.5%	100%	98.6%	-	99.2%



Leg Direction	Mustang Road Southbound						SW 11th Street Westbound						Mustang Road Northbound						SW 11th Street 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
Articulated Trucks	0	8	0	0	8	-	0	0	0	0	0	-	0	12	1	0	13	-	0	0	0	0	0	-	21
% Articulated Trucks	0%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0.2%	0.2%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0.2%
Buses and Single-Unit Trucks	2	27	0	0	29	-	0	0	0	0	0	-	0	43	4	0	47	-	6	0	1	0	7	-	83
% Buses and Single-Unit Trucks	0.5%	0.5%	0%	0%	0.5%	-	0%	0%	0%	0%	0%	-	0%	0.8%	1.0%	0%	0.8%	-	2.0%	0%	0.5%	0%	1.4%	-	0.7%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	7	-	-	-	-	-	0	-	-	-	-	-	0	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	- 77.8%	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	- 22.2%	-	-	-	-	-	-	-	-	-	-	-	-	-

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

### 3. Mustang Road at SW 11th Street - TMC

Thu Nov 2, 2023

Full Length (2 PM-12 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

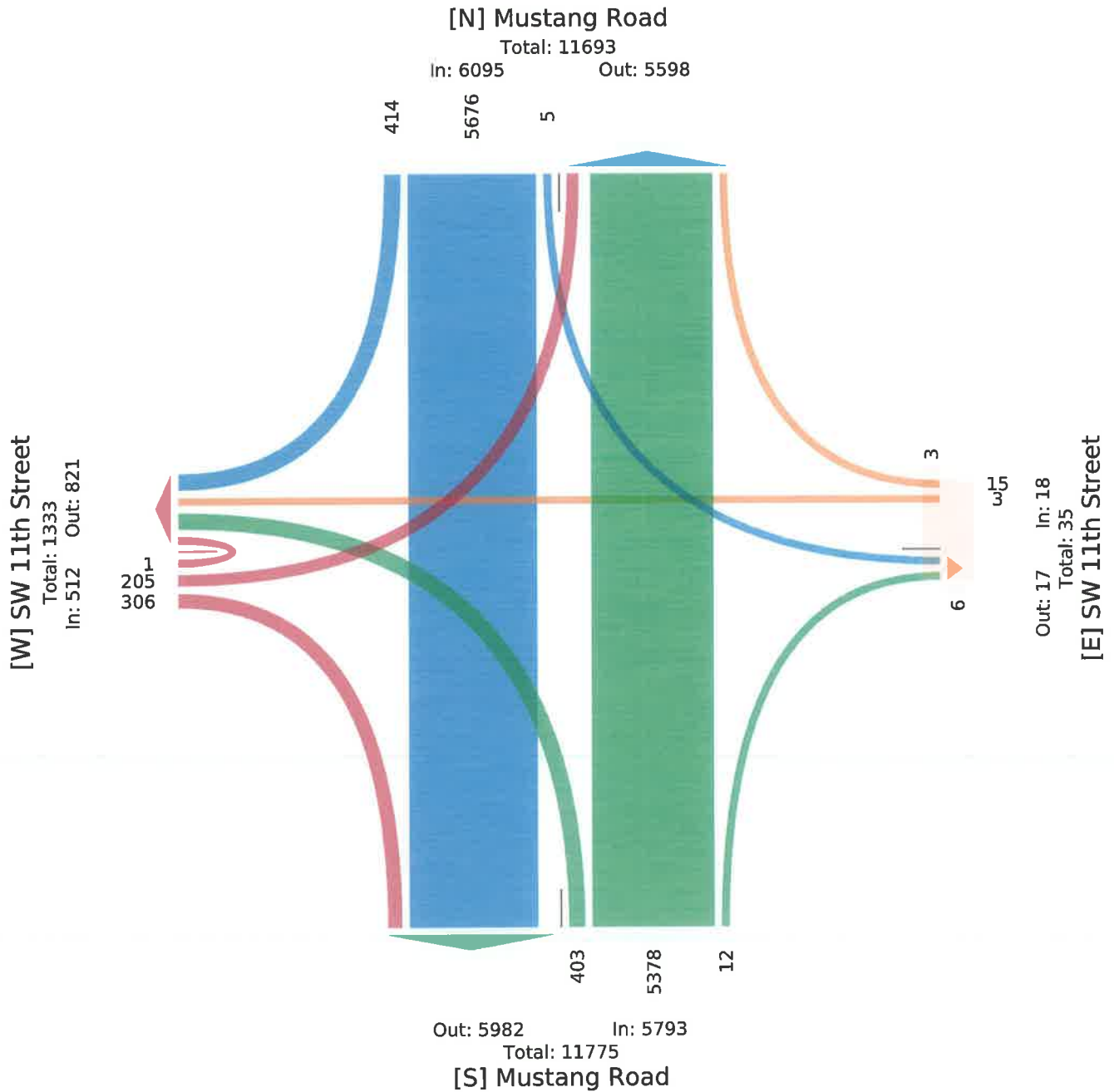
All Movements

ID: 1128552, Location: 35.454129, -97.724691



Provided by: C. J. Hensch & Associates  
Inc.

5215 Sycamore Ave.,  
Pasadena, TX, 77503, US



### 3. Mustang Road at SW 11th Street - TMC

Thu Nov 2, 2023

PM Peak (Nov 02 2023 4:45PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1128552, Location: 35.454129, -97.724691



Provided by: C. J. Hensch & Associates Inc.

5215 Sycamore Ave.,  
Pasadena, TX, 77503, US

Leg Direction	Mustang Road Southbound						SW 11th Street Westbound						Mustang Road Northbound						SW 11th Street 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
2023-11-02 4:45PM	18	235	0	0	253	0	0	0	0	0	0	0	0	209	16	0	225	0	19	0	7	0	26	0	504
5:00PM	22	253	1	0	276	0	2	0	0	0	2	1	1	208	21	0	230	0	13	0	6	0	19	0	527
5:15PM	18	246	0	0	264	0	1	1	0	0	2	0	0	235	22	0	257	0	18	0	11	0	29	0	552
5:30PM	18	241	0	0	259	0	2	0	0	0	2	0	3	202	13	0	218	0	11	0	3	0	14	0	493
<b>Total</b>	<b>76</b>	<b>975</b>	<b>1</b>	<b>0</b>	<b>1052</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>1</b>	<b>4</b>	<b>854</b>	<b>72</b>	<b>0</b>	<b>930</b>	<b>0</b>	<b>61</b>	<b>0</b>	<b>27</b>	<b>0</b>	<b>88</b>	<b>0</b>	<b>2076</b>
<b>% Approach</b>	7.2%	92.7%	0.1%	0%	-	-	83.3%	16.7%	0%	0%	-	-	0.4%	91.8%	7.7%	0%	-	-	69.3%	0%	30.7%	0%	-	-	-
<b>% Total</b>	3.7%	47.0%	0%	0%	50.7%	-	0.2%	0%	0%	0%	0.3%	-	0.2%	41.1%	3.5%	0%	44.8%	-	2.9%	0%	1.3%	0%	4.2%	-	-
<b>PHF</b>	0.864	0.963	0.250	-	0.953	-	0.625	0.250	-	-	0.750	-	0.333	0.909	0.818	-	0.905	-	0.803	-	0.614	-	0.759	-	0.940
<b>Lights</b>	76	972	1	0	1049	-	5	1	0	0	6	-	4	849	70	0	923	-	61	0	27	0	88	-	2066
<b>% Lights</b>	100%	99.7%	100%	0%	99.7%	-	100%	100%	0%	0%	100%	-	100%	99.4%	97.2%	0%	99.2%	-	100%	0%	100%	0%	100%	-	99.5%
<b>Articulated Trucks</b>	0	2	0	0	2	-	0	0	0	0	0	-	0	2	1	0	3	-	0	0	0	0	0	-	5
<b>% Articulated Trucks</b>	0%	0.2%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0.2%	1.4%	0%	0.3%	-	0%	0%	0%	0%	0%	-	0.2%
<b>Buses and Single-Unit Trucks</b>	0	1	0	0	1	-	0	0	0	0	0	-	0	3	1	0	4	-	0	0	0	0	0	-	5
<b>% Buses and Single-Unit Trucks</b>	0%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0.4%	1.4%	0%	0.4%	-	0%	0%	0%	0%	0%	-	0.2%
<b>Pedestrians</b>	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
<b>% Pedestrians</b>	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Bicycles on Crosswalk</b>	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-
<b>% Bicycles on Crosswalk</b>	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-

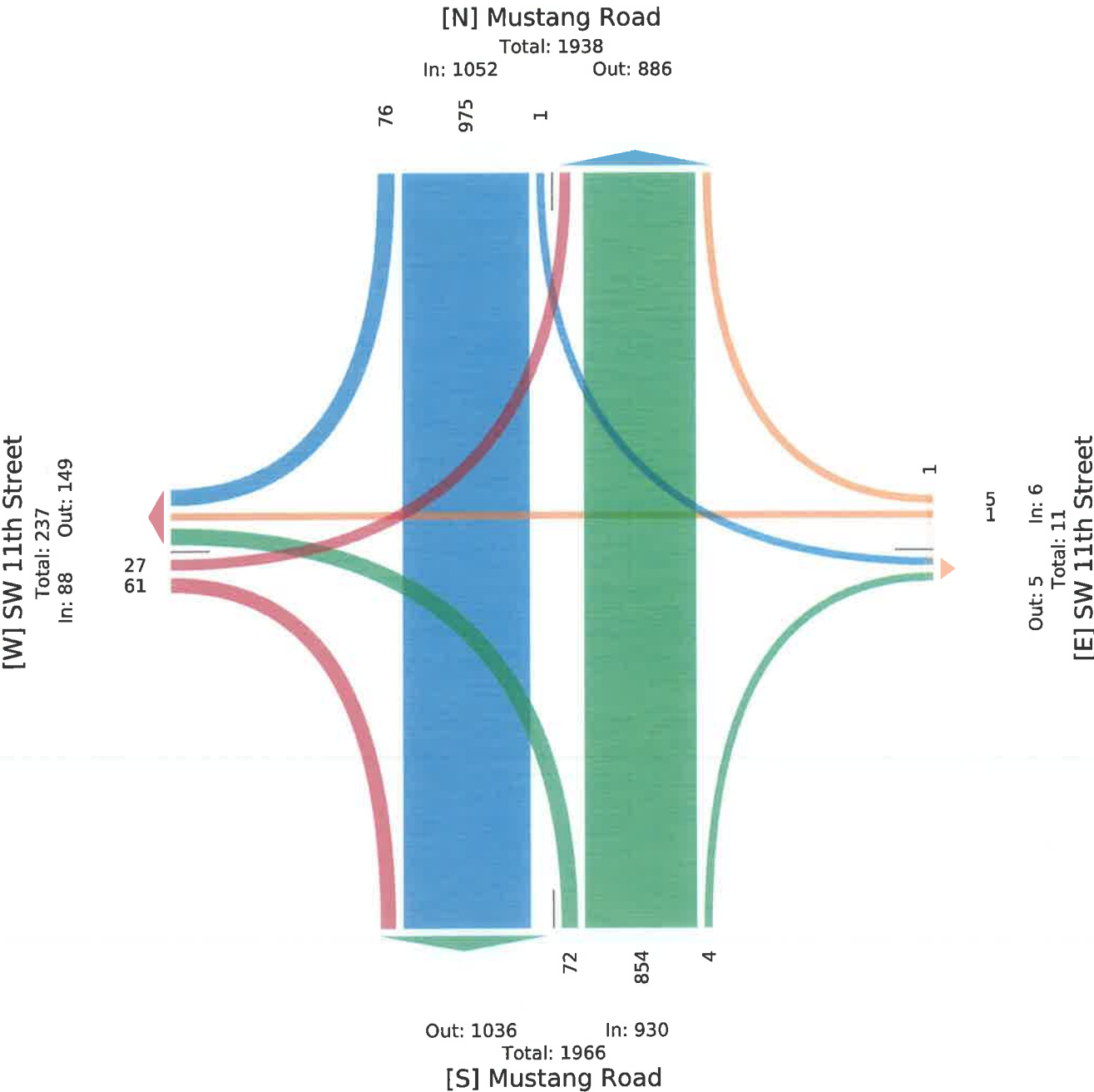
\*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

3. Mustang Road at SW 11th Street - TMC

Thu Nov 2, 2023  
PM Peak (Nov 02 2023 4:45PM - 5:45 PM) - Overall Peak Hour  
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)  
All Movements  
ID: 1128552, Location: 35.454129, -97.724691



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



#### 4. 15th Street at JKT SBFR - TMC

Thu Nov 2, 2023

Full Length (2 PM-12 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1128553, Location: 35.449766, -97.717931



Provided by: C. J. Hensch & Associates  
Inc.

5215 Sycamore Ave.,  
Pasadena, TX, 77503, US

Leg Direction	JKT SBFR Southbound					15th Street Westbound					15th Street Eastbound					
Time	R	L	U	App	Ped*	R	T	U	App	Ped*	T	L	U	App	Ped*	Int
2023-11-02 2:00PM	52	15	0	67	0	0	47	0	47	0	98	0	0	98	0	212
2:15PM	74	15	0	89	0	0	42	1	43	0	97	0	0	97	0	229
2:30PM	67	9	0	76	0	0	88	0	88	0	89	0	0	89	0	253
2:45PM	67	6	0	73	0	0	92	0	92	0	103	0	0	103	0	268
Hourly Total	260	45	0	305	0	0	269	1	270	0	387	0	0	387	0	962
3:00PM	68	13	0	81	0	0	57	0	57	0	92	0	0	92	0	230
3:15PM	79	28	0	107	0	0	49	0	49	0	117	0	0	117	0	273
3:30PM	102	15	0	117	0	0	82	0	82	0	92	0	0	92	0	291
3:45PM	103	12	0	115	0	0	85	0	85	0	105	0	0	105	0	305
Hourly Total	352	68	0	420	0	0	273	0	273	0	406	0	0	406	0	1099
4:00PM	101	21	0	122	0	0	64	0	64	0	97	0	0	97	0	283
4:15PM	144	34	0	178	0	1	59	1	61	0	103	0	0	103	0	342
4:30PM	132	18	0	150	0	0	54	0	54	0	132	0	0	132	0	336
4:45PM	152	49	0	201	0	1	65	0	66	0	115	0	0	115	0	382
Hourly Total	529	122	0	651	0	2	242	1	245	0	447	0	0	447	0	1343
5:00PM	146	32	0	178	0	0	68	0	68	0	120	0	0	120	0	366
5:15PM	164	42	0	206	0	0	80	0	80	0	111	1	0	112	0	398
5:30PM	138	48	0	186	0	1	63	0	64	0	127	2	0	129	0	379
5:45PM	119	26	0	145	0	0	61	0	61	0	88	1	0	89	0	295
Hourly Total	567	148	0	715	0	1	272	0	273	0	446	4	0	450	0	1438
6:00PM	105	22	0	127	0	0	63	0	63	0	108	0	0	108	0	298
6:15PM	96	18	0	114	0	0	68	0	68	0	106	0	0	106	0	288
6:30PM	82	12	0	94	0	0	43	0	43	0	112	0	0	112	0	249
6:45PM	74	18	0	92	0	0	36	0	36	0	101	0	0	101	0	229
Hourly Total	357	70	0	427	0	0	210	0	210	0	427	0	0	427	0	1064
7:00PM	59	9	0	68	0	0	56	0	56	0	96	0	0	96	0	220
7:15PM	69	19	0	88	0	0	39	0	39	0	70	0	0	70	0	197
7:30PM	52	11	0	63	0	0	37	0	37	0	58	0	0	58	0	158
7:45PM	62	10	0	72	0	0	28	0	28	0	63	0	0	63	0	163
Hourly Total	242	49	0	291	0	0	160	0	160	0	287	0	0	287	0	738
8:00PM	59	11	0	70	0	0	41	0	41	0	63	0	0	63	0	174
8:15PM	56	16	0	72	0	0	28	0	28	0	66	0	0	66	0	166
8:30PM	48	8	0	56	0	0	32	0	32	0	37	0	0	37	0	125
8:45PM	43	13	0	56	0	0	17	0	17	0	46	0	0	46	0	119
Hourly Total	206	48	0	254	0	0	118	0	118	0	212	0	0	212	0	584
9:00PM	44	11	0	55	0	0	16	0	16	0	44	0	0	44	0	115
9:15PM	43	10	0	53	0	0	18	0	18	0	38	0	0	38	0	109
9:30PM	33	6	0	39	0	0	16	0	16	0	31	0	0	31	0	86
9:45PM	27	8	0	35	0	0	14	0	14	0	26	0	0	26	0	75
Hourly Total	147	35	0	182	0	0	64	0	64	0	139	0	0	139	0	385
10:00PM	30	8	0	38	0	0	14	0	14	0	24	0	0	24	0	76
10:15PM	29	6	0	35	0	0	9	0	9	0	29	0	0	29	0	73
10:30PM	24	1	0	25	0	0	6	0	6	0	16	0	0	16	0	47
10:45PM	17	5	0	22	0	0	5	0	5	0	17	0	0	17	0	44
Hourly Total	100	20	0	120	0	0	34	0	34	0	86	0	0	86	0	240
11:00PM	18	1	0	19	0	0	8	0	8	0	12	0	0	12	0	39
11:15PM	12	2	0	14	0	0	7	0	7	0	9	0	0	9	0	30
11:30PM	9	1	0	10	0	0	7	0	7	0	13	0	0	13	0	30
11:45PM	9	5	0	14	0	0	3	0	3	0	5	0	0	5	0	22
Hourly Total	48	9	0	57	0	0	25	0	25	0	39	0	0	39	0	121
Total	2808	614	0	3422	0	3	1667	2	1672	0	2876	4	0	2880	0	7974
% Approach	82.1%	17.9%	0%	-	-	0.2%	99.7%	0.1%	-	-	99.9%	0.1%	0%	-	-	-

Leg Direction	JKT SBFR Southbound					15th Street Westbound					15th Street Eastbound					
Time	R	L	U	App	Ped*	R	T	U	App	Ped*	T	L	U	App	Ped*	Int
<b>% Total</b>	35.2%	7.7%	0%	<b>42.9%</b>	-	0%	20.9%	0%	<b>21.0%</b>	-	36.1%	0.1%	0%	<b>36.1%</b>	-	-
<b>Lights</b>	2786	605	0	<b>3391</b>	-	3	1630	2	<b>1635</b>	-	2824	4	0	<b>2828</b>	-	7854
<b>% Lights</b>	99.2%	98.5%	0%	<b>99.1%</b>	-	100%	97.8%	100%	<b>97.8%</b>	-	98.2%	100%	0%	<b>98.2%</b>	-	98.5%
<b>Articulated Trucks</b>	0	8	0	<b>8</b>	-	0	3	0	<b>3</b>	-	5	0	0	<b>5</b>	-	16
<b>% Articulated Trucks</b>	0%	1.3%	0%	<b>0.2%</b>	-	0%	0.2%	0%	<b>0.2%</b>	-	0.2%	0%	0%	<b>0.2%</b>	-	0.2%
<b>Buses and Single-Unit Trucks</b>	22	1	0	<b>23</b>	-	0	34	0	<b>34</b>	-	47	0	0	<b>47</b>	-	104
<b>% Buses and Single-Unit Trucks</b>	0.8%	0.2%	0%	<b>0.7%</b>	-	0%	2.0%	0%	<b>2.0%</b>	-	1.6%	0%	0%	<b>1.6%</b>	-	1.3%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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



#### 4. 15th Street at JKT SBFR - TMC

Thu Nov 2, 2023

Full Length (2 PM-12 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

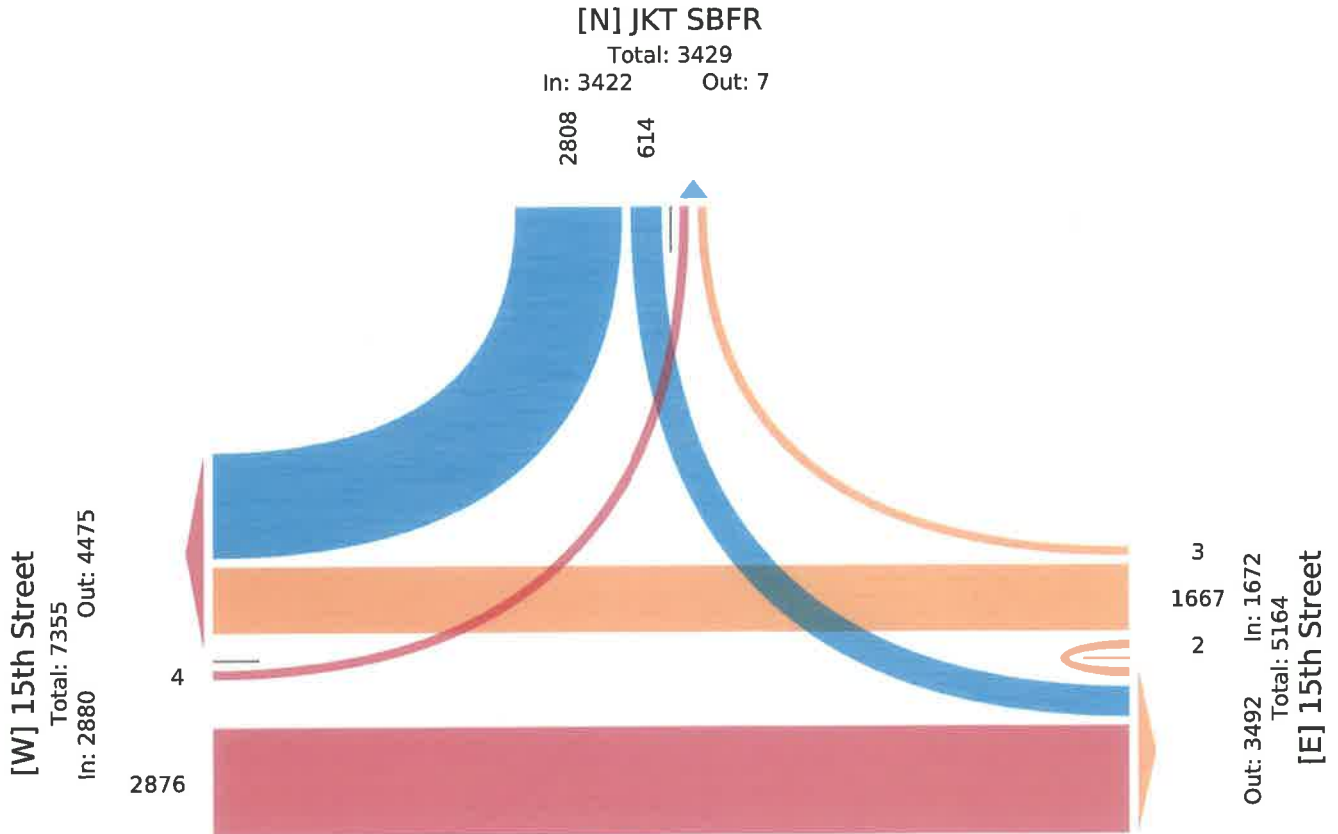
All Movements

ID: 1128553, Location: 35.449766, -97.717931



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#### 4. 15th Street at JKT SBFR - TMC

Thu Nov 2, 2023

PM Peak (Nov 02 2023 4:45PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1128553, Location: 35.449766, -97.717931



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

Leg Direction	JKT SBFR Southbound					15th Street Westbound					15th Street Eastbound					
Time	R	L	U	App	Ped*	R	T	U	App	Ped*	T	L	U	App	Ped*	Int
2023-11-02 4:45PM	152	49	0	201	0	1	65	0	66	0	115	0	0	115	0	362
5:00PM	146	32	0	178	0	0	68	0	68	0	120	0	0	120	0	366
5:15PM	164	42	0	206	0	0	80	0	80	0	111	1	0	112	0	398
5:30PM	138	48	0	186	0	1	63	0	64	0	127	2	0	129	0	379
<b>Total</b>	<b>600</b>	<b>171</b>	<b>0</b>	<b>771</b>	<b>0</b>	<b>2</b>	<b>276</b>	<b>0</b>	<b>278</b>	<b>0</b>	<b>473</b>	<b>3</b>	<b>0</b>	<b>476</b>	<b>0</b>	<b>1525</b>
<b>% Approach</b>	77.8%	22.2%	0%	-	-	0.7%	99.3%	0%	-	-	99.4%	0.6%	0%	-	-	-
<b>% Total</b>	39.3%	11.2%	0%	50.6%	-	0.1%	18.1%	0%	18.2%	-	31.0%	0.2%	0%	31.2%	-	-
<b>PHF</b>	0.915	0.872	-	0.936	-	0.500	0.863	-	0.869	-	0.931	0.375	-	0.922	-	0.958
<b>Lights</b>	595	168	0	763	-	2	275	0	277	-	470	3	0	473	-	1513
<b>% Lights</b>	99.2%	98.2%	0%	99.0%	-	100%	99.6%	0%	99.6%	-	99.4%	100%	0%	99.4%	-	99.2%
<b>Articulated Trucks</b>	0	2	0	2	-	0	0	0	0	-	0	0	0	0	-	2
<b>% Articulated Trucks</b>	0%	1.2%	0%	0.3%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0.1%
<b>Buses and Single-Unit Trucks</b>	5	1	0	6	-	0	1	0	1	-	3	0	0	3	-	10
<b>% Buses and Single-Unit Trucks</b>	0.8%	0.6%	0%	0.8%	-	0%	0.4%	0%	0.4%	-	0.6%	0%	0%	0.6%	-	0.7%
<b>Pedestrians</b>	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
<b>% Pedestrians</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Bicycles on Crosswalk</b>	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
<b>% Bicycles on Crosswalk</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

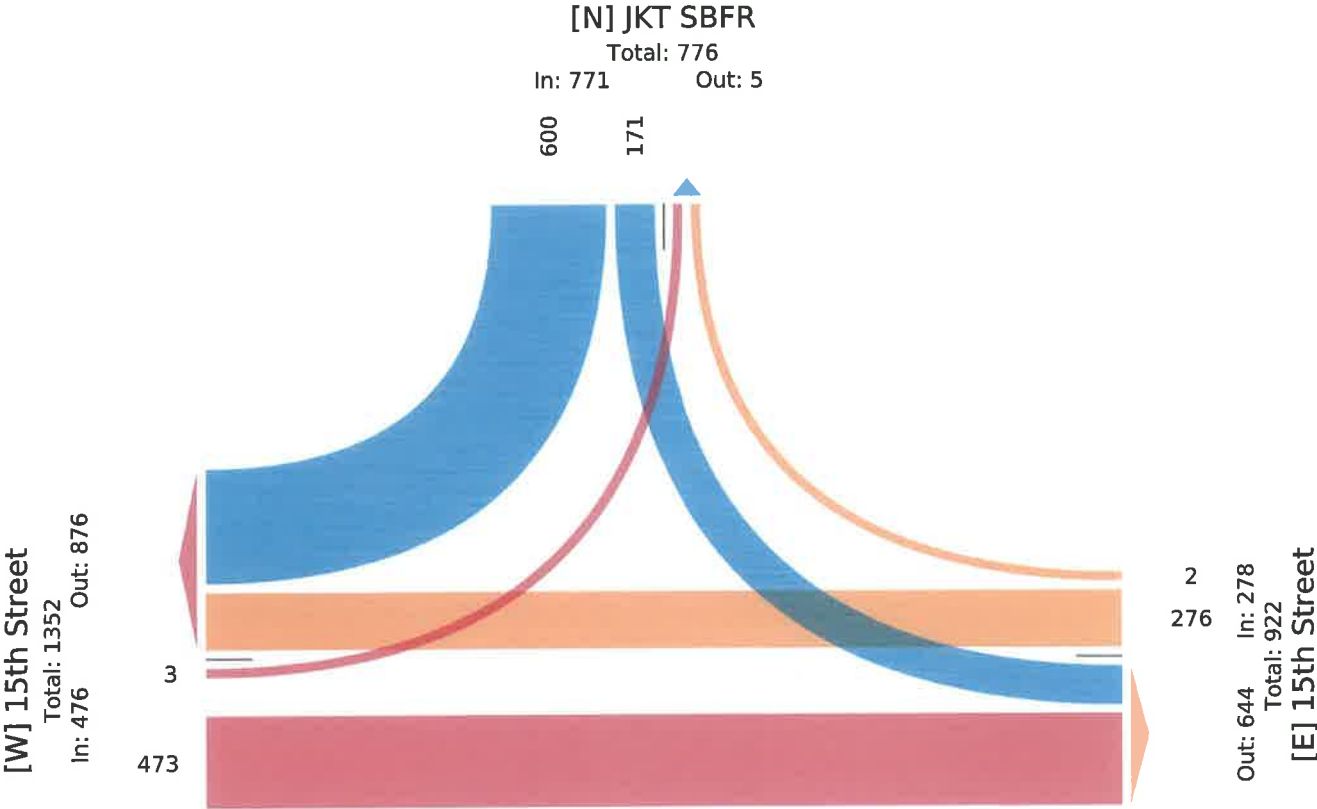
\*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

4. 15th Street at JKT SBFR - TMC

Thu Nov 2, 2023  
PM Peak (Nov 02 2023 4:45PM - 5:45 PM) - Overall Peak Hour  
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians,  
Bicycles on Crosswalk)  
All Movements  
ID: 1128553, Location: 35.449766, -97.717931



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



# 5. 15th Street at JKT NBFR - TMC

Thu Nov 2, 2023

Full Length (2 PM-12 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1128554, Location: 35.449767, -97.716844



Provided by: C. J. Hensch & Associates Inc.

5215 Sycamore Ave.,  
Pasadena, TX, 77503, US

Leg Direction	JKT NBFR Southbound					15th Street Westbound					15th Street Eastbound					
Time	R	L	U	App	Ped*	R	T	U	App	Ped*	T	L	U	App	Ped*	Int
2023-11-02 2:00PM	0	0	0	0	0	9	49	0	58	0	69	49	0	118	0	176
2:15PM	0	0	0	0	0	3	43	0	46	0	63	47	0	110	0	156
2:30PM	0	0	0	0	0	3	83	0	86	0	52	54	0	106	0	192
2:45PM	0	0	0	0	0	6	97	0	103	0	63	44	0	107	0	210
Hourly Total	0	0	0	0	0	21	272	0	293	0	247	194	0	441	0	734
3:00PM	0	0	0	0	0	3	56	0	59	0	59	50	0	109	0	168
3:15PM	0	0	0	0	0	3	50	0	53	0	92	61	0	153	0	206
3:30PM	0	0	0	0	0	8	84	0	92	0	64	52	0	116	0	208
3:45PM	0	0	0	0	0	7	84	0	91	0	67	53	0	120	0	211
Hourly Total	0	0	0	0	0	21	274	0	295	0	282	216	0	498	0	793
4:00PM	0	0	0	0	0	4	65	0	69	0	72	46	0	118	0	187
4:15PM	0	0	0	0	0	5	59	0	64	0	78	64	0	142	0	206
4:30PM	0	0	0	0	0	7	50	0	57	0	76	70	0	146	0	203
4:45PM	0	0	0	0	0	5	65	0	70	0	100	66	0	166	0	236
Hourly Total	0	0	0	0	0	21	239	0	260	0	326	246	0	572	0	832
5:00PM	0	0	0	0	0	13	71	0	84	0	86	65	0	151	0	235
5:15PM	0	0	0	0	0	12	75	0	87	0	84	82	0	166	0	253
5:30PM	0	0	0	0	0	7	67	0	74	0	113	65	0	178	0	252
5:45PM	0	0	0	0	0	7	58	0	65	0	71	53	0	124	0	189
Hourly Total	0	0	0	0	0	39	271	0	310	0	354	265	0	619	0	929
6:00PM	0	0	0	0	0	13	66	0	79	0	80	62	0	142	0	221
6:15PM	0	0	0	0	0	9	67	0	76	0	77	48	0	125	0	201
6:30PM	0	0	0	0	0	12	44	0	56	0	65	64	0	129	0	185
6:45PM	0	0	0	0	0	4	37	0	41	0	87	37	0	124	0	165
Hourly Total	0	0	0	0	0	38	214	0	252	0	309	211	0	520	0	772
7:00PM	0	0	0	0	0	2	57	0	59	0	69	40	0	109	0	168
7:15PM	0	0	0	0	0	7	41	0	48	0	61	38	0	99	0	147
7:30PM	0	0	0	0	0	1	38	0	39	0	44	30	0	74	0	113
7:45PM	0	0	0	0	0	3	27	0	30	0	54	22	0	76	0	106
Hourly Total	0	0	0	0	0	13	163	0	176	0	228	130	0	358	0	534
8:00PM	0	0	0	0	0	2	40	0	42	0	45	28	0	73	0	115
8:15PM	0	0	0	0	0	3	32	0	35	0	50	30	0	80	0	115
8:30PM	0	0	0	0	0	2	32	0	34	0	27	20	0	47	0	81
8:45PM	0	0	0	0	0	4	17	0	21	0	44	14	0	58	0	79
Hourly Total	0	0	0	0	0	11	121	0	132	0	166	92	0	258	0	390
9:00PM	0	0	0	0	0	6	16	0	22	0	32	20	0	52	0	74
9:15PM	0	0	0	0	0	2	18	0	20	0	32	24	0	56	0	76
9:30PM	0	0	0	0	0	3	16	0	19	0	23	11	0	34	0	53
9:45PM	0	0	0	0	0	0	12	0	12	0	27	11	0	38	0	50
Hourly Total	0	0	0	0	0	11	62	0	73	0	114	66	0	180	0	253
10:00PM	0	0	0	0	0	4	15	0	19	0	21	11	0	32	0	51
10:15PM	0	0	0	0	0	1	10	0	11	0	23	13	0	36	0	47
10:30PM	0	0	0	0	0	1	6	0	7	0	9	8	0	17	0	24
10:45PM	0	0	0	0	0	2	4	0	6	0	13	6	0	19	0	25
Hourly Total	0	0	0	0	0	8	35	0	43	0	66	38	0	104	0	147
11:00PM	0	0	0	0	0	0	8	0	8	0	9	5	0	14	0	22
11:15PM	0	0	0	0	0	0	7	0	7	0	6	5	0	11	0	18
11:30PM	0	0	0	0	0	0	7	0	7	0	10	4	0	14	0	21
11:45PM	0	0	0	0	0	0	3	0	3	0	6	5	0	11	0	14
Hourly Total	0	0	0	0	0	0	25	0	25	0	31	19	0	50	0	75
Total	0	0	0	0	0	183	1676	0	1859	0	2123	1477	0	3600	0	5459
% Approach	0%	0%	0%	-	-	9.8%	90.2%	0%	-	-	59.0%	41.0%	0%	-	-	-

Leg Direction	JKT NBFR Southbound						15th Street Westbound						15th Street Eastbound						
Time	R	L	U	App	Ped*		R	T	U	App	Ped*		T	L	U	App	Ped*	Int	
<b>% Total</b>	0%	0%	0%	<b>0%</b>	-		3.4%	30.7%	0%	<b>34.1%</b>	-		38.9%	27.1%	0%	<b>65.9%</b>	-		-
<b>Lights</b>	0	0	0	<b>0</b>	-		180	1642	0	<b>1822</b>	-		2087	1453	0	<b>3540</b>	-		5362
<b>% Lights</b>	0%	0%	0%	-	-		98.4%	98.0%	0%	<b>98.0%</b>	-		98.3%	98.4%	0%	<b>98.3%</b>	-		98.2%
<b>Articulated Trucks</b>	0	0	0	<b>0</b>	-		1	4	0	<b>5</b>	-		5	7	0	<b>12</b>	-		17
<b>% Articulated Trucks</b>	0%	0%	0%	-	-		0.5%	0.2%	0%	<b>0.3%</b>	-		0.2%	0.5%	0%	<b>0.3%</b>	-		0.3%
<b>Buses and Single-Unit Trucks</b>	0	0	0	<b>0</b>	-		2	30	0	<b>32</b>	-		31	17	0	<b>48</b>	-		80
<b>% Buses and Single-Unit Trucks</b>	0%	0%	0%	-	-		1.1%	1.8%	0%	<b>1.7%</b>	-		1.5%	1.2%	0%	<b>1.3%</b>	-		1.5%
Pedestrians	-	-	-	-	0		-	-	-	-	0		-	-	-	-	0		
% Pedestrians	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0		-	-	-	-	0		-	-	-	-	0		
% Bicycles on Crosswalk	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-	-	-

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

5. 15th Street at JKT NBFR - TMC

Thu Nov 2, 2023

Full Length (2 PM-12 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1128554, Location: 35.449767, -97.716844

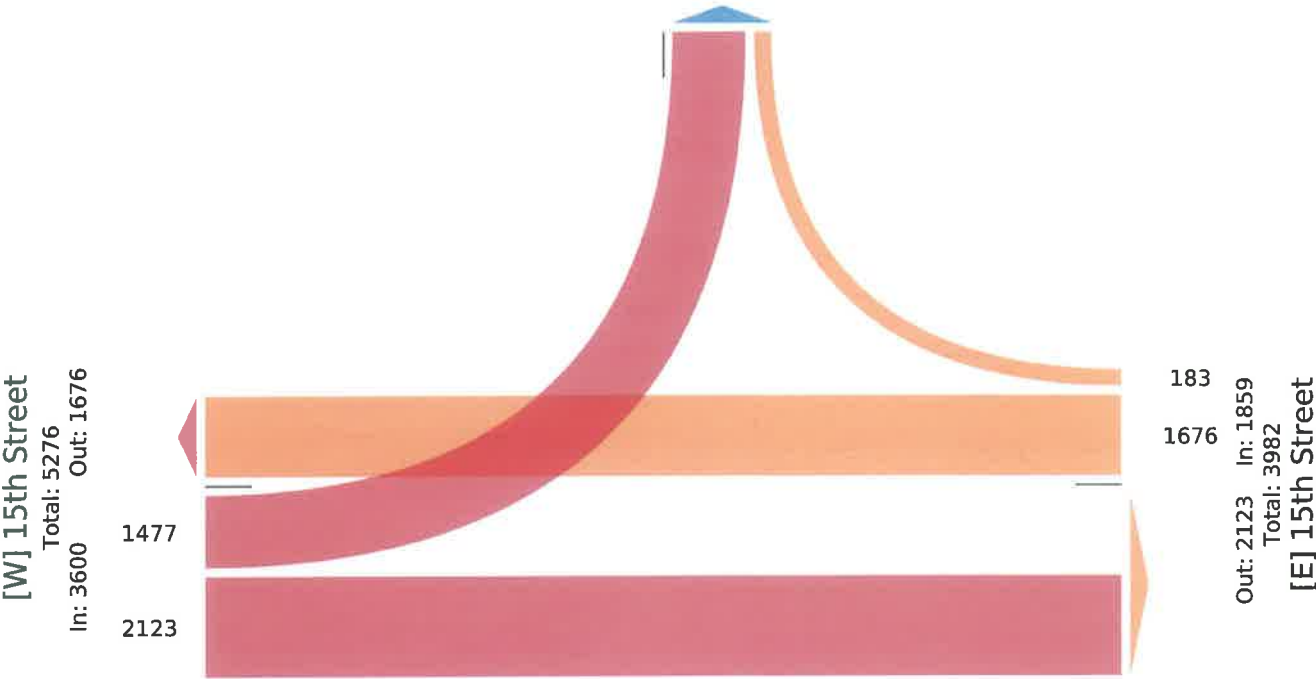


Provided by: C. J. Hensch & Associates Inc.

5215 Sycamore Ave.,  
Pasadena, TX, 77503, US

[N] JKT NBFR

Total: 1660  
In: 0    Out: 1660





## 5. 15th Street at JKT NBFR - TMC

Thu Nov 2, 2023

PM Peak (Nov 02 2023 4:45PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1128554, Location: 35.449767, -97.716844



Provided by: C. J. Hensch & Associates  
Inc.

5215 Sycamore Ave.,  
Pasadena, TX, 77503, US

Leg Direction	JKT NBFR Southbound						15th Street Westbound						15th Street Eastbound						
Time	R	L	U	App	Ped*		R	T	U	App	Ped*		T	L	U	App	Ped*	Int	
2023-11-02 4:45PM	0	0	0	0	0	0	5	65	0	70	0		100	66	0	166	0	236	
5:00PM	0	0	0	0	0	0	13	71	0	84	0		86	65	0	151	0	235	
5:15PM	0	0	0	0	0	0	12	75	0	87	0		84	82	0	166	0	253	
5:30PM	0	0	0	0	0	0	7	67	0	74	0		113	65	0	178	0	252	
Total	0	0	0	0	0	0	37	278	0	315	0		383	278	0	661	0	976	
% Approach	0%	0%	0%	-	-		11.7%	88.3%	0%	-	-		57.9%	42.1%	0%	-	-	-	
% Total	0%	0%	0%	0%	-		3.8%	28.5%	0%	32.3%	-		39.2%	28.5%	0%	67.7%	-	-	
PHF	-	-	-	-	-		0.712	0.927	-	0.905	-		0.847	0.848	-	0.928	-	0.964	
Lights	0	0	0	0	-		37	278	0	315	-		382	275	0	657	-	972	
% Lights	0%	0%	0%	-	-		100%	100%	0%	100%	-		99.7%	98.9%	0%	99.4%	-	99.6%	
Articulated Trucks	0	0	0	0	-		0	0	0	0	-		1	1	0	2	-	2	
% Articulated Trucks	0%	0%	0%	-	-		0%	0%	0%	0%	-		0.3%	0.4%	0%	0.3%	-	0.2%	
Buses and Single-Unit Trucks	0	0	0	0	-		0	0	0	0	-		0	2	0	2	-	2	
% Buses and Single-Unit Trucks	0%	0%	0%	-	-		0%	0%	0%	0%	-		0%	0.7%	0%	0.3%	-	0.2%	
Pedestrians	-	-	-	-	0		-	-	-	-	0		-	-	-	-	0		
% Pedestrians	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-	-	
Bicycles on Crosswalk	-	-	-	-	0		-	-	-	-	0		-	-	-	-	0		
% Bicycles on Crosswalk	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-	-	

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

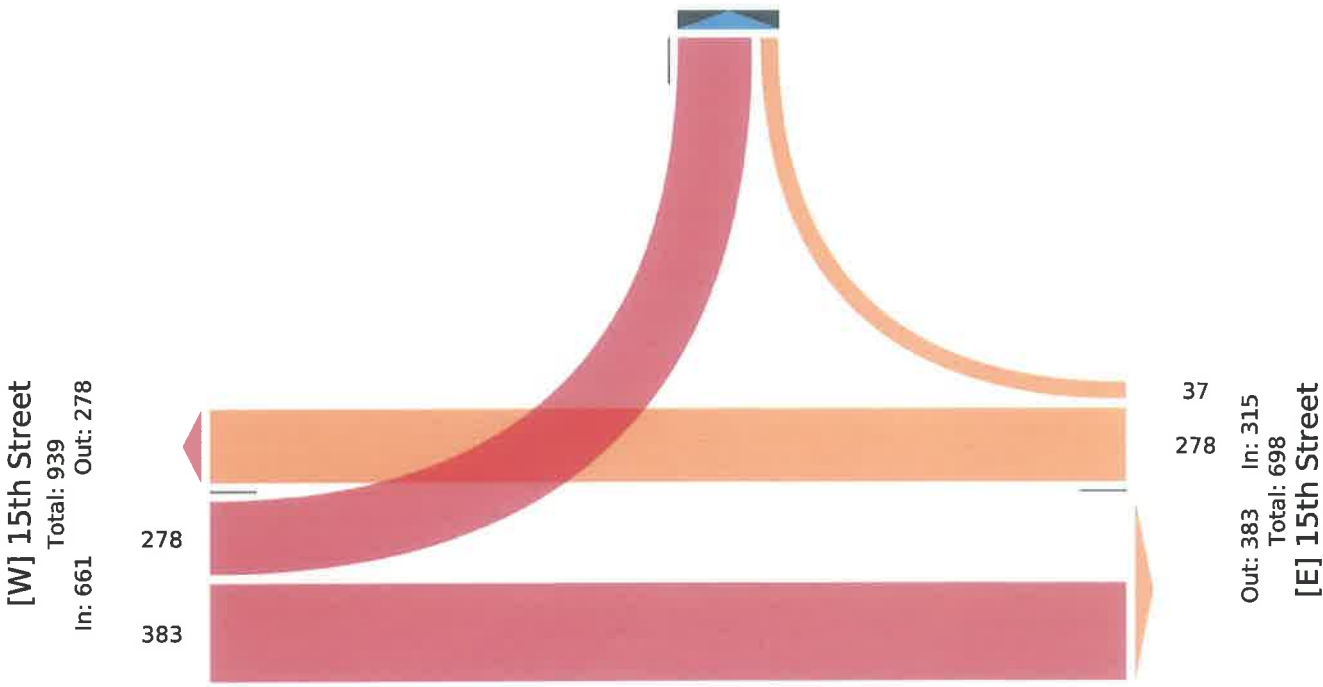
5. 15th Street at JKT NBFR - TMC

Thu Nov 2, 2023  
PM Peak (Nov 02 2023 4:45PM - 5:45 PM) - Overall Peak Hour  
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)  
All Movements  
ID: 1128554, Location: 35.449767, -97.716844



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

[N] JKT NBFR  
Total: 315  
In: 0      Out: 315



## 6. 15th street at Sara Road - TMC

Thu Nov 2, 2023

Full Length (2 PM-12 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1128555, Location: 35.449628, -97.706911



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

Leg Direction	Sara Road Southbound						15th Street Westbound						Sara Road Northbound						15th Street Eastbound						Int
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
2023-11-02 2:00PM	19	22	15	0	56	0	9	38	8	0	55	0	6	19	10	0	35	0	13	46	7	0	66	0	212
2:15PM	5	20	14	0	39	0	15	31	18	0	64	0	16	18	6	0	40	0	15	46	4	0	65	0	208
2:30PM	22	22	19	0	63	0	14	65	12	0	91	0	18	23	3	0	44	0	16	41	6	0	63	0	261
2:45PM	3	23	12	0	38	0	8	39	18	0	65	0	21	28	8	0	57	0	10	52	9	0	71	0	231
Hourly Total	49	87	60	0	196	0	46	173	56	0	275	0	61	88	27	0	176	0	54	185	26	0	265	0	912
3:00PM	8	27	20	0	55	0	22	46	14	0	82	0	15	23	6	0	44	0	9	43	8	0	60	0	241
3:15PM	10	26	17	0	53	0	18	47	14	0	79	0	17	25	18	0	60	0	14	49	7	0	70	0	262
3:30PM	3	35	15	0	53	0	13	69	17	0	99	0	12	29	17	0	58	0	24	68	9	0	101	0	311
3:45PM	7	40	16	0	63	0	26	55	20	0	101	0	18	31	12	0	61	0	28	65	11	0	104	0	329
Hourly Total	28	128	68	0	224	0	79	217	65	0	361	0	62	108	53	0	223	0	75	225	35	0	335	0	1143
4:00PM	10	46	21	0	77	0	27	45	19	0	91	0	23	32	5	0	60	0	15	51	12	0	78	0	306
4:15PM	6	36	26	0	68	0	20	55	11	0	86	0	11	27	5	0	43	0	12	52	8	0	72	0	269
4:30PM	7	53	20	0	80	0	17	50	16	0	83	0	20	31	11	0	62	0	9	64	8	0	81	0	306
4:45PM	14	47	17	0	78	0	26	43	10	0	79	1	18	33	10	0	61	0	13	64	7	0	84	0	302
Hourly Total	37	182	84	0	303	0	90	193	56	0	339	1	72	123	31	0	226	0	49	231	35	0	315	0	1183
5:00PM	10	61	22	0	93	0	25	72	17	0	114	0	28	39	12	0	79	0	23	66	6	0	95	0	381
5:15PM	18	49	20	0	87	0	22	71	22	0	115	0	17	47	16	0	80	0	5	61	11	0	77	0	359
5:30PM	9	51	24	0	84	0	31	56	29	0	116	0	20	32	11	0	63	0	15	90	12	0	117	0	380
5:45PM	10	39	18	0	67	0	20	51	18	0	89	0	27	27	7	0	61	0	6	70	7	0	83	0	300
Hourly Total	47	200	84	0	331	0	98	250	86	0	434	0	92	145	46	0	283	0	49	287	36	0	372	0	1420
6:00PM	11	29	18	0	58	0	20	54	18	0	92	0	19	32	10	0	61	0	10	58	8	0	76	0	287
6:15PM	9	32	15	0	56	0	18	55	21	0	94	0	16	29	10	0	55	0	8	57	7	0	72	0	277
6:30PM	7	29	28	0	64	0	14	45	19	0	78	0	9	31	5	0	45	0	12	47	2	0	61	0	248
6:45PM	2	20	18	0	40	0	8	36	16	0	60	0	16	29	5	0	50	0	9	60	10	0	79	0	229
Hourly Total	29	110	79	0	218	0	60	190	74	0	324	0	60	121	30	0	211	0	39	222	27	0	288	0	1041
7:00PM	4	20	17	0	41	0	6	38	5	0	49	0	24	23	8	0	55	0	10	53	10	0	73	0	218
7:15PM	5	20	18	0	43	0	6	30	13	0	49	0	10	16	2	0	28	0	13	46	5	0	64	0	184
7:30PM	9	26	10	0	45	0	3	20	7	0	30	0	8	20	8	0	36	0	4	42	3	0	49	0	160
7:45PM	2	21	10	0	33	0	0	22	7	0	29	0	13	17	3	0	33	0	4	38	8	0	50	0	145
Hourly Total	20	87	55	0	162	0	15	110	32	0	157	0	55	76	21	0	152	0	31	179	26	0	236	0	707
8:00PM	4	7	10	0	21	0	3	32	8	0	43	0	6	18	2	0	26	0	13	31	6	0	50	0	140
8:15PM	3	14	9	0	26	0	7	26	5	0	38	0	10	13	1	0	24	0	7	37	6	0	50	0	138
8:30PM	7	11	12	0	30	0	6	15	5	0	26	0	8	12	5	0	25	0	2	25	4	0	31	0	112
8:45PM	3	11	9	0	23	0	8	13	4	0	25	0	5	9	3	0	17	0	7	28	7	0	42	0	107
Hourly Total	17	43	40	0	100	0	24	86	22	0	132	0	29	52	11	0	92	0	29	121	23	0	173	0	497
9:00PM	3	9	6	0	18	0	4	16	5	0	25	0	2	14	2	0	18	0	5	26	1	0	32	0	93
9:15PM	1	10	6	0	17	0	7	18	5	0	30	0	6	9	0	0	15	0	2	27	7	0	36	0	98
9:30PM	1	4	5	0	10	0	2	13	7	0	22	0	3	6	1	0	10	0	4	15	4	0	23	0	65
9:45PM	0	4	4	0	8	0	5	10	3	0	18	0	3	2	0	0	5	0	6	16	4	0	26	0	57
Hourly Total	5	27	21	0	53	0	18	57	20	0	95	0	14	31	3	0	48	0	17	84	16	0	117	0	313
10:00PM	0	5	4	0	9	0	5	18	2	0	25	0	2	7	0	0	9	0	4	13	2	0	19	0	62
10:15PM	3	4	4	0	11	0	1	7	2	0	10	0	7	5	0	0	12	0	1	23	1	0	25	0	58
10:30PM	0	2	4	0	6	0	2	6	0	0	8	0	1	5	1	0	7	0	1	8	0	0	9	0	30
10:45PM	0	2	0	0	2	0	2	4	2	0	8	0	2	2	2	0	6	0	1	10	3	0	14	0	30
Hourly Total	3	13	12	0	28	0	10	35	6	0	51	0	12	19	3	0	34	0	7	54	6	0	67	0	180
11:00PM	1	3	3	0	7	0	1	6	0	0	7	0	0	1	0	0	1	0	2	5	1	0	8	0	23
11:15PM	1	3	3	0	7	0	1	5	1	0	7	0	0	1	0	0	1	0	1	5	1	0	7	0	22
11:30PM	2	2	2	0	6	0	2	5	1	0	8	0	1	3	0	0	4	0	2	4	2	0	8	0	26
11:45PM	0	2	1	0	3	0	2	2	2	0	6	0	0	1	0	0	1	0	0	7	0	0	7	0	17
Hourly Total	4	10	9	0	23	0	6	18	4	0	28	0	1	6	0	0	7	0	5	21	4	0	30	0	88
Total	239	887	512	0	1638	0	446	1329	421	0	2196	1	458	769	225	0	1452	0	355	1609	234	0	2198	0	7484
% Approach	14.6%	54.2%	31.3%	0%	-	-	20.3%	60.5%	19.2%	0%	-	-	31.5%	53.0%	15.5%	0%	-	-	16.2%	73.2%	10.6%	0%	-	-	-
% Total	3.2%	11.9%	6.8%	0%	21.9%	-	6.0%	17.8%	5.6%	0%	29.3%	-	6.1%	10.3%	3.0%	0%	19.4%	-	4.7%	21.5%	3.1%	0%	29.4%	-	-
Lights	238	861	508	0	1607	-	444	1299	414	0	2157	-	454	744	220	0	1418	-	351	1583	229	0	2163	-	7345
% Lights	99.6%	97.1%	99.2%	0%	98.1%	-	99.6%	97.7%	98.3%	0%	98.2%	-	99.1%	96.7%	97.8%	0%	97.7%	-	98.9%	98.4%	97.9%	0%	98.4%	-	98.1%
Articulated Trucks	0	10	1	0	11	-	0	5	0	0	5	-	0	9	1	0	10	-	0	7	0	0	7	-	33
% Articulated Trucks	0%	1.1%	0.2%	0%	0.7%	-	0%	0.4%	0%	0%	0.2%	-	0%	1.2%	0.4%	0%	0.7%	-	0%	0.4%	0%	0%	0.3%	-	0.4%

Leg Direction	Sara Road Southbound						15th Street Westbound						Sara Road Northbound						15th Street 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
Buses and Single-Unit Trucks	1	16	3	0	20	-	2	25	7	0	34	-	4	16	4	0	24	-	4	19	5	0	28	-	106
% Buses and Single-Unit Trucks	0.4%	1.8%	0.6%	0%	1.2%	-	0.4%	1.9%	1.7%	0%	1.5%	-	0.9%	2.1%	1.8%	0%	1.7%	-	1.1%	1.2%	2.1%	0%	1.3%	-	1.4%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	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

## 6. 15th street at Sara Road - TMC

Thu Nov 2, 2023

Full Length (2 PM-12 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

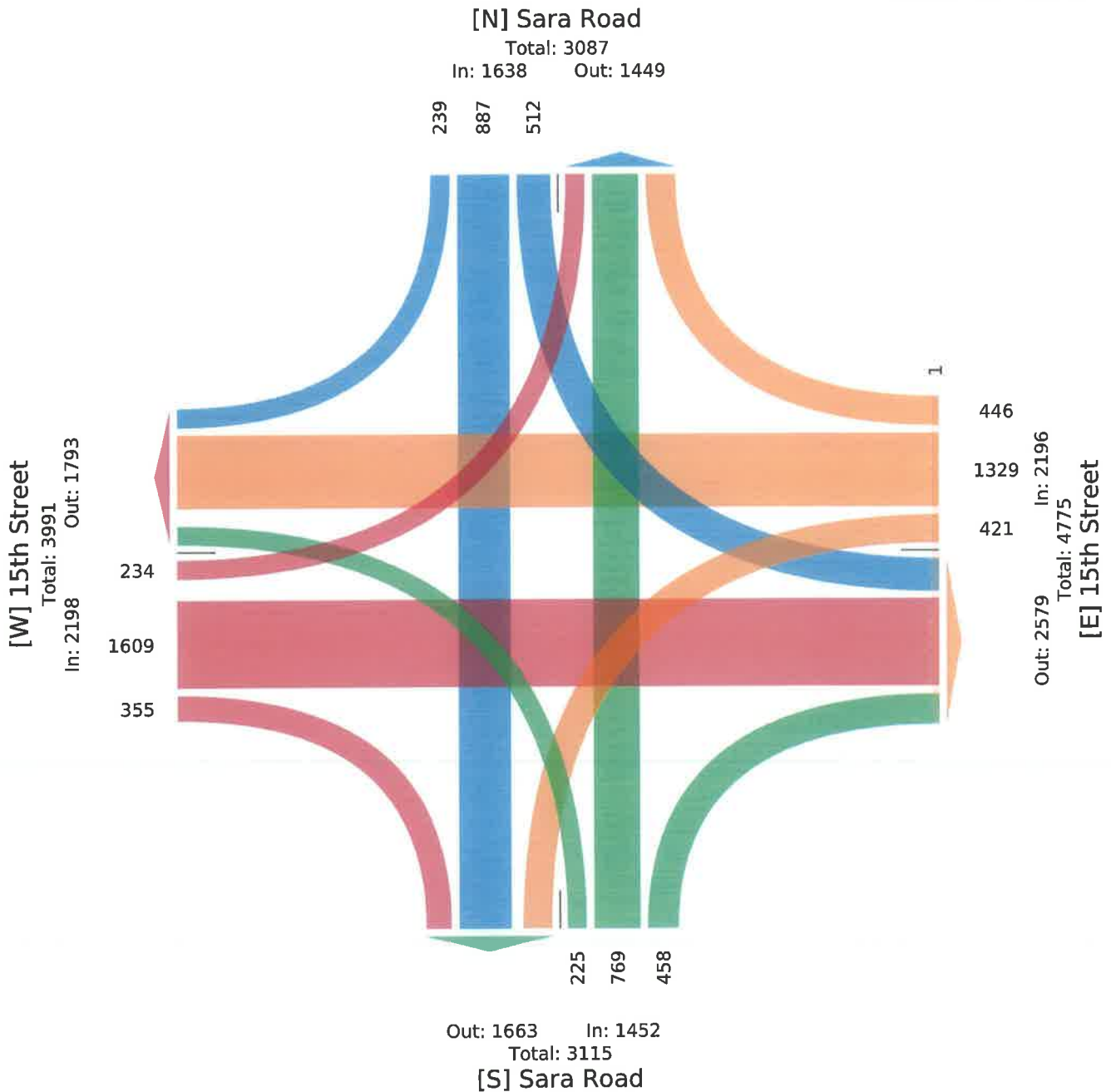
ID: 1128555, Location: 35.449628, -97.706911



Provided by: C. J. Hensch & Associates

Inc.

5215 Sycamore Ave.,  
Pasadena, TX, 77503, US



## 6. 15th street at Sara Road - TMC

Thu Nov 2, 2023

PM Peak (Nov 02 2023 4:45PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1128555, Location: 35.449628, -97.706911



Provided by: C. J. Hensch & Associates Inc.

5215 Sycamore Ave.,  
Pasadena, TX, 77503, US

Leg Direction	Sara Road Southbound						15th Street Westbound						Sara Road Northbound						15th Street 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
2023-11-02 4:45PM	14	47	17	0	78	0	26	43	10	0	79	1	18	33	10	0	61	0	13	64	7	0	84	0	302
5:00PM	10	61	22	0	93	0	25	72	17	0	114	0	28	39	12	0	79	0	23	66	6	0	95	0	381
5:15PM	18	49	20	0	87	0	22	71	22	0	115	0	17	47	16	0	80	0	5	61	11	0	77	0	359
5:30PM	9	51	24	0	84	0	31	56	29	0	116	0	20	32	11	0	63	0	15	90	12	0	117	0	380
<b>Total</b>	51	208	83	0	342	0	104	242	78	0	424	1	83	151	49	0	283	0	56	281	36	0	373	0	1422
<b>% Approach</b>	14.9%	60.8%	24.3%	0%	-	-	24.5%	57.1%	18.4%	0%	-	-	29.3%	53.4%	17.3%	0%	-	-	15.0%	75.3%	9.7%	0%	-	-	-
<b>% Total</b>	3.6%	14.6%	5.8%	0%	24.1%	-	7.3%	17.0%	5.5%	0%	29.8%	-	5.8%	10.6%	3.4%	0%	19.9%	-	3.9%	19.8%	2.5%	0%	26.2%	-	-
<b>PHF</b>	0.708	0.852	0.865	-	0.919	-	0.839	0.840	0.672	-	0.914	-	0.741	0.803	0.766	-	0.884	-	0.609	0.781	0.750	-	0.797	-	0.933
<b>Lights</b>	51	203	83	0	337	-	104	242	78	0	424	-	83	149	49	0	281	-	56	279	36	0	371	-	1413
<b>% Lights</b>	100%	97.6%	100%	0%	98.5%	-	100%	100%	100%	0%	100%	-	100%	98.7%	100%	0%	99.3%	-	100%	99.3%	100%	0%	99.5%	-	99.4%
<b>Articulated Trucks</b>	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	2	0	0	2	-	2
<b>% Articulated Trucks</b>	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0.7%	0%	0%	0.5%	-	0.1%
<b>Buses and Single-Unit Trucks</b>	0	5	0	0	5	-	0	0	0	0	0	-	0	2	0	0	2	-	0	0	0	0	0	-	7
<b>% Buses and Single-Unit Trucks</b>	0%	2.4%	0%	0%	1.5%	-	0%	0%	0%	0%	0%	-	0%	1.3%	0%	0%	0.7%	-	0%	0%	0%	0%	0%	-	0.5%
<b>Pedestrians</b>	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-
<b>% Pedestrians</b>	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Bicycles on Crosswalk</b>	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
<b>% Bicycles on Crosswalk</b>	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	-	-

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



## 6. 15th street at Sara Road - TMC

Thu Nov 2, 2023

PM Peak (Nov 02 2023 4:45PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

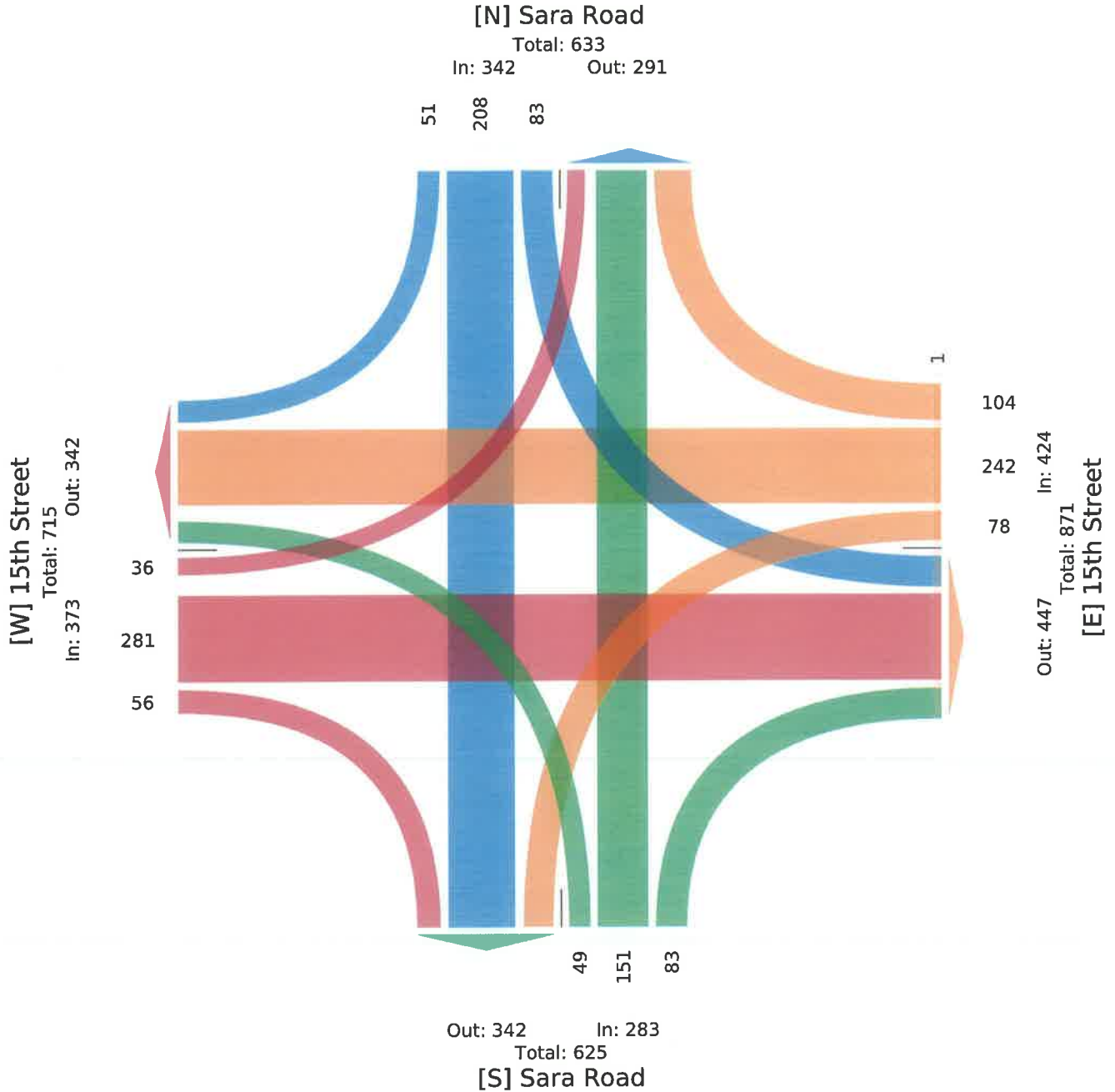
All Movements

ID: 1128555, Location: 35.449628, -97.706911



Provided by: C. J. Hensch & Associates  
Inc.

5215 Sycamore Ave.,  
Pasadena, TX, 77503, US



# 7. 15th Street at Morgan Street - TMC

Thu Nov 2, 2023

Full Length (2 PM-12 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1128556, Location: 35.449646, -97.689248



Provided by: C. J. Hensch & Associates Inc.

5215 Sycamore Ave.,  
Pasadena, TX, 77503, US

Leg Direction	Morgan Road Southbound							15th Street Westbound							Morgan Road Northbound							15th Street 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	
2023-11-02 2:00PM	34	73	14	0	121	0		21	16	1	0	38	0		4	56	23	0	83	0		25	24	26	0	75	0		317
2:15PM	38	64	19	0	121	0		14	11	4	0	29	0		4	68	22	0	94	1		21	15	31	0	67	0		311
2:30PM	36	79	24	0	139	0		18	22	3	0	43	0		6	86	23	0	115	2		20	25	25	0	70	0		367
2:45PM	40	84	11	1	136	0		18	15	6	0	39	0		8	77	31	0	116	0		22	16	31	0	69	0		360
Hourly Total	148	300	68	1	517	0		71	64	14	0	149	0		22	287	99	0	408	3		88	80	113	0	281	0		1355
3:00PM	35	76	13	0	124	0		23	33	5	0	61	0		6	79	37	0	122	0		22	28	25	0	75	0		382
3:15PM	43	101	22	0	166	0		16	27	8	0	51	0		7	72	32	0	111	0		30	15	29	0	74	0		402
3:30PM	43	107	23	0	173	1		27	43	4	0	74	0		6	67	31	0	104	0		43	22	20	0	85	0		436
3:45PM	49	131	25	0	205	0		17	29	8	0	54	0		2	83	34	0	119	0		35	36	16	0	87	0		465
Hourly Total	170	415	83	0	668	1		83	132	25	0	240	0		21	301	134	0	456	0		130	101	90	0	321	0		1685
4:00PM	38	118	17	0	173	0		45	42	15	0	102	0		16	67	37	0	120	0		31	19	32	0	82	0		477
4:15PM	43	149	25	0	217	0		17	28	5	0	50	0		7	71	27	0	105	0		34	23	26	0	83	0		455
4:30PM	57	121	14	0	192	1		26	30	7	0	63	0		6	94	31	0	131	0		31	27	27	0	85	0		471
4:45PM	53	133	25	0	211	1		27	33	10	0	70	0		7	76	37	0	120	0		45	27	29	0	101	0		502
Hourly Total	191	521	81	0	793	2		115	133	37	0	285	0		36	308	132	0	476	0		141	96	114	0	351	0		1905
5:00PM	59	148	29	0	236	0		46	51	14	0	111	0		5	78	33	0	116	0		38	30	23	0	91	0		554
5:15PM	58	138	25	0	221	0		31	53	12	0	96	0		8	84	43	0	135	0		43	36	28	0	107	0		559
5:30PM	71	165	21	0	257	0		17	32	5	0	54	0		4	87	27	0	118	0		55	35	38	0	128	0		557
5:45PM	58	136	20	0	214	0		15	42	7	0	64	0		1	102	29	0	132	0		37	35	24	0	96	0		506
Hourly Total	246	587	95	0	928	0		109	178	38	0	325	0		18	351	132	0	501	0		173	136	113	0	422	0		2176
6:00PM	47	115	19	0	181	0		7	32	4	0	43	0		2	81	33	0	116	0		27	22	29	0	78	0		418
6:15PM	42	105	16	0	163	0		14	33	4	0	51	0		4	61	29	0	94	0		17	19	20	0	56	0		364
6:30PM	41	84	13	0	138	0		13	19	5	0	37	0		1	76	20	0	97	0		33	25	28	0	86	0		358
6:45PM	43	86	10	0	139	0		13	18	8	0	39	0		2	63	19	0	84	0		27	18	31	0	76	0		338
Hourly Total	173	390	58	0	621	0		47	102	21	0	170	0		9	281	101	0	391	0		104	84	108	0	296	0		1478
7:00PM	39	93	11	0	143	0		15	22	1	0	38	0		2	55	21	0	78	1		28	22	25	0	75	0		334
7:15PM	41	88	9	0	138	0		13	8	1	0	22	0		2	43	21	0	66	0		28	20	22	0	70	0		296
7:30PM	30	72	15	0	117	1		7	13	8	0	28	0		2	49	19	0	70	0		21	12	15	0	48	0		263
7:45PM	21	89	8	0	118	0		5	11	3	0	19	0		0	38	17	0	55	0		18	11	13	0	42	0		234
Hourly Total	131	342	43	0	516	1		40	54	13	0	107	0		6	185	78	0	269	1		95	65	75	0	235	0		1127
8:00PM	27	58	17	0	102	0		8	12	5	0	25	0		5	37	16	0	58	0		14	13	4	0	31	0		216
8:15PM	28	90	9	0	127	0		3	14	2	0	19	0		4	24	17	0	45	0		22	10	6	0	38	0		229
8:30PM	19	61	15	0	95	0		6	7	5	0	18	0		2	24	11	0	37	0		14	9	13	0	36	0		186
8:45PM	19	54	12	0	85	0		5	6	4	0	15	0		4	29	12	0	45	0		15	7	13	0	35	0		180
Hourly Total	93	263	53	0	409	0		22	39	16	0	77	0		15	114	56	0	185	0		65	39	36	0	140	0		811
9:00PM	20	53	12	0	85	0		3	8	0	0	11	0		3	22	14	0	39	0		9	9	5	0	23	0		158
9:15PM	21	41	12	0	74	0		8	5	2	0	15	0		4	21	6	0	31	0		18	7	4	0	29	0		149
9:30PM	15	52	9	0	76	1		3	3	0	0	6	0		2	19	8	0	29	0		8	5	11	0	24	0		135
9:45PM	14	33	2	0	49	0		4	6	1	0	11	0		1	8	5	0	14	0		12	9	7	0	28	0		102
Hourly Total	70	179	35	0	284	1		18	22	3	0	43	0		10	70	33	0	113	0		47	30	27	0	104	0		544
10:00PM	12	38	3	0	53	0		4	11	0	0	15	0		0	21	5	0	26	0		7	5	5	0	17	2		111
10:15PM	10	20	4	0	34	0		0	2	0	0	2	0		0	15	3	0	18	0		11	5	9	0	25	0		79
10:30PM	10	19	5	0	34	0		2	6	1	0	9	0		0	9	0	0	9	0		7	6	4	0	17	0		69
10:45PM	4	9	6	0	19	0		1	2	1	0	4	0		1	6	4	0	11	0		6	1	7	0	14	0		48
Hourly Total	36	86	18	0	140	0		7	21	2	0	30	0		1	51	12	0	64	0		31	17	25	0	73	2		307
11:00PM	5	16	2	0	23	0		5	0	0	0	5	0		0	5	5	0	10	0		1	4	5	0	10	0		48
11:15PM	13	23	5	0	41	0		2	4	1	0	7	0		0	3	1	0	4	0		4	2	6	0	12	0		64
11:30PM	4	11	2	0	17	0		0	6	1	0	7	0		0	7	2	0	9	0		2	3	0	0	5	0		38
11:45PM	5	11	3	0	19	0		1	2	0	0	3	0		0	1	1	0	2	0		2	9	2	0	13	0		37
Hourly Total	27	61	12	0	100	0		8	12	2	0	22	0		0	16	9	0	25	0		9	18	13	0	40	0		187
Total	1285	3144	546	1	4976	5		520	757	171	0	1448	0		138	1964	786	0	2888	4		883	666	714	0	2263	2		11575
% Approach	25.8%	63.2%	11.0%	0%	-	-		35.9%	52.3%	11.8%	0%	-	-		4.8%	68.0%	27.2%	0%	-	-		39.0%	29.4%	31.6%	0%	-	-		-
% Total	11.1%	27.2%	4.7%	0%	43.0%	-		4.5%	6.5%	1.5%	0%	12.5%	-		1.2%	17.0%	6.8%	0%	25.0%	-		7.6%	5.8%	6.2%	0%	19.6%	-		-
Lights	1273	3108	499	1	4881	-		470	740	166	0	1376	-																

Leg Direction	Morgan Road Southbound							15th Street Westbound							Morgan Road Northbound							15th Street 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	
% Buses and Single-Unit Trucks	0.7%	0.7%	3.3%	0%	1.0%	-		4.8%	1.7%	2.9%	0%	3.0%	-		10.9%	2.0%	0.9%	0%	2.1%	-		1.6%	2.0%	1.1%	0%	1.5%	-	1.6%	
Pedestrians	-	-	-	-	-	5		-	-	-	-	-	0		-	-	-	-	-	4		-	-	-	-	-	2		
% 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

# 7. 15th Street at Morgan Street - TMC

Thu Nov 2, 2023

Full Length (2 PM-12 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

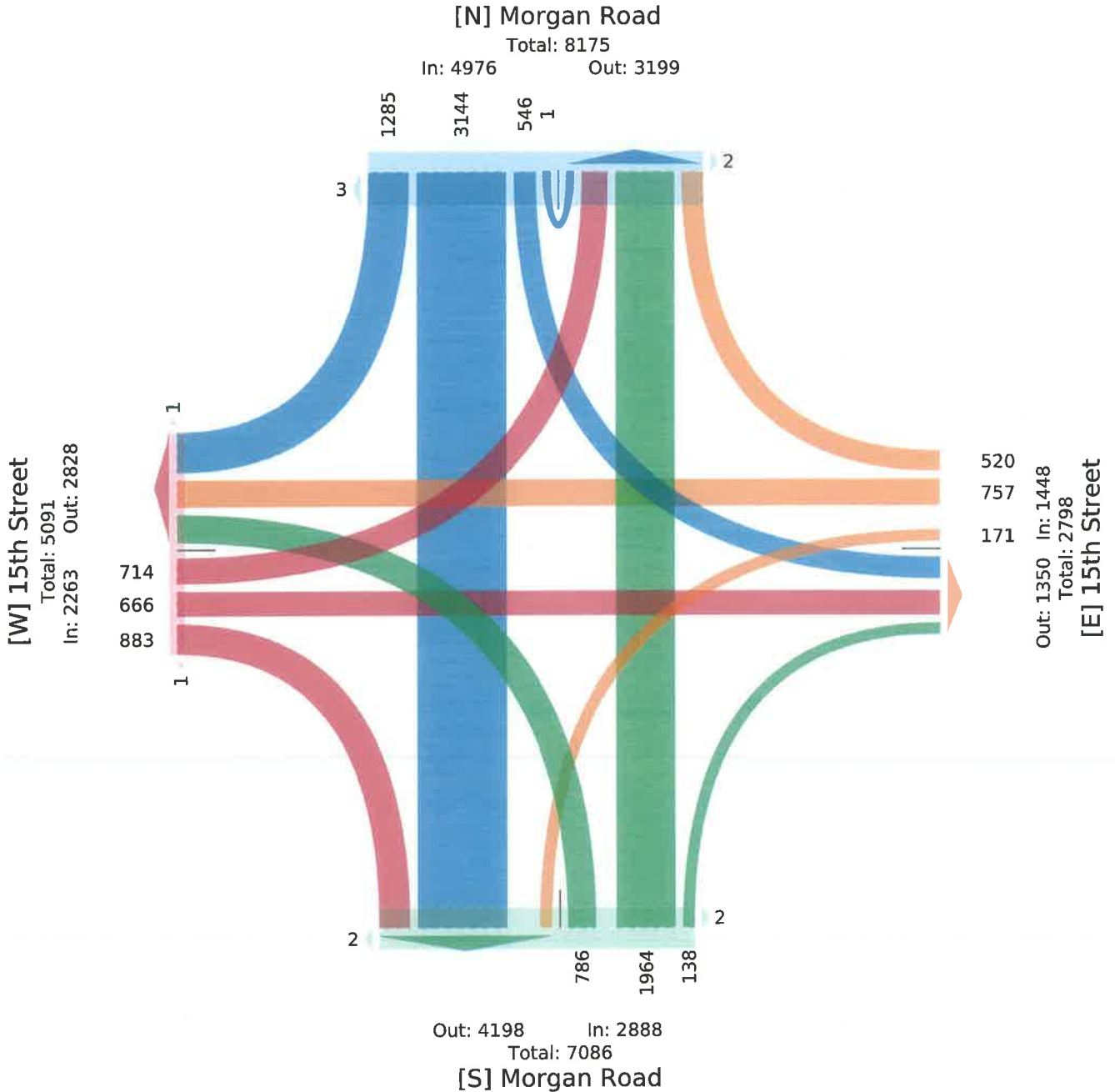
All Movements

ID: 1128556, Location: 35.449646, -97.689248



Provided by: C. J. Hensch & Associates  
Inc.

5215 Sycamore Ave.,  
Pasadena, TX, 77503, US



# 7. 15th Street at Morgan Street - TMC

Thu Nov 2, 2023

PM Peak (Nov 02 2023 5PM - 6 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1128556, Location: 35.449646, -97.689248



Provided by: C. J. Hensch & Associates Inc.

5215 Sycamore Ave.,  
Pasadena, TX, 77503, US

Leg Direction	Morgan Road Southbound						15th Street Westbound						Morgan Road Northbound						15th Street 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
2023-11-02 5:00PM	59	148	29	0	236	0	46	51	14	0	111	0	5	78	33	0	116	0	38	30	23	0	91	0	554
5:15PM	58	138	25	0	221	0	31	53	12	0	96	0	8	84	43	0	135	0	43	36	28	0	107	0	559
5:30PM	71	165	21	0	257	0	17	32	5	0	54	0	4	87	27	0	118	0	55	35	38	0	128	0	557
5:45PM	58	136	20	0	214	0	15	42	7	0	64	0	1	102	29	0	132	0	37	35	24	0	96	0	506
<b>Total</b>	246	587	95	0	928	0	109	178	38	0	325	0	18	351	132	0	501	0	173	136	113	0	422	0	2176
<b>% Approach</b>	26.5%	63.3%	10.2%	0%	-	-	33.5%	54.8%	11.7%	0%	-	-	3.6%	70.1%	26.3%	0%	-	-	41.0%	32.2%	26.8%	0%	-	-	-
<b>% Total</b>	11.3%	27.0%	4.4%	0%	42.6%	-	5.0%	8.2%	1.7%	0%	14.9%	-	0.8%	16.1%	6.1%	0%	23.0%	-	8.0%	6.3%	5.2%	0%	19.4%	-	-
<b>PHF</b>	0.866	0.889	0.819	-	0.903	-	0.592	0.840	0.679	-	0.732	-	0.563	0.860	0.767	-	0.928	-	0.786	0.944	0.743	-	0.824	-	0.973
<b>Lights</b>	246	583	89	0	918	-	102	177	38	0	317	-	17	340	132	0	489	-	172	135	111	0	418	-	2142
<b>% Lights</b>	100%	99.3%	93.7%	0%	98.9%	-	93.6%	99.4%	100%	0%	97.5%	-	94.4%	96.9%	100%	0%	97.6%	-	99.4%	99.3%	98.2%	0%	99.1%	-	98.4%
<b>Articulated Trucks</b>	0	1	3	0	4	-	5	0	0	0	5	-	0	2	0	0	2	-	0	1	0	0	1	-	12
<b>% Articulated Trucks</b>	0%	0.2%	3.2%	0%	0.4%	-	4.6%	0%	0%	0%	1.5%	-	0%	0.6%	0%	0%	0.4%	-	0%	0.7%	0%	0%	0.2%	-	0.6%
<b>Buses and Single-Unit Trucks</b>	0	3	3	0	6	-	2	1	0	0	3	-	1	9	0	0	10	-	1	0	2	0	3	-	22
<b>% Buses and Single-Unit Trucks</b>	0%	0.5%	3.2%	0%	0.6%	-	1.8%	0.6%	0%	0%	0.9%	-	5.6%	2.6%	0%	0%	2.0%	-	0.6%	0%	1.8%	0%	0.7%	-	1.0%
<b>Pedestrians</b>	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
<b>% Pedestrians</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Bicycles on Crosswalk</b>	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
<b>% Bicycles on Crosswalk</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

## 7. 15th Street at Morgan Street - TMC

Thu Nov 2, 2023

PM Peak (Nov 02 2023 5PM - 6 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

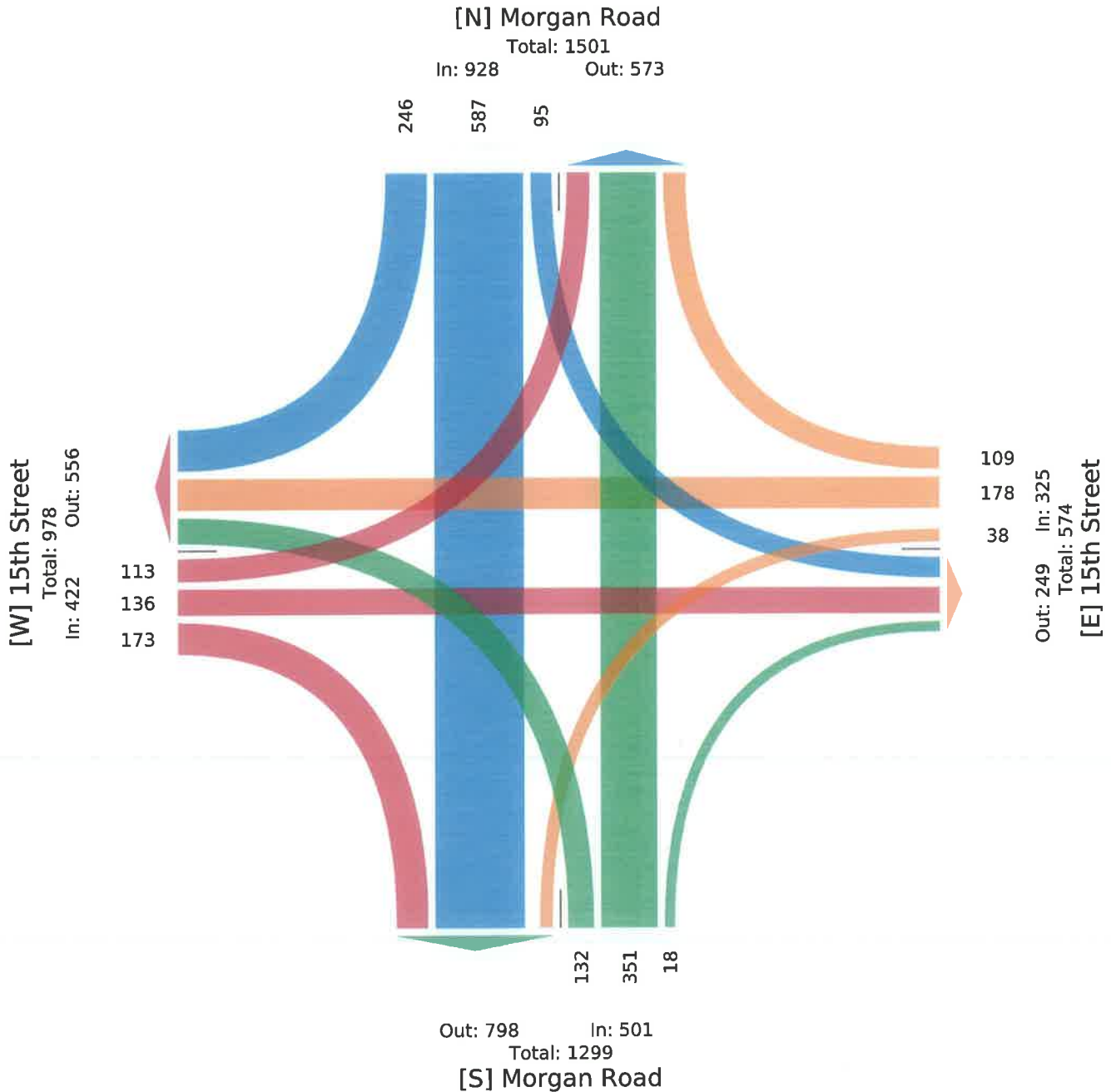
All Movements

ID: 1128556, Location: 35.449646, -97.689248



Provided by: C. J. Hensch & Associates  
Inc.

5215 Sycamore Ave.,  
Pasadena, TX, 77503, US





## 8. Morgan Street at I-40 - TMC

Thu Nov 2, 2023

Full Length (2 PM-12 AM)

All Classes (Vehicles, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1128557, Location: 35.460177, -97.689144



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

Leg Direction	Morgan Road Southbound						I-40 EBFR Westbound						Morgan Road Northbound						I-40 WBFR 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
2023-11-02 2:00PM	28	48	63	0	139	1	85	0	73	0	158	0	88	48	31	0	167	0	43	0	10	0	53	1	517
2:15PM	21	39	39	0	99	1	105	0	73	0	178	0	59	38	42	0	139	0	38	0	13	0	51	0	467
2:30PM	34	46	79	0	159	0	82	0	87	0	169	0	77	40	37	0	154	0	40	0	18	0	58	0	540
2:45PM	27	33	60	0	120	0	72	0	80	0	152	0	70	44	46	0	160	0	40	0	28	0	68	0	500
Hourly Total	110	166	241	0	517	2	344	0	313	0	657	0	294	170	156	0	620	0	161	0	69	0	230	1	2024
3:00PM	44	42	75	0	161	0	76	0	76	0	152	0	64	49	27	0	140	0	40	0	22	0	62	0	515
3:15PM	35	50	71	0	156	2	121	0	95	0	216	1	62	40	38	0	140	0	40	0	23	0	63	0	575
3:30PM	28	41	95	0	164	1	111	0	99	0	210	1	75	63	41	0	179	0	56	0	30	0	86	1	639
3:45PM	25	45	108	0	178	2	115	0	124	0	239	1	49	38	52	0	139	0	59	0	25	0	84	0	640
Hourly Total	132	178	349	0	659	5	423	0	394	0	817	3	250	190	158	0	598	0	195	0	100	0	295	1	2369
4:00PM	45	43	114	0	202	0	77	0	119	0	196	0	67	48	62	0	177	0	46	0	31	0	77	0	652
4:15PM	47	60	74	0	181	0	99	0	125	0	224	0	55	46	44	0	145	0	51	0	22	0	73	0	623
4:30PM	40	50	75	0	165	2	100	0	109	0	209	0	73	36	54	0	163	0	47	0	18	0	65	0	602
4:45PM	32	40	89	0	161	0	87	0	150	0	237	0	61	41	57	0	159	0	52	0	27	0	79	2	636
Hourly Total	164	193	352	0	709	2	363	0	503	0	866	0	256	171	217	0	644	0	196	0	98	0	294	2	2513
5:00PM	57	63	88	0	208	0	121	0	140	0	261	0	82	34	66	0	182	0	56	0	39	0	95	0	746
5:15PM	39	77	48	0	164	0	101	0	148	0	249	0	66	50	63	0	179	0	70	0	27	0	97	0	689
5:30PM	40	48	38	0	126	0	108	0	142	0	250	0	76	36	49	0	161	0	55	0	35	0	90	1	627
5:45PM	28	39	48	0	115	0	83	0	128	0	211	0	72	40	52	0	164	0	49	0	19	0	68	0	558
Hourly Total	164	227	222	0	613	0	413	0	558	0	971	0	296	160	230	0	686	0	230	0	120	0	350	1	2620
6:00PM	29	40	55	0	124	0	66	0	95	0	161	0	75	33	43	0	151	0	64	0	25	0	89	0	525
6:15PM	24	29	46	0	99	0	63	0	101	0	164	0	67	23	52	0	142	0	49	0	24	0	73	0	478
6:30PM	18	36	47	0	101	0	64	0	82	0	146	0	77	30	40	0	147	0	43	0	14	0	57	0	451
6:45PM	24	27	35	0	86	0	46	0	72	0	118	0	58	31	32	0	121	0	55	0	14	0	69	0	394
Hourly Total	95	132	183	0	410	0	239	0	350	0	589	0	277	117	167	0	561	0	211	0	77	0	288	0	1848
7:00PM	13	36	36	0	85	2	45	0	78	0	123	0	55	18	25	0	98	0	34	0	9	0	43	0	349
7:15PM	15	17	50	0	82	0	47	0	77	0	124	0	42	23	30	0	95	0	45	0	8	0	53	0	354
7:30PM	7	20	16	0	43	0	55	0	53	0	108	0	48	24	31	0	103	0	55	0	11	0	66	0	320
7:45PM	9	13	22	0	44	0	47	0	67	0	114	0	29	9	15	0	53	0	47	0	12	0	59	0	270
Hourly Total	44	86	124	0	254	2	194	0	275	0	469	0	174	74	101	0	349	0	181	0	40	0	221	0	1293
8:00PM	11	14	10	0	35	0	50	0	58	0	108	0	40	14	8	0	62	0	40	0	12	0	52	0	257
8:15PM	12	31	20	0	63	0	45	0	68	0	113	0	31	11	16	0	58	0	43	0	9	0	52	0	286
8:30PM	14	14	12	0	40	0	55	0	61	0	116	0	32	19	12	0	63	0	44	0	6	0	50	0	269
8:45PM	15	14	16	0	45	0	55	0	41	0	96	0	42	10	9	0	61	0	45	0	9	0	54	2	256
Hourly Total	52	73	58	0	183	0	205	0	228	0	433	0	145	54	45	0	244	0	172	0	36	0	208	2	1068
9:00PM	15	19	22	0	56	0	38	0	54	0	92	1	32	17	13	0	62	0	36	0	8	0	44	0	254
9:15PM	19	10	22	0	51	0	53	0	55	0	108	0	33	13	7	0	53	0	26	0	8	0	34	0	246
9:30PM	14	15	18	0	47	0	38	0	54	0	92	0	29	5	10	0	44	0	31	0	8	0	39	0	222
9:45PM	12	10	22	0	44	0	24	0	41	0	65	0	20	11	4	0	35	0	11	0	13	0	24	0	168
Hourly Total	60	54	84	0	198	0	153	0	204	0	357	1	114	46	34	0	194	0	104	0	37	0	141	0	890
10:00PM	10	16	16	0	42	0	38	0	37	0	75	0	20	14	11	0	45	0	18	0	9	0	27	0	189
10:15PM	8	4	19	0	31	0	43	0	30	0	73	0	28	12	4	0	44	0	11	0	7	0	18	0	166
10:30PM	12	7	15	0	34	0	34	0	32	0	66	0	13	7	5	0	25	0	11	0	5	0	16	0	141
10:45PM	13	9	11	0	33	0	31	0	10	0	41	1	11	6	1	0	18	0	21	0	6	0	27	0	119
Hourly Total	43	36	61	0	140	0	146	0	109	0	255	1	72	39	21	0	132	0	61	0	27	0	88	0	615
11:00PM	5	15	12	0	32	0	27	0	15	0	42	0	16	11	5	0	32	0	15	0	7	0	22	0	128
11:15PM	7	7	11	0	25	0	21	0	38	0	59	0	19	1	6	0	26	0	10	0	5	0	15	0	125
11:30PM	4	4	15	0	23	0	23	0	15	0	38	0	16	5	2	0	23	0	10	0	2	0	12	0	96
11:45PM	4	5	17	0	26	0	19	0	12	0	31	0	7	5	2	0	14	0	13	0	8	0	21	0	92
Hourly Total	20	31	55	0	106	0	90	0	80	0	170	0	58	22	15	0	95	0	48	0	22	0	70	0	441
Total	884	1176	1729	0	3789	11	2570	0	3014	0	5584	5	1936	1043	1144	0	4123	0	1559	0	626	0	2185	7	15681
% Approach	23.3%	31.0%	45.6%	0%	-	-	46.0%	0%	54.0%	0%	-	-	47.0%	25.3%	27.7%	0%	-	-	71.4%	0%	28.6%	0%	-	-	-
% Total	5.6%	7.5%	11.0%	0%	24.2%	-	16.4%	0%	19.2%	0%	35.6%	-	12.3%	6.7%	7.3%	0%	26.3%	-	9.9%	0%	4.0%	0%	13.9%	-	-
Vehicles	884	1176	1729	0	3789	-	2570	0	3014	0	5584	-	1936	1043	1144	0	4123	-	1559	0	626	0	2185	-	15681
% Vehicles	100%	100%	100%	0%	100%	-	100%	0%	100%	0%	100%	-	100%	100%	100%	0%	100%	-	100%	0%	100%	0%	100%	-	100%
Pedestrians	-	-	-	-	-	11	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	6

Leg	Morgan Road						I-40 EBFR						Morgan Road						I-40 WBFR						
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
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	85.7%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	14.3%	-

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

# 8. Morgan Street at I-40 - TMC

Thu Nov 2, 2023

Full Length (2 PM-12 AM)

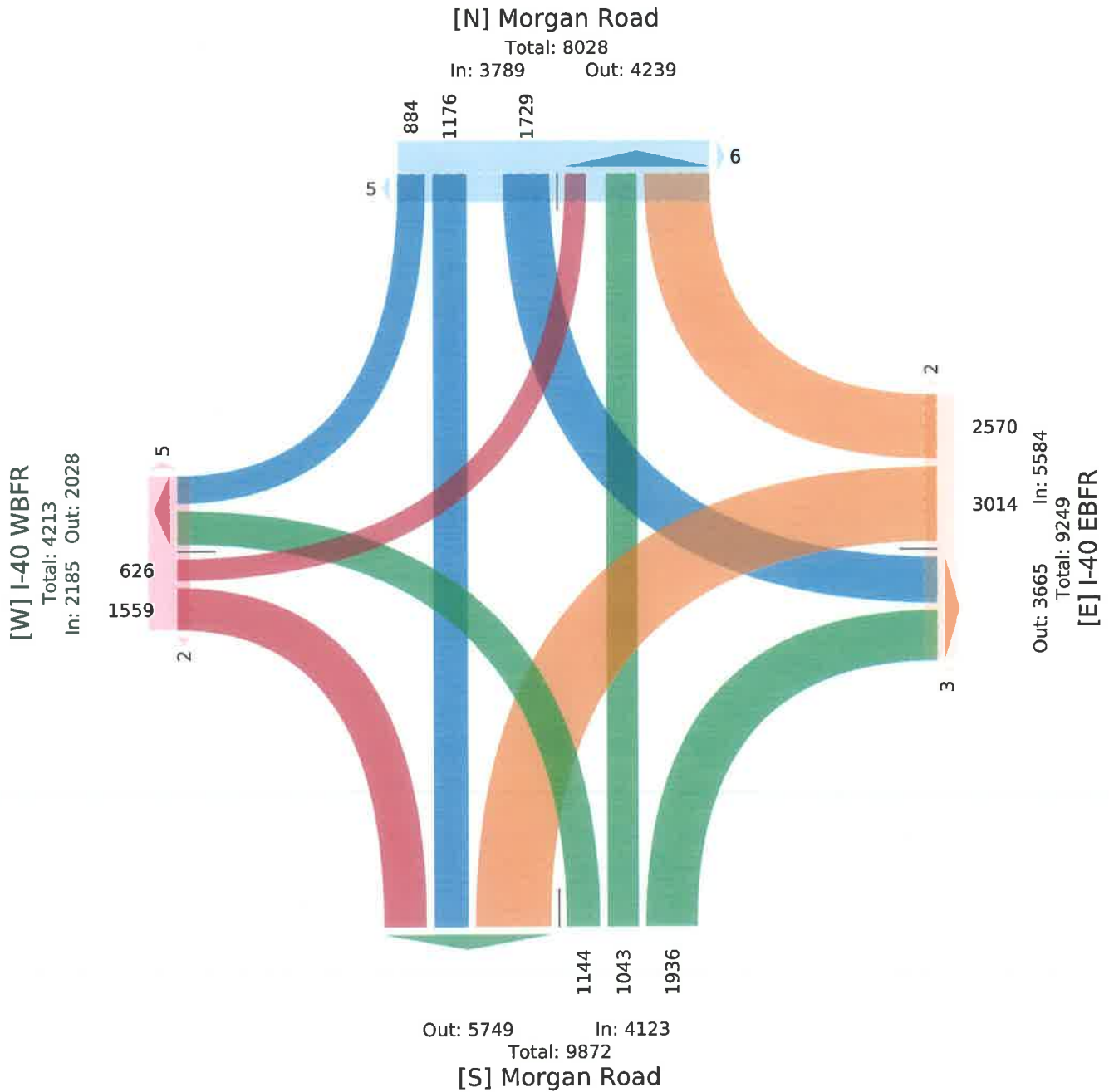
All Classes (Vehicles, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1128557, Location: 35.460177, -97.689144



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



# 8. Morgan Street at I-40 - TMC

Thu Nov 2, 2023

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Vehicles, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1128557, Location: 35.460177, -97.689144



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

Leg	Morgan Road						I-40 EBFR						Morgan Road						I-40 WBFR						
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
2023-11-02 4:45PM	32	40	89	0	161	0	87	0	150	0	237	0	61	41	57	0	159	0	52	0	27	0	79	2	636
5:00PM	57	63	88	0	208	0	121	0	140	0	261	0	82	34	66	0	182	0	56	0	39	0	95	0	746
5:15PM	39	77	48	0	164	0	101	0	148	0	249	0	66	50	63	0	179	0	70	0	27	0	97	0	689
5:30PM	40	48	38	0	126	0	108	0	142	0	250	0	76	36	49	0	161	0	55	0	35	0	90	1	627
<b>Total</b>	168	228	263	0	659	0	417	0	580	0	997	0	285	161	235	0	681	0	233	0	128	0	361	3	2698
<b>% Approach</b>	25.5%	34.6%	39.9%	0%	-	-	41.8%	0%	58.2%	0%	-	-	41.9%	23.6%	34.5%	0%	-	-	64.5%	0%	35.5%	0%	-	-	-
<b>% Total</b>	6.2%	8.5%	9.7%	0%	24.4%	-	15.5%	0%	21.5%	0%	37.0%	-	10.6%	6.0%	8.7%	0%	25.2%	-	8.6%	0%	4.7%	0%	13.4%	-	-
<b>PHF</b>	0.737	0.740	0.739	-	0.792	-	0.862	-	0.967	-	0.955	-	0.869	0.805	0.890	-	0.935	-	0.832	-	0.821	-	0.930	-	0.904
<b>Vehicles</b>	168	228	263	0	659	-	417	0	580	0	997	-	285	161	235	0	681	-	233	0	128	0	361	-	2698
<b>% Vehicles</b>	100%	100%	100%	0%	100%	-	100%	0%	100%	0%	100%	-	100%	100%	100%	0%	100%	-	100%	0%	100%	0%	100%	-	100%
<b>Pedestrians</b>	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	-
<b>% Pedestrians</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%
<b>Bicycles on Crosswalk</b>	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
<b>% Bicycles on Crosswalk</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-

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

# 8. Morgan Street at I-40 - TMC

Thu Nov 2, 2023

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

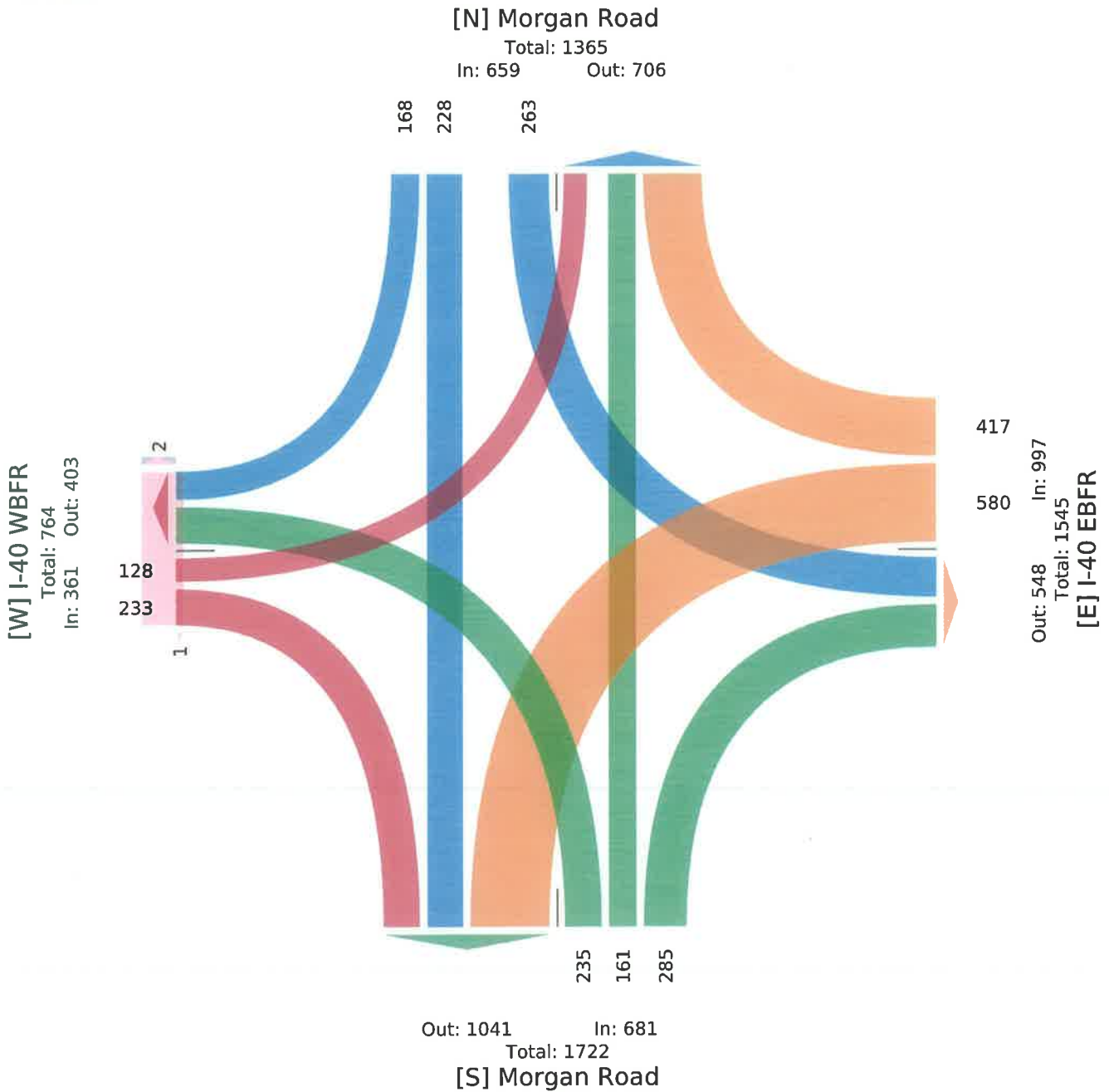
All Classes (Vehicles, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1128557, Location: 35.460177, -97.689144



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
























## **Appendix C:** ***Synchro* Reports**























# HCM 6th Signalized Intersection Summary 401: Morgan Rd & Reno Ave

11/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	120	164	128	376	100	184	304	48	20	208	52
Future Volume (veh/h)	48	120	164	128	376	100	184	304	48	20	208	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	56	141	193	151	442	118	216	358	56	24	245	61
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	74	319	284	192	683	181	252	1196	533	40	614	150
Arrive On Green	0.04	0.18	0.18	0.11	0.25	0.25	0.14	0.34	0.34	0.02	0.22	0.22
Sat Flow, veh/h	1781	1777	1585	1781	2779	736	1781	3554	1585	1781	2832	691
Grp Volume(v), veh/h	56	141	193	151	281	279	216	358	56	24	152	154
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1738	1781	1777	1585	1781	1777	1746
Q Serve(g_s), s	1.8	4.0	6.4	4.7	8.0	8.1	6.7	4.2	1.4	0.8	4.1	4.3
Cycle Q Clear(g_c), s	1.8	4.0	6.4	4.7	8.0	8.1	6.7	4.2	1.4	0.8	4.1	4.3
Prop In Lane	1.00		1.00	1.00		0.42	1.00		1.00	1.00		0.40
Lane Grp Cap(c), veh/h	74	319	284	192	437	427	252	1196	533	40	386	379
V/C Ratio(X)	0.76	0.44	0.68	0.79	0.64	0.65	0.86	0.30	0.11	0.61	0.39	0.41
Avail Cap(c_a), veh/h	252	944	842	252	551	539	252	1196	533	252	598	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	20.7	21.6	24.6	19.1	19.1	23.7	13.8	12.9	27.4	18.9	19.0
Incr Delay (d2), s/veh	14.6	1.0	2.8	11.5	1.7	1.9	24.0	0.6	0.4	14.0	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.5	2.3	2.3	2.9	2.9	4.1	1.5	0.5	0.4	1.5	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.4	21.6	24.5	36.0	20.8	21.0	47.6	14.5	13.3	41.4	19.6	19.7
LnGrp LOS	D	C	C	D	C	C	D	B	B	D	B	B
Approach Vol, veh/h	390			711				630			330	
Approach Delay, s/veh	25.9			24.1				25.7			21.2	
Approach LOS	C			C				C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	17.3	7.3	18.9	6.3	24.0	11.1	15.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	8.0	19.0	8.0	17.5	8.0	19.0	8.0	30.0				
Max Q Clear Time (g_c+I1), s	8.7	6.3	3.8	10.1	2.8	6.2	6.7	8.4				
Green Ext Time (p_c), s	0.0	1.2	0.0	1.8	0.0	1.8	0.0	1.8				
Intersection Summary												
HCM 6th Ctrl Delay	24.5											
HCM 6th LOS	C											

HCM 6th Signalized Intersection Summary  
403: Morgan Rd & SW 15th St





















11/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	140	220	20	128	68	108	348	16	84	660	284
Future Volume (veh/h)	152	140	220	20	128	68	108	348	16	84	660	284
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	179	165	259	24	151	80	127	409	19	99	776	334
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	205	334	298	32	207	104	152	1936	90	123	1315	565
Arrive On Green	0.12	0.19	0.19	0.02	0.09	0.09	0.09	0.56	0.56	0.07	0.54	0.54
Sat Flow, veh/h	1781	1777	1585	1781	2288	1152	1781	3458	160	1781	2420	1040
Grp Volume(v), veh/h	179	165	259	24	115	116	127	210	218	99	569	541
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1663	1781	1777	1842	1781	1777	1683
Q Serve(g_s), s	12.8	10.8	20.6	1.7	8.2	8.8	9.1	7.7	7.7	7.1	28.0	28.1
Cycle Q Clear(g_c), s	12.8	10.8	20.6	1.7	8.2	8.8	9.1	7.7	7.7	7.1	28.0	28.1
Prop In Lane	1.00		1.00	1.00		0.69	1.00		0.09	1.00		0.62
Lane Grp Cap(c), veh/h	205	334	298	32	161	151	152	995	1031	123	965	914
V/C Ratio(X)	0.87	0.49	0.87	0.76	0.72	0.77	0.83	0.21	0.21	0.81	0.59	0.59
Avail Cap(c_a), veh/h	260	472	421	110	321	301	206	995	1031	192	965	914
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.78	0.78	1.00	1.00	1.00	1.00	1.00	1.00	0.82	0.82	0.82
Uniform Delay (d), s/veh	56.6	47.2	51.2	63.6	57.5	57.8	58.5	14.3	14.3	59.7	20.0	20.0
Incr Delay (d2), s/veh	18.0	0.9	10.5	29.8	5.8	7.9	19.0	0.5	0.5	10.8	2.2	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	4.8	8.8	1.0	3.9	4.0	4.8	3.1	3.2	3.5	11.6	11.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.6	48.1	61.7	93.3	63.3	65.6	77.6	14.8	14.8	70.5	22.1	22.3
LnGrp LOS	E	D	E	F	E	E	E	B	B	E	C	C
Approach Vol, veh/h	603				255				555			
Approach Delay, s/veh	61.8				67.2				29.1			
Approach LOS	E				E				C			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.1	76.6	20.0	17.3	13.9	78.8	7.3	30.0				
Change Period (Y+Rc), s	5.0	6.0	5.0	5.5	5.0	6.0	5.0	5.5				
Max Green Setting (Gmax), s	15.0	51.0	19.0	23.5	14.0	52.0	8.0	34.5				
Max Q Clear Time (g_c+I1), s	11.1	30.1	14.8	10.8	9.1	9.7	3.7	22.6				
Green Ext Time (p_c), s	0.1	7.3	0.2	0.9	0.1	2.4	0.0	1.8				
Intersection Summary												
HCM 6th Ctrl Delay	39.0											
HCM 6th LOS	D											























HCM 6th Signalized Intersection Summary  
575: Sara Rd & Reno Ave

11/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	132	120	40	560	48	152	176	24	56	220	196
Future Volume (veh/h)	76	132	120	40	560	48	152	176	24	56	220	196
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	155	141	47	659	56	179	207	28	66	259	231
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	116	535	453	63	873	74	226	903	121	85	375	323
Arrive On Green	0.07	0.29	0.29	0.04	0.26	0.26	0.13	0.29	0.29	0.05	0.21	0.21
Sat Flow, veh/h	1781	1825	1544	1781	3315	281	1781	3151	421	1781	1811	1556
Grp Volume(v), veh/h	89	151	145	47	353	362	179	116	119	66	254	236
Grp Sat Flow(s),veh/h/ln	1781	1777	1592	1781	1777	1820	1781	1777	1795	1781	1777	1590
Q Serve(g_s), s	3.1	4.2	4.5	1.7	11.6	11.7	6.2	3.2	3.2	2.3	8.4	8.8
Cycle Q Clear(g_c), s	3.1	4.2	4.5	1.7	11.6	11.7	6.2	3.2	3.2	2.3	8.4	8.8
Prop In Lane	1.00		0.97	1.00		0.15	1.00		0.23	1.00		0.98
Lane Grp Cap(c), veh/h	116	521	467	63	468	479	226	509	514	85	368	330
V/C Ratio(X)	0.77	0.29	0.31	0.74	0.75	0.76	0.79	0.23	0.23	0.78	0.69	0.72
Avail Cap(c_a), veh/h	419	710	636	419	710	727	419	696	703	419	696	623
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.3	17.4	17.5	30.5	21.6	21.6	27.0	17.4	17.4	30.0	23.4	23.5
Incr Delay (d2), s/veh	10.0	0.3	0.4	15.8	2.5	2.4	6.1	0.2	0.2	13.9	2.3	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	1.5	1.5	0.9	4.5	4.6	2.8	1.2	1.2	1.3	3.4	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.3	17.7	17.9	46.3	24.1	24.1	33.1	17.6	17.6	44.0	25.7	26.5
LnGrp LOS	D	B	B	D	C	C	C	B	B	D	C	C
Approach Vol, veh/h	385			762			414			556		
Approach Delay, s/veh	22.8			25.4			24.3			28.2		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.1	19.2	9.2	22.3	8.0	24.3	7.3	24.2				
Change Period (Y+Rc), s	5.0	6.0	5.0	5.5	5.0	* 6	5.0	5.5				
Max Green Setting (Gmax), s	15.0	25.0	15.0	25.5	15.0	* 25	15.0	25.5				
Max Q Clear Time (g_c+I1), s	8.2	10.8	5.1	13.7	4.3	5.2	3.7	6.5				
Green Ext Time (p_c), s	0.2	2.4	0.1	3.1	0.1	1.1	0.0	1.4				
Intersection Summary												
HCM 6th Ctrl Delay	25.5											
HCM 6th LOS	C											
Notes												

HCM 6th Signalized Intersection Summary  
576: Sara Rd & SW 15th St










11/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	360	60	116	224	124	44	128	80	96	204	36
Future Volume (veh/h)	48	360	60	116	224	124	44	128	80	96	204	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	56	424	71	136	264	146	52	151	94	113	240	42
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	295	587	98	302	534	286	464	390	243	501	601	105
Arrive On Green	0.04	0.19	0.19	0.08	0.24	0.24	0.04	0.36	0.36	0.06	0.39	0.39
Sat Flow, veh/h	1781	3049	507	1781	2234	1198	1781	1078	671	1781	1550	271
Grp Volume(v), veh/h	56	246	249	136	208	202	52	0	245	113	0	282
Grp Sat Flow(s),veh/h/ln	1781	1777	1779	1781	1777	1655	1781	0	1750	1781	0	1822
Q Serve(g_s), s	1.8	9.5	9.6	4.4	7.4	7.7	1.3	0.0	7.6	2.9	0.0	8.2
Cycle Q Clear(g_c), s	1.8	9.5	9.6	4.4	7.4	7.7	1.3	0.0	7.6	2.9	0.0	8.2
Prop In Lane	1.00		0.29	1.00		0.72	1.00		0.38	1.00		0.15
Lane Grp Cap(c), veh/h	295	342	342	302	424	395	464	0	633	501	0	706
V/C Ratio(X)	0.19	0.72	0.73	0.45	0.49	0.51	0.11	0.00	0.39	0.23	0.00	0.40
Avail Cap(c_a), veh/h	533	716	717	458	740	690	705	0	633	696	0	706
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.6	27.7	27.8	21.5	24.0	24.1	14.0	0.0	17.3	13.4	0.0	16.2
Incr Delay (d2), s/veh	0.3	2.8	3.0	1.0	0.9	1.0	0.1	0.0	1.8	0.2	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.9	4.0	1.7	2.9	2.9	0.5	0.0	3.1	1.0	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.9	30.5	30.7	22.6	24.9	25.2	14.1	0.0	19.1	13.7	0.0	17.9
LnGrp LOS	C	C	C	C	C	C	B	A	B	B	A	B
Approach Vol, veh/h	551			546			297			395		
Approach Delay, s/veh	29.8			24.4			18.2			16.7		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.1	33.9	8.2	23.0	10.0	32.0	11.6	19.6				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
Max Green Setting (Gmax), s	12.5	26.5	12.5	30.5	12.5	26.5	12.5	29.5				
Max Q Clear Time (g_c+I1), s	3.3	10.2	3.8	9.7	4.9	9.6	6.4	11.6				
Green Ext Time (p_c), s	0.0	1.3	0.1	2.1	0.1	1.2	0.1	2.5				
Intersection Summary												
HCM 6th Ctrl Delay	23.4											
HCM 6th LOS	C											



HCM 6th Signalized Intersection Summary  
2361: SW 15th St & Kilpatrick Turnpike

11/20/2023

	EBL	EBT	WBT	WBR	SBL	SBR
Movement						
Lane Configurations						
Traffic Volume (veh/h)	260	452	268	28	0	0
Future Volume (veh/h)	260	452	268	28	0	0
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Work Zone On Approach		No	No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870		
Adj Flow Rate, veh/h	306	532	315	33		
Peak Hour Factor	0.85	0.85	0.85	0.85		
Percent Heavy Veh, %	2	2	2	2		
Cap, veh/h	946	2636	894	93		
Arrive On Green	0.21	0.74	0.28	0.28		
Sat Flow, veh/h	1781	3647	3342	338		
Grp Volume(v), veh/h	306	532	171	177		
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1810		
Q Serve(g_s), s	1.7	0.9	1.5	1.5		
Cycle Q Clear(g_c), s	1.7	0.9	1.5	1.5		
Prop In Lane	1.00			0.19		
Lane Grp Cap(c), veh/h	946	2636	489	498		
V/C Ratio(X)	0.32	0.20	0.35	0.36		
Avail Cap(c_a), veh/h	2415	5506	2753	2803		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	2.4	0.8	5.6	5.6		
Incr Delay (d2), s/veh	0.2	0.0	0.4	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	0.1		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	2.6	0.8	6.1	6.1		
LnGrp LOS	A	A	A	A		
Approach Vol, veh/h		838	348			
Approach Delay, s/veh		1.5	6.1			
Approach LOS		A	A			
Timer - Assigned Phs			3	4		8
Phs Duration (G+Y+Rc), s			9.0	10.3		19.4
Change Period (Y+Rc), s			5.0	5.0		5.0
Max Green Setting (Gmax), s			20.0	30.0		30.0
Max Q Clear Time (g_c+l1), s			3.7	3.5		2.9
Green Ext Time (p_c), s			0.8	1.8		3.4
Intersection Summary						
HCM 6th Ctrl Delay			2.8			
HCM 6th LOS			A			

HCM 6th Signalized Intersection Summary  
2362: SW 15th St & Kilpatrick Turnpike























11/20/2023

	EBL	EBT	WBT	WBR	SBL	SBR
Movement						
Lane Configurations		↑↑↑	↑↑		↑	↑
Traffic Volume (veh/h)	8	508	252	4	192	552
Future Volume (veh/h)	8	508	252	4	192	552
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	9	598	296	5	226	649
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	110	1264	918	15	832	740
Arrive On Green	0.26	0.26	0.26	0.26	0.47	0.47
Sat Flow, veh/h	26	5076	3670	60	1781	1585
Grp Volume(v), veh/h	229	378	147	154	226	649
Grp Sat Flow(s),veh/h/ln	1851	1549	1777	1860	1781	1585
Q Serve(g_s), s	0.0	3.7	2.4	2.4	2.8	13.4
Cycle Q Clear(g_c), s	3.7	3.7	2.4	2.4	2.8	13.4
Prop In Lane	0.04			0.03	1.00	1.00
Lane Grp Cap(c), veh/h	579	795	456	477	832	740
V/C Ratio(X)	0.40	0.48	0.32	0.32	0.27	0.88
Avail Cap(c_a), veh/h	1619	2568	1473	1541	984	876
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.4	11.4	10.9	10.9	5.9	8.7
Incr Delay (d2), s/veh	0.4	0.4	0.4	0.4	0.2	8.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.9	0.7	0.7	0.5	3.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.8	11.8	11.3	11.3	6.1	17.6
LnGrp LOS	B	B	B	B	A	B
Approach Vol, veh/h		607	301		875	
Approach Delay, s/veh		11.8	11.3		14.6	
Approach LOS		B	B		B	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		21.9		14.3		14.3
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		20.0		30.0		30.0
Max Q Clear Time (g_c+I1), s		15.4		4.4		5.7
Green Ext Time (p_c), s		1.5		1.5		3.5
Intersection Summary						
HCM 6th Ctrl Delay			13.1			
HCM 6th LOS			B			



# HCM Signalized Intersection Capacity Analysis 396: EB I-40 Ramp/WB I-40 Ramp & Morgan Rd

11/20/2023

												
Movement	NBL	NBT	NBR	NBR2	SBL	SBT	SBR	SBR2	NEL	NER2	SWL	SWR2
Lane Configurations												
Traffic Volume (vph)	196	144	304	0	152	192	160	0	140	220	568	432
Future Volume (vph)	196	144	304	0	152	192	160	0	140	220	568	432
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	5.5			5.5	6.0			6.5	4.0	5.5	4.0
Lane Util. Factor	0.97	0.95			0.97	0.95			0.97	1.00	0.97	1.00
Frt	1.00	0.90			1.00	0.93			1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00			0.95	1.00			0.95	1.00	0.95	1.00
Satd. Flow (prot)	3433	3179			3433	3298			3433	1583	3433	1583
Flt Permitted	0.95	1.00			0.95	1.00			0.95	1.00	0.95	1.00
Satd. Flow (perm)	3433	3179			3433	3298			3433	1583	3433	1583
Peak-hour factor, PHF	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.85
Adj. Flow (vph)	231	169	358	0	179	226	188	0	165	259	668	508
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	231	527	0	0	179	414	0	0	165	259	668	508
Turn Type	Prot	NA		Prot	Prot	NA		Free	Prot	Free	Prot	Free
Protected Phases	1	6		6	5	2			3		7	
Permitted Phases								Free		Free		Free
Actuated Green, G (s)	9.7	16.9			8.8	14.0			15.2	58.4	16.2	58.4
Effective Green, g (s)	9.7	16.9			8.8	14.0			15.2	58.4	16.2	58.4
Actuated g/C Ratio	0.17	0.29			0.15	0.24			0.26	1.00	0.28	1.00
Clearance Time (s)	7.0	5.5			5.5	6.0			6.5		5.5	
Vehicle Extension (s)	3.0	3.0			3.0	3.0			3.0		3.0	
Lane Grp Cap (vph)	570	919			517	790			893	1583	952	1583
v/s Ratio Prot	0.07	c0.17			0.05	0.13			0.05		c0.19	
v/s Ratio Perm										0.16		c0.32
v/c Ratio	0.41	0.57			0.35	0.52			0.18	0.16	0.70	0.32
Uniform Delay, d1	21.8	17.7			22.2	19.3			16.8	0.0	18.9	0.0
Progression Factor	1.00	1.00			1.00	1.00			1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.9			0.4	0.6			0.1	0.2	2.4	0.5
Delay (s)	22.2	18.5			22.6	19.9			16.9	0.2	21.3	0.5
Level of Service	C	B			C	B			B	A	C	A
Approach Delay (s)		19.7				20.7						
Approach LOS		B				C						
<b>Intersection Summary</b>												
HCM 2000 Control Delay		15.1				HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio		0.68										
Actuated Cycle Length (s)		58.4				Sum of lost time (s)			19.5			
Intersection Capacity Utilization		50.0%				ICU Level of Service			A			
Analysis Period (min)		15										

c Critical Lane Group

HCM 6th TWSC  
17: S Mustang Rd & SW 11th St

11/20/2023

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕		↕	↕			↕		
Traffic Vol, veh/h	12	0	44	0	0	8	52	808	12	0	964	72
Future Vol, veh/h	12	0	44	0	0	8	52	808	12	0	964	72
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	-	-	-	0	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	0	52	0	0	9	61	951	14	0	1134	85

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	1775	2264	610	1647	-	483	1219	0
Stage 1	1177	1177	-	1080	-	-	-	-
Stage 2	598	1087	-	567	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	-	6.94	4.14	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	-	3.32	2.22	-
Pot Cap-1 Maneuver	52	40	437	65	0	530	568	-
Stage 1	203	263	-	233	0	-	-	-
Stage 2	456	290	-	476	0	-	-	-
Platoon blocked, %								
Mov Cap-1 Maneuver	42	31	437	47	-	530	568	-
Mov Cap-2 Maneuver	42	31	-	47	-	-	-	-
Stage 1	156	263	-	179	-	-	-	-
Stage 2	344	223	-	420	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	49	11.9	1.8	0
HCM LOS	E	B		






















  

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	568	-	-	145	-	530	709	-	-
HCM Lane V/C Ratio	0.108	-	-	0.454	-	0.018	-	-	-
HCM Control Delay (s)	12.1	1.2	-	49	0	11.9	0	-	-
HCM Lane LOS	B	A	-	E	A	B	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	2.1	-	0.1	0	-	-























# HCM 6th Signalized Intersection Summary 401: Morgan Rd & Reno Ave

11/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	24	36	16	72	16	68	76	4	12	68	0
Future Volume (veh/h)	8	24	36	16	72	16	68	76	4	12	68	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	9	28	42	19	85	19	80	89	5	14	80	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	17	157	140	34	284	62	101	1521	678	25	1370	0
Arrive On Green	0.01	0.09	0.09	0.02	0.10	0.10	0.06	0.43	0.43	0.01	0.39	0.00
Sat Flow, veh/h	1781	1777	1585	1781	2904	630	1781	3554	1585	1781	3647	0
Grp Volume(v), veh/h	9	28	42	19	51	53	80	89	5	14	80	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1757	1781	1777	1585	1781	1777	0
Q Serve(g_s), s	0.2	0.6	1.1	0.5	1.2	1.2	2.0	0.7	0.1	0.3	0.6	0.0
Cycle Q Clear(g_c), s	0.2	0.6	1.1	0.5	1.2	1.2	2.0	0.7	0.1	0.3	0.6	0.0
Prop In Lane	1.00		1.00	1.00		0.36	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	17	157	140	34	174	172	101	1521	678	25	1370	0
V/C Ratio(X)	0.53	0.18	0.30	0.57	0.29	0.31	0.79	0.06	0.01	0.55	0.06	0.00
Avail Cap(c_a), veh/h	321	1201	1071	321	700	693	321	1521	678	321	1521	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.9	18.7	18.9	21.6	18.6	18.6	20.7	7.4	7.3	21.7	8.6	0.0
Incr Delay (d2), s/veh	23.7	0.5	1.2	14.1	0.9	1.0	12.9	0.1	0.0	17.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.4	0.3	0.4	0.4	1.0	0.2	0.0	0.2	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.6	19.3	20.1	35.7	19.5	19.6	33.5	7.5	7.3	39.0	8.6	0.0
LnGrp LOS	D	B	C	D	B	B	C	A	A	D	A	A
Approach Vol, veh/h	79				123				174			
Approach Delay, s/veh	22.7				22.1				19.5			
Approach LOS	C				C				B			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.5	22.1	5.4	9.3	5.6	24.0	5.8	8.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	8.0	19.0	8.0	17.5	8.0	19.0	8.0	30.0				
Max Q Clear Time (g_c+l1), s	4.0	2.6	2.2	3.2	2.3	2.7	2.5	3.1				
Green Ext Time (p_c), s	0.0	0.3	0.0	0.3	0.0	0.3	0.0	0.3				
Intersection Summary												
HCM 6th Ctrl Delay	19.4											
HCM 6th LOS	B											

# HCM 6th Signalized Intersection Summary 403: Morgan Rd & SW 15th St





















11/20/2023

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (veh/h)	44	20	32	0	12	12	32	76	8	36	208	60		
Future Volume (veh/h)	44	20	32	0	12	12	32	76	8	36	208	60		
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Work Zone On Approach	No			No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870		
Adj Flow Rate, veh/h	52	24	38	0	14	14	38	89	9	42	245	71		
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85		
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2		
Cap, veh/h	68	171	152	1	35	30	49	2436	243	54	2049	581		
Arrive On Green	0.04	0.10	0.10	0.00	0.02	0.02	0.03	0.75	0.75	0.03	0.75	0.75		
Sat Flow, veh/h	1781	1777	1585	1781	1809	1558	1781	3263	325	1781	2733	775		
Grp Volume(v), veh/h	52	24	38	0	14	14	38	48	50	42	157	159		
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1590	1781	1777	1812	1781	1777	1731		
Q Serve(g_s), s	3.8	1.6	2.9	0.0	1.0	1.2	2.8	0.9	0.9	3.0	3.2	3.3		
Cycle Q Clear(g_c), s	3.8	1.6	2.9	0.0	1.0	1.2	2.8	0.9	0.9	3.0	3.2	3.3		
Prop In Lane	1.00		1.00	1.00		0.98	1.00		0.18	1.00		0.45		
Lane Grp Cap(c), veh/h	68	171	152	1	35	31	49	1326	1352	54	1332	1297		
V/C Ratio(X)	0.77	0.14	0.25	0.00	0.39	0.46	0.77	0.04	0.04	0.77	0.12	0.12		
Avail Cap(c_a), veh/h	288	526	469	110	349	312	247	1326	1352	274	1332	1297		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99		
Uniform Delay (d), s/veh	62.0	53.8	54.4	0.0	63.0	63.0	62.8	4.3	4.3	62.6	4.5	4.5		
Incr Delay (d2), s/veh	16.5	0.4	0.8	0.0	7.1	10.2	22.4	0.1	0.1	19.9	0.2	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.0	0.7	1.2	0.0	0.5	0.5	1.5	0.3	0.3	1.7	1.1	1.1		
Unsig. Movement Delay, s/veh														
LnGrp Delay(d),s/veh	78.4	54.2	55.3	0.0	70.1	73.2	85.2	4.3	4.3	82.5	4.7	4.7		
LnGrp LOS	E	D	E	A	E	E	F	A	A	F	A	A		
Approach Vol, veh/h	114				28				136		358			
Approach Delay, s/veh	65.6				71.7				26.9		13.8			
Approach LOS	E				E				C		B			
Timer - Assigned Phs	1	2	3	4	5	6	7	8						
Phs Duration (G+Y+Rc), s	8.6	103.4	9.9	8.0	9.0	103.0	0.0	18.0						
Change Period (Y+Rc), s	5.0	6.0	5.0	5.5	5.0	6.0	5.0	5.5						
Max Green Setting (Gmax), s	18.0	44.0	21.0	25.5	20.0	42.0	8.0	38.5						
Max Q Clear Time (g_c+I1), s	4.8	5.3	5.8	3.2	5.0	2.9	0.0	4.9						
Green Ext Time (p_c), s	0.0	1.8	0.1	0.1	0.1	0.5	0.0	0.3						
Intersection Summary														
HCM 6th Ctrl Delay	28.4													
HCM 6th LOS	C													























HCM 6th Signalized Intersection Summary  
575: Sara Rd & Reno Ave

11/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	60	40	8	112	24	24	20	4	8	24	20
Future Volume (veh/h)	40	60	40	8	112	24	24	20	4	8	24	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	47	71	47	9	132	28	28	24	5	9	28	24
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	76	466	283	17	547	113	49	323	65	17	177	134
Arrive On Green	0.04	0.22	0.22	0.01	0.19	0.19	0.03	0.11	0.11	0.01	0.09	0.09
Sat Flow, veh/h	1781	2123	1292	1781	2932	606	1781	2946	594	1781	1926	1459
Grp Volume(v), veh/h	47	58	60	9	79	81	28	14	15	9	26	26
Grp Sat Flow(s),veh/h/ln	1781	1777	1638	1781	1777	1761	1781	1777	1763	1781	1777	1608
Q Serve(g_s), s	0.9	0.9	1.0	0.2	1.2	1.3	0.5	0.2	0.2	0.2	0.4	0.5
Cycle Q Clear(g_c), s	0.9	0.9	1.0	0.2	1.2	1.3	0.5	0.2	0.2	0.2	0.4	0.5
Prop In Lane	1.00		0.79	1.00		0.34	1.00		0.34	1.00		0.91
Lane Grp Cap(c), veh/h	76	390	359	17	331	329	49	195	194	17	163	148
V/C Ratio(X)	0.62	0.15	0.17	0.53	0.24	0.25	0.57	0.07	0.08	0.53	0.16	0.18
Avail Cap(c_a), veh/h	810	1373	1266	810	1373	1361	810	1400	1390	810	1346	1218
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.5	10.4	10.4	16.3	11.4	11.4	15.9	13.2	13.2	16.3	13.8	13.8
Incr Delay (d2), s/veh	8.1	0.2	0.2	22.8	0.4	0.4	10.1	0.2	0.2	22.8	0.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.2	0.2	0.2	0.4	0.4	0.3	0.1	0.1	0.2	0.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	10.6	10.6	39.1	11.8	11.8	26.0	13.3	13.4	39.1	14.2	14.4
LnGrp LOS	C	B	B	D	B	B	C	B	B	D	B	B
Approach Vol, veh/h	165			169			57			61		
Approach Delay, s/veh	14.3			13.3			19.6			18.0		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.9	9.0	6.4	11.7	5.3	9.6	5.3	12.7				
Change Period (Y+Rc), s	5.0	6.0	5.0	5.5	5.0	* 6	5.0	5.5				
Max Green Setting (Gmax), s	15.0	25.0	15.0	25.5	15.0	* 26	15.0	25.5				
Max Q Clear Time (g_c+I1), s	2.5	2.5	2.9	3.3	2.2	2.2	2.2	3.0				
Green Ext Time (p_c), s	0.0	0.2	0.1	0.7	0.0	0.1	0.0	0.5				
Intersection Summary												
HCM 6th Ctrl Delay	15.1											
HCM 6th LOS	B											
Notes												

HCM 6th Signalized Intersection Summary  
576: Sara Rd & SW 15th St










11/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	60	16	28	52	8	4	24	12	20	16	4
Future Volume (veh/h)	16	60	16	28	52	8	4	24	12	20	16	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	19	71	19	33	61	9	5	28	14	24	19	5
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	336	382	98	331	458	66	711	483	242	712	610	161
Arrive On Green	0.02	0.14	0.14	0.03	0.15	0.15	0.01	0.41	0.41	0.02	0.43	0.43
Sat Flow, veh/h	1781	2796	721	1781	3116	450	1781	1176	588	1781	1427	376
Grp Volume(v), veh/h	19	44	46	33	34	36	5	0	42	24	0	24
Grp Sat Flow(s),veh/h/ln	1781	1777	1741	1781	1777	1789	1781	0	1764	1781	0	1803
Q Serve(g_s), s	0.5	1.2	1.3	0.9	0.9	1.0	0.1	0.0	0.8	0.4	0.0	0.4
Cycle Q Clear(g_c), s	0.5	1.2	1.3	0.9	0.9	1.0	0.1	0.0	0.8	0.4	0.0	0.4
Prop In Lane	1.00		0.41	1.00		0.25	1.00		0.33	1.00		0.21
Lane Grp Cap(c), veh/h	336	242	238	331	261	263	711	0	725	712	0	771
V/C Ratio(X)	0.06	0.18	0.19	0.10	0.13	0.14	0.01	0.00	0.06	0.03	0.00	0.03
Avail Cap(c_a), veh/h	710	957	937	686	957	964	1108	0	725	1079	0	771
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.8	20.9	21.0	19.5	20.3	20.3	9.4	0.0	9.7	8.9	0.0	9.1
Incr Delay (d2), s/veh	0.1	0.4	0.4	0.1	0.2	0.2	0.0	0.0	0.2	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.5	0.5	0.3	0.3	0.4	0.0	0.0	0.3	0.1	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.8	21.3	21.4	19.6	20.5	20.6	9.4	0.0	9.9	8.9	0.0	9.2
LnGrp LOS	B	C	C	B	C	C	A	A	A	A	A	A
Approach Vol, veh/h	109				103				47			
Approach Delay, s/veh	21.1				20.2				9.8			
Approach LOS	C				C				A			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	28.9	6.5	13.5	6.7	28.0	7.1	13.0				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
Max Green Setting (Gmax), s	12.5	22.5	12.5	29.5	12.5	22.5	12.5	29.5				
Max Q Clear Time (g_c+I1), s	2.1	2.4	2.5	3.0	2.4	2.8	2.9	3.3				
Green Ext Time (p_c), s	0.0	0.1	0.0	0.3	0.0	0.1	0.0	0.4				
Intersection Summary												
HCM 6th Ctrl Delay	17.2											
HCM 6th LOS	B											
Notes												



HCM 6th Signalized Intersection Summary  
2361: SW 15th St & Kilpatrick Turnpike

11/20/2023

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	44	92	64	12	0	0
Future Volume (veh/h)	44	92	64	12	0	0
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Work Zone On Approach		No	No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870		
Adj Flow Rate, veh/h	52	108	75	14		
Peak Hour Factor	0.85	0.85	0.85	0.85		
Percent Heavy Veh, %	2	2	2	2		
Cap, veh/h	948	2445	936	170		
Arrive On Green	0.06	0.69	0.31	0.31		
Sat Flow, veh/h	1781	3647	3096	546		
Grp Volume(v), veh/h	52	108	44	45		
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1772		
Q Serve(g_s), s	0.2	0.2	0.3	0.3		
Cycle Q Clear(g_c), s	0.2	0.2	0.3	0.3		
Prop In Lane	1.00			0.31		
Lane Grp Cap(c), veh/h	948	2445	554	553		
V/C Ratio(X)	0.05	0.04	0.08	0.08		
Avail Cap(c_a), veh/h	2500	6649	3325	3316		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	2.2	0.8	3.9	3.9		
Incr Delay (d2), s/veh	0.0	0.0	0.1	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.0		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	2.2	0.8	4.0	4.0		
LnGrp LOS	A	A	A	A		
Approach Vol, veh/h		160	89			
Approach Delay, s/veh		1.3	4.0			
Approach LOS		A	A			
Timer - Assigned Phs			3	4		8
Phs Duration (G+Y+Rc), s			6.0	10.0		16.0
Change Period (Y+Rc), s			5.0	5.0		5.0
Max Green Setting (Gmax), s			15.0	30.0		30.0
Max Q Clear Time (g_c+I1), s			2.2	2.3		2.2
Green Ext Time (p_c), s			0.1	0.4		0.5
<b>Intersection Summary</b>						
HCM 6th Ctrl Delay			2.2			
HCM 6th LOS			A			























HCM 6th Signalized Intersection Summary  
2362: SW 15th St & Kilpatrick Turnpike

11/20/2023

	EBL	EBT	WBT	WBR	SBL	SBR
Movement						
Lane Configurations		↑↑↑	↑↑		↘	↗
Traffic Volume (veh/h)	0	124	64	0	24	132
Future Volume (veh/h)	0	124	64	0	24	132
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	146	75	0	28	155
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1419	987	0	297	264
Arrive On Green	0.00	0.28	0.28	0.00	0.17	0.17
Sat Flow, veh/h	0	5443	3741	0	1781	1585
Grp Volume(v), veh/h	0	146	75	0	28	155
Grp Sat Flow(s),veh/h/ln	0	1702	1777	0	1781	1585
Q Serve(g_s), s	0.0	0.4	0.3	0.0	0.2	1.6
Cycle Q Clear(g_c), s	0.0	0.4	0.3	0.0	0.2	1.6
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1419	987	0	297	264
V/C Ratio(X)	0.00	0.10	0.08	0.00	0.09	0.59
Avail Cap(c_a), veh/h	0	8511	5924	0	1980	1761
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	4.8	4.8	0.0	6.4	6.9
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.0	0.0	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	4.9	4.8	0.0	6.5	9.0
LnGrp LOS	A	A	A	A	A	A
Approach Vol, veh/h		146	75		183	
Approach Delay, s/veh		4.9	4.8		8.6	
Approach LOS		A	A		A	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		8.0		10.0		10.0
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		20.0		30.0		30.0
Max Q Clear Time (g_c+I1), s		3.6		2.3		2.4
Green Ext Time (p_c), s		0.5		0.3		0.8
Intersection Summary						
HCM 6th Ctrl Delay			6.6			
HCM 6th LOS			A			

# HCM Signalized Intersection Capacity Analysis 396: EB I-40 Ramp/WB I-40 Ramp & Morgan Rd

11/20/2023

												
Movement	NBL	NBT	NBR	NBR2	SBL	SBT	SBR	SBR2	NEL	NER2	SWL	SWR2
Lane Configurations												
Traffic Volume (vph)	40	20	116	0	72	60	56	0	32	124	216	152
Future Volume (vph)	40	20	116	0	72	60	56	0	32	124	216	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	5.5			5.5	6.0			6.5	4.0	5.5	4.0
Lane Util. Factor	0.97	0.95			0.97	0.95			0.97	1.00	0.97	1.00
Frt	1.00	0.87			1.00	0.93			1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00			0.95	1.00			0.95	1.00	0.95	1.00
Satd. Flow (prot)	3433	3088			3433	3283			3433	1583	3433	1583
Flt Permitted	0.95	1.00			0.95	1.00			0.95	1.00	0.95	1.00
Satd. Flow (perm)	3433	3088			3433	3283			3433	1583	3433	1583
Peak-hour factor, PHF	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.85
Adj. Flow (vph)	47	24	136	0	85	71	66	0	38	146	254	179
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	47	160	0	0	85	137	0	0	38	146	254	179
Turn Type	Prot	NA		Prot	Prot	NA		Free	Prot	Free	Prot	Free
Protected Phases	1	6		6	5	2			3		7	
Permitted Phases								Free		Free		Free
Actuated Green, G (s)	2.6	15.5			4.0	14.9			8.3	45.3	9.3	45.3
Effective Green, g (s)	2.6	15.5			4.0	14.9			8.3	45.3	9.3	45.3
Actuated g/C Ratio	0.06	0.34			0.09	0.33			0.18	1.00	0.21	1.00
Clearance Time (s)	7.0	5.5			5.5	6.0			6.5		5.5	
Vehicle Extension (s)	3.0	3.0			3.0	3.0			3.0		3.0	
Lane Grp Cap (vph)	197	1056			303	1079			629	1583	704	1583
v/s Ratio Prot	0.01	0.05			c0.02	0.04			0.01		c0.07	
v/s Ratio Perm										0.09		c0.11
v/c Ratio	0.24	0.15			0.28	0.13			0.06	0.09	0.36	0.11
Uniform Delay, d1	20.4	10.3			19.3	10.6			15.3	0.0	15.4	0.0
Progression Factor	1.00	1.00			1.00	1.00			1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.1			0.5	0.1			0.0	0.1	0.3	0.1
Delay (s)	21.0	10.4			19.8	10.7			15.3	0.1	15.8	0.1
Level of Service	C	B			B	B			B	A	B	A
Approach Delay (s)		12.8				14.2						
Approach LOS		B				B						
<b>Intersection Summary</b>												
HCM 2000 Control Delay		10.0				HCM 2000 Level of Service				A		
HCM 2000 Volume to Capacity ratio		0.27										
Actuated Cycle Length (s)		45.3				Sum of lost time (s)				19.5		
Intersection Capacity Utilization		41.7%				ICU Level of Service				A		
Analysis Period (min)		15										

c Critical Lane Group



HCM 2010 TWSC  
17: S Mustang Rd & SW 11th St

11/20/2023

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↖		↗	↔			↔		
Traffic Vol, veh/h	4	0	16	0	0	0	24	260	4	0	312	40
Future Vol, veh/h	4	0	16	0	0	0	24	260	4	0	312	40
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	-	-	-	0	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	19	0	0	0	28	306	5	0	367	47

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	600	758	207	549	-	156	414	0
Stage 1	391	391	-	365	-	-	-	-
Stage 2	209	367	-	184	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	-	6.94	4.14	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	-	3.32	2.22	-
Pot Cap-1 Maneuver	385	335	799	419	0	862	1141	-
Stage 1	605	606	-	627	0	-	-	-
Stage 2	774	621	-	800	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	376	325	799	400	-	862	1141	-
Mov Cap-2 Maneuver	376	325	-	400	-	-	-	-
Stage 1	587	606	-	608	-	-	-	-
Stage 2	751	602	-	781	-	-	-	-























Approach	EB	WB	NB	SB
HCM Control Delay, s	10.7	0	0.8	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1141	-	-	652	-	-	1246
HCM Lane V/C Ratio	0.025	-	-	0.036	-	-	-
HCM Control Delay (s)	8.2	0.1	-	10.7	0	0	0
HCM Lane LOS	A	A	-	B	A	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	-	0

HCM 6th Signalized Intersection Summary  
401: Morgan Rd & Reno Ave





















11/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	125	171	133	391	104	191	316	50	21	216	54
Future Volume (veh/h)	50	125	171	133	391	104	191	316	50	21	216	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	59	147	201	156	460	122	225	372	59	25	254	64
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	76	328	293	197	704	185	249	1180	526	41	607	150
Arrive On Green	0.04	0.18	0.18	0.11	0.25	0.25	0.14	0.33	0.33	0.02	0.22	0.22
Sat Flow, veh/h	1781	1777	1585	1781	2783	733	1781	3554	1585	1781	2824	698
Grp Volume(v), veh/h	59	147	201	156	293	289	225	372	59	25	158	160
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1738	1781	1777	1585	1781	1777	1745
Q Serve(g_s), s	1.9	4.2	6.8	4.9	8.4	8.5	7.1	4.5	1.5	0.8	4.4	4.5
Cycle Q Clear(g_c), s	1.9	4.2	6.8	4.9	8.4	8.5	7.1	4.5	1.5	0.8	4.4	4.5
Prop In Lane	1.00		1.00	1.00		0.42	1.00		1.00	1.00		0.40
Lane Grp Cap(c), veh/h	76	328	293	197	450	440	249	1180	526	41	382	375
V/C Ratio(X)	0.78	0.45	0.69	0.79	0.65	0.66	0.90	0.32	0.11	0.61	0.41	0.43
Avail Cap(c_a), veh/h	249	931	831	249	543	532	249	1180	526	249	590	579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	20.7	21.8	24.8	19.1	19.2	24.2	14.3	13.3	27.7	19.3	19.4
Incr Delay (d2), s/veh	15.6	1.0	2.8	12.5	2.0	2.2	32.8	0.7	0.4	13.9	0.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.6	2.4	2.5	3.1	3.1	4.9	1.6	0.5	0.5	1.6	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.7	21.7	24.6	37.3	21.1	21.4	57.0	15.0	13.7	41.6	20.1	20.2
LnGrp LOS	D	C	C	D	C	C	E	B	B	D	C	C
Approach Vol, veh/h	407			738			656			343		
Approach Delay, s/veh	26.2			24.7			29.3			21.7		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	17.3	7.4	19.5	6.3	24.0	11.3	15.6				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	8.0	19.0	8.0	17.5	8.0	19.0	8.0	30.0				
Max Q Clear Time (g_c+I1), s	9.1	6.5	3.9	10.5	2.8	6.5	6.9	8.8				
Green Ext Time (p_c), s	0.0	1.3	0.0	1.8	0.0	1.9	0.0	1.8				
Intersection Summary												
HCM 6th Ctrl Delay	25.9											
HCM 6th LOS	C											



HCM 6th Signalized Intersection Summary  
403: Morgan Rd & SW 15th St





















11/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	146	229	21	133	71	112	362	17	87	687	295
Future Volume (veh/h)	158	146	229	21	133	71	112	362	17	87	687	295
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	186	172	269	25	156	84	132	426	20	102	808	347
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	213	349	311	33	216	111	158	1897	89	127	1287	551
Arrive On Green	0.12	0.20	0.20	0.02	0.09	0.09	0.09	0.55	0.55	0.07	0.53	0.53
Sat Flow, veh/h	1781	1777	1585	1781	2274	1164	1781	3456	162	1781	2423	1038
Grp Volume(v), veh/h	186	172	269	25	120	120	132	219	227	102	592	563
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1661	1781	1777	1841	1781	1777	1684
Q Serve(g_s), s	13.3	11.2	21.4	1.8	8.5	9.2	9.5	8.2	8.3	7.3	30.4	30.6
Cycle Q Clear(g_c), s	13.3	11.2	21.4	1.8	8.5	9.2	9.5	8.2	8.3	7.3	30.4	30.6
Prop In Lane	1.00		1.00	1.00		0.70	1.00		0.09	1.00		0.62
Lane Grp Cap(c), veh/h	213	349	311	33	169	158	158	975	1011	127	944	895
V/C Ratio(X)	0.87	0.49	0.86	0.77	0.71	0.76	0.84	0.22	0.23	0.81	0.63	0.63
Avail Cap(c_a), veh/h	288	526	469	110	349	326	247	975	1011	274	944	895
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.77	0.77	0.77	1.00	1.00	1.00	1.00	1.00	1.00	0.81	0.81	0.81
Uniform Delay (d), s/veh	56.3	46.5	50.6	63.5	57.1	57.4	58.3	15.1	15.1	59.5	21.4	21.4
Incr Delay (d2), s/veh	15.7	0.8	8.3	30.5	5.5	7.3	13.3	0.5	0.5	9.3	2.6	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	4.9	9.0	1.1	4.0	4.1	4.8	3.3	3.4	3.6	12.7	12.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.9	47.3	58.9	94.0	62.6	64.7	71.6	15.6	15.6	68.8	24.0	24.2
LnGrp LOS	E	D	E	F	E	E	E	B	B	E	C	C
Approach Vol, veh/h	627				265				578			
Approach Delay, s/veh	59.6				66.5				28.4			
Approach LOS	E				E				C			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.5	75.1	20.5	17.8	14.2	77.4	7.4	31.0				
Change Period (Y+Rc), s	5.0	6.0	5.0	5.5	5.0	6.0	5.0	5.5				
Max Green Setting (Gmax), s	18.0	44.0	21.0	25.5	20.0	42.0	8.0	38.5				
Max Q Clear Time (g_c+I1), s	11.5	32.6	15.3	11.2	9.3	10.3	3.8	23.4				
Green Ext Time (p_c), s	0.2	5.6	0.2	1.0	0.1	2.4	0.0	2.2				
Intersection Summary												
HCM 6th Ctrl Delay	38.9											
HCM 6th LOS	D											























HCM 6th Signalized Intersection Summary  
575: Sara Rd & Reno Ave

11/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	137	125	42	583	50	158	183	25	58	229	204
Future Volume (veh/h)	79	137	125	42	583	50	158	183	25	58	229	204
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	93	161	147	49	686	59	186	215	29	68	269	240
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	547	466	64	888	76	233	920	122	88	380	328
Arrive On Green	0.07	0.30	0.30	0.04	0.27	0.27	0.13	0.29	0.29	0.05	0.21	0.21
Sat Flow, veh/h	1781	1820	1549	1781	3311	285	1781	3152	420	1781	1808	1559
Grp Volume(v), veh/h	93	157	151	49	368	377	186	120	124	68	264	245
Grp Sat Flow(s),veh/h/ln	1781	1777	1592	1781	1777	1819	1781	1777	1795	1781	1777	1590
Q Serve(g_s), s	3.4	4.5	4.9	1.8	12.7	12.8	6.8	3.4	3.5	2.5	9.2	9.6
Cycle Q Clear(g_c), s	3.4	4.5	4.9	1.8	12.7	12.8	6.8	3.4	3.5	2.5	9.2	9.6
Prop In Lane	1.00		0.97	1.00		0.16	1.00		0.23	1.00		0.98
Lane Grp Cap(c), veh/h	122	534	479	64	477	488	233	518	524	88	374	335
V/C Ratio(X)	0.76	0.29	0.32	0.77	0.77	0.77	0.80	0.23	0.24	0.77	0.71	0.73
Avail Cap(c_a), veh/h	401	679	609	401	679	696	401	666	673	401	666	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.5	17.9	18.0	31.9	22.5	22.5	28.1	17.9	18.0	31.3	24.4	24.6
Incr Delay (d2), s/veh	9.5	0.3	0.4	17.4	3.5	3.4	6.2	0.2	0.2	13.3	2.5	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	1.7	1.6	1.0	5.1	5.2	3.1	1.3	1.3	1.3	3.8	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.1	18.2	18.4	49.3	26.0	26.0	34.4	18.2	18.2	44.7	26.9	27.7
LnGrp LOS	D	B	B	D	C	C	C	B	B	D	C	C
Approach Vol, veh/h	401			794			430			577		
Approach Delay, s/veh	23.3			27.4			25.2			29.3		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.7	20.0	9.6	23.4	8.3	25.5	7.4	25.6				
Change Period (Y+Rc), s	5.0	6.0	5.0	5.5	5.0	* 6	5.0	5.5				
Max Green Setting (Gmax), s	15.0	25.0	15.0	25.5	15.0	* 25	15.0	25.5				
Max Q Clear Time (g_c+l1), s	8.8	11.6	5.4	14.8	4.5	5.5	3.8	6.9				
Green Ext Time (p_c), s	0.2	2.5	0.1	3.1	0.1	1.2	0.1	1.5				
Intersection Summary												
HCM 6th Ctrl Delay	26.7											
HCM 6th LOS	C											
Notes												

HCM 6th Signalized Intersection Summary  
576: Sara Rd & SW 15th St










11/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	375	62	121	233	129	46	133	83	100	212	37
Future Volume (veh/h)	50	375	62	121	233	129	46	133	83	100	212	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	59	441	73	142	274	152	54	156	98	118	249	44
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	310	617	102	318	557	300	422	350	220	461	549	97
Arrive On Green	0.04	0.20	0.20	0.09	0.25	0.25	0.04	0.33	0.33	0.07	0.36	0.36
Sat Flow, veh/h	1781	3054	502	1781	2230	1201	1781	1074	675	1781	1548	273
Grp Volume(v), veh/h	59	255	259	142	217	209	54	0	254	118	0	293
Grp Sat Flow(s),veh/h/ln	1781	1777	1780	1781	1777	1654	1781	0	1749	1781	0	1821
Q Serve(g_s), s	1.8	9.2	9.4	4.3	7.2	7.5	1.4	0.0	7.9	3.0	0.0	8.5
Cycle Q Clear(g_c), s	1.8	9.2	9.4	4.3	7.2	7.5	1.4	0.0	7.9	3.0	0.0	8.5
Prop In Lane	1.00		0.28	1.00		0.73	1.00		0.39	1.00		0.15
Lane Grp Cap(c), veh/h	310	359	360	318	444	413	422	0	570	461	0	647
V/C Ratio(X)	0.19	0.71	0.72	0.45	0.49	0.51	0.13	0.00	0.45	0.26	0.00	0.45
Avail Cap(c_a), veh/h	562	759	761	486	759	707	678	0	570	665	0	647
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.7	25.7	25.7	19.7	22.1	22.2	14.8	0.0	18.3	14.2	0.0	17.1
Incr Delay (d2), s/veh	0.3	2.6	2.7	1.0	0.8	1.0	0.1	0.0	2.5	0.3	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.8	3.8	1.6	2.8	2.7	0.5	0.0	3.2	1.1	0.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.0	28.3	28.4	20.7	23.0	23.2	14.9	0.0	20.9	14.4	0.0	19.4
LnGrp LOS	C	C	C	C	C	C	B	A	C	B	A	B
Approach Vol, veh/h	573			568			308			411		
Approach Delay, s/veh	27.6			22.5			19.8			18.0		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.1	30.0	8.2	22.7	10.1	28.0	11.5	19.4				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
Max Green Setting (Gmax), s	12.5	22.5	12.5	29.5	12.5	22.5	12.5	29.5				
Max Q Clear Time (g_c+I1), s	3.4	10.5	3.8	9.5	5.0	9.9	6.3	11.4				
Green Ext Time (p_c), s	0.1	1.2	0.1	2.2	0.1	1.1	0.2	2.6				
Intersection Summary												
HCM 6th Ctrl Delay	22.6											
HCM 6th LOS	C											
Notes												



HCM 6th Signalized Intersection Summary  
2361: SW 15th St & Kilpatrick Turnpike

11/20/2023

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	271	470	279	29	0	0
Future Volume (veh/h)	271	470	279	29	0	0
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Work Zone On Approach		No	No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870		
Adj Flow Rate, veh/h	319	553	328	34		
Peak Hour Factor	0.85	0.85	0.85	0.85		
Percent Heavy Veh, %	2	2	2	2		
Cap, veh/h	944	2647	910	94		
Arrive On Green	0.21	0.74	0.28	0.28		
Sat Flow, veh/h	1781	3647	3346	335		
Grp Volume(v), veh/h	319	553	178	184		
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1810		
Q Serve(g_s), s	1.7	0.9	1.6	1.6		
Cycle Q Clear(g_c), s	1.7	0.9	1.6	1.6		
Prop In Lane	1.00			0.18		
Lane Grp Cap(c), veh/h	944	2647	497	506		
V/C Ratio(X)	0.34	0.21	0.36	0.36		
Avail Cap(c_a), veh/h	2387	5438	2719	2770		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	2.5	0.8	5.7	5.7		
Incr Delay (d2), s/veh	0.2	0.0	0.4	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	0.1		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	2.7	0.8	6.1	6.1		
LnGrp LOS	A	A	A	A		
Approach Vol, veh/h		872	362			
Approach Delay, s/veh		1.5	6.1			
Approach LOS		A	A			
Timer - Assigned Phs			3	4		8
Phs Duration (G+Y+Rc), s			9.1	10.5		19.6
Change Period (Y+Rc), s			5.0	5.0		5.0
Max Green Setting (Gmax), s			20.0	30.0		30.0
Max Q Clear Time (g_c+I1), s			3.7	3.6		2.9
Green Ext Time (p_c), s			0.8	1.9		3.5
Intersection Summary						
HCM 6th Ctrl Delay			2.8			
HCM 6th LOS			A			























HCM 6th Signalized Intersection Summary  
2362: SW 15th St & Kilpatrick Turnpike

11/20/2023

	EBL	EBT	WBT	WBR	SBL	SBR
Movement						
Lane Configurations		↑↑↑	↑↑		↘	↗
Traffic Volume (veh/h)	8	529	262	4	200	574
Future Volume (veh/h)	8	529	262	4	200	574
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	9	622	308	5	235	675
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	106	1276	927	15	847	754
Arrive On Green	0.26	0.26	0.26	0.26	0.48	0.48
Sat Flow, veh/h	24	5078	3672	58	1781	1585
Grp Volume(v), veh/h	238	393	153	160	235	675
Grp Sat Flow(s),veh/h/ln	1852	1549	1777	1860	1781	1585
Q Serve(g_s), s	0.0	4.1	2.6	2.6	3.0	14.7
Cycle Q Clear(g_c), s	4.1	4.1	2.6	2.6	3.0	14.7
Prop In Lane	0.04			0.03	1.00	1.00
Lane Grp Cap(c), veh/h	579	802	460	482	847	754
V/C Ratio(X)	0.41	0.49	0.33	0.33	0.28	0.90
Avail Cap(c_a), veh/h	1557	2468	1416	1482	946	842
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.8	11.8	11.3	11.3	6.0	9.0
Incr Delay (d2), s/veh	0.5	0.5	0.4	0.4	0.2	11.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.0	0.8	0.8	0.6	4.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.3	12.3	11.7	11.7	6.1	20.4
LnGrp LOS	B	B	B	B	A	C
Approach Vol, veh/h		631	313		910	
Approach Delay, s/veh		12.3	11.7		16.7	
Approach LOS		B	B		B	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		22.9		14.8		14.8
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		20.0		30.0		30.0
Max Q Clear Time (g_c+I1), s		16.7		4.6		6.1
Green Ext Time (p_c), s		1.3		1.6		3.7
Intersection Summary						
HCM 6th Ctrl Delay			14.4			
HCM 6th LOS			B			

# HCM Signalized Intersection Capacity Analysis 396: EB I-40 Ramp/WB I-40 Ramp & Morgan Rd

11/20/2023

												
Movement	NBL	NBT	NBR	NBR2	SBL	SBT	SBR	SBR2	NEL	NER2	SWL	SWR2
Lane Configurations												
Traffic Volume (vph)	204	150	316	0	158	200	166	0	146	229	591	449
Future Volume (vph)	204	150	316	0	158	200	166	0	146	229	591	449
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	5.5			5.5	6.0			6.5	4.0	5.5	4.0
Lane Util. Factor	0.97	0.95			0.97	0.95			0.97	1.00	0.97	1.00
Frt	1.00	0.90			1.00	0.93			1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00			0.95	1.00			0.95	1.00	0.95	1.00
Satd. Flow (prot)	3433	3179			3433	3298			3433	1583	3433	1583
Flt Permitted	0.95	1.00			0.95	1.00			0.95	1.00	0.95	1.00
Satd. Flow (perm)	3433	3179			3433	3298			3433	1583	3433	1583
Peak-hour factor, PHF	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.85
Adj. Flow (vph)	240	176	372	0	186	235	195	0	172	269	695	528
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	240	548	0	0	186	430	0	0	172	269	695	528
Turn Type	Prot	NA		Prot	Prot	NA		Free	Prot	Free	Prot	Free
Protected Phases	1	6		6	5	2			3		7	
Permitted Phases								Free		Free		Free
Actuated Green, G (s)	9.9	17.2			9.0	14.3			15.6	59.3	16.6	59.3
Effective Green, g (s)	9.9	17.2			9.0	14.3			15.6	59.3	16.6	59.3
Actuated g/C Ratio	0.17	0.29			0.15	0.24			0.26	1.00	0.28	1.00
Clearance Time (s)	7.0	5.5			5.5	6.0			6.5		5.5	
Vehicle Extension (s)	3.0	3.0			3.0	3.0			3.0		3.0	
Lane Grp Cap (vph)	573	922			521	795			903	1583	961	1583
v/s Ratio Prot	0.07	c0.17			0.05	0.13			0.05		c0.20	
v/s Ratio Perm										0.17		c0.33
v/c Ratio	0.42	0.59			0.36	0.54			0.19	0.17	0.72	0.33
Uniform Delay, d1	22.1	18.1			22.6	19.6			17.0	0.0	19.3	0.0
Progression Factor	1.00	1.00			1.00	1.00			1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	1.0			0.4	0.8			0.1	0.2	2.7	0.6
Delay (s)	22.6	19.1			23.0	20.4			17.1	0.2	22.0	0.6
Level of Service	C	B			C	C			B	A	C	A
Approach Delay (s)		20.2				21.2						
Approach LOS		C				C						
<b>Intersection Summary</b>												
HCM 2000 Control Delay		15.5				HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio		0.70										
Actuated Cycle Length (s)		59.3				Sum of lost time (s)				19.5		
Intersection Capacity Utilization		51.2%				ICU Level of Service				A		
Analysis Period (min)		15										

c Critical Lane Group



HCM 6th TWSC  
17: S Mustang Rd & SW 11th St

11/20/2023

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	12	0	46	0	0	8	54	841	12	0	1003	75
Future Vol, veh/h	12	0	46	0	0	8	54	841	12	0	1003	75
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	-	-	-	0	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	0	54	0	0	9	64	989	14	0	1180	88

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	1847	2355	634	1714	-	502	1268	0
Stage 1	1224	1224	-	1124	-	-	-	-
Stage 2	623	1131	-	590	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	-	6.94	4.14	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	-	3.32	2.22	-
Pot Cap-1 Maneuver	46	35	422	58	0	515	544	-
Stage 1	190	250	-	219	0	-	-	-
Stage 2	440	277	-	461	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	36	26	422	40	-	515	544	-
Mov Cap-2 Maneuver	36	26	-	40	-	-	-	-
Stage 1	139	250	-	161	-	-	-	-
Stage 2	317	203	-	402	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	59.1	12.1	2.1	0
HCM LOS	F	B		





















  

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	544	-	-	131	-	515	686	-	-
HCM Lane V/C Ratio	0.117	-	-	0.521	-	0.018	-	-	-
HCM Control Delay (s)	12.5	1.5	-	59.1	0	12.1	0	-	-
HCM Lane LOS	B	A	-	F	A	B	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	2.5	-	0.1	0	-	-























HCM 6th Signalized Intersection Summary  
401: Morgan Rd & Reno Ave

11/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	25	37	17	75	17	71	79	4	12	71	0
Future Volume (veh/h)	8	25	37	17	75	17	71	79	4	12	71	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	9	29	44	20	88	20	84	93	5	14	84	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	17	158	141	35	288	63	107	1518	677	25	1356	0
Arrive On Green	0.01	0.09	0.09	0.02	0.10	0.10	0.06	0.43	0.43	0.01	0.38	0.00
Sat Flow, veh/h	1781	1777	1585	1781	2894	638	1781	3554	1585	1781	3647	0
Grp Volume(v), veh/h	9	29	44	20	53	55	84	93	5	14	84	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1755	1781	1777	1585	1781	1777	0
Q Serve(g_s), s	0.2	0.7	1.2	0.5	1.2	1.3	2.1	0.7	0.1	0.3	0.7	0.0
Cycle Q Clear(g_c), s	0.2	0.7	1.2	0.5	1.2	1.3	2.1	0.7	0.1	0.3	0.7	0.0
Prop In Lane	1.00		1.00	1.00		0.36	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	17	158	141	35	177	174	107	1518	677	25	1356	0
V/C Ratio(X)	0.53	0.18	0.31	0.57	0.30	0.32	0.79	0.06	0.01	0.55	0.06	0.00
Avail Cap(c_a), veh/h	320	1199	1069	320	699	691	320	1518	677	320	1518	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.9	18.8	19.0	21.6	18.6	18.6	20.6	7.5	7.3	21.8	8.7	0.0
Incr Delay (d2), s/veh	23.7	0.5	1.2	13.7	0.9	1.0	12.1	0.1	0.0	17.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.3	0.4	0.3	0.4	0.5	1.1	0.2	0.0	0.2	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.7	19.3	20.2	35.4	19.5	19.6	32.7	7.6	7.3	39.0	8.7	0.0
LnGrp LOS	D	B	C	D	B	B	C	A	A	D	A	A
Approach Vol, veh/h	82			128			182			98		
Approach Delay, s/veh	22.7			22.1			19.2			13.1		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.7	22.0	5.4	9.4	5.6	24.0	5.9	9.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	8.0	19.0	8.0	17.5	8.0	19.0	8.0	30.0				
Max Q Clear Time (g_c+I1), s	4.1	2.7	2.2	3.3	2.3	2.7	2.5	3.2				
Green Ext Time (p_c), s	0.0	0.3	0.0	0.3	0.0	0.4	0.0	0.3				
Intersection Summary												
HCM 6th Ctrl Delay	19.3											
HCM 6th LOS	B											

HCM 6th Signalized Intersection Summary  
403: Morgan Rd & SW 15th St





















11/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	21	33	0	12	12	33	79	8	37	216	62
Future Volume (veh/h)	46	21	33	0	12	12	33	79	8	37	216	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	54	25	39	0	14	14	39	93	9	44	254	73
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	70	173	155	1	35	30	50	2437	233	57	2046	576
Arrive On Green	0.04	0.10	0.10	0.00	0.02	0.02	0.03	0.74	0.74	0.03	0.75	0.75
Sat Flow, veh/h	1781	1777	1585	1781	1809	1558	1781	3278	313	1781	2738	770
Grp Volume(v), veh/h	54	25	39	0	14	14	39	50	52	44	163	164
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1590	1781	1777	1814	1781	1777	1732
Q Serve(g_s), s	3.9	1.7	3.0	0.0	1.0	1.2	2.8	1.0	1.0	3.2	3.3	3.4
Cycle Q Clear(g_c), s	3.9	1.7	3.0	0.0	1.0	1.2	2.8	1.0	1.0	3.2	3.3	3.4
Prop In Lane	1.00		1.00	1.00		0.98	1.00		0.17	1.00		0.44
Lane Grp Cap(c), veh/h	70	173	155	1	35	31	50	1321	1349	57	1328	1294
V/C Ratio(X)	0.77	0.14	0.25	0.00	0.39	0.46	0.77	0.04	0.04	0.77	0.12	0.13
Avail Cap(c_a), veh/h	288	526	469	110	349	312	247	1321	1349	274	1328	1294
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98
Uniform Delay (d), s/veh	61.8	53.7	54.3	0.0	63.0	63.0	62.7	4.4	4.4	62.4	4.6	4.6
Incr Delay (d2), s/veh	16.0	0.4	0.8	0.0	7.1	10.2	21.8	0.1	0.1	18.9	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.8	1.2	0.0	0.5	0.5	1.6	0.3	0.3	1.7	1.1	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.8	54.1	55.1	0.0	70.1	73.2	84.5	4.5	4.5	81.3	4.8	4.8
LnGrp LOS	E	D	E	A	E	E	F	A	A	F	A	A
Approach Vol, veh/h	118			28				141			371	
Approach Delay, s/veh	65.3			71.7				26.6			13.8	
Approach LOS	E			E				C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.7	103.2	10.1	8.0	9.2	102.7	0.0	18.2				
Change Period (Y+Rc), s	5.0	6.0	5.0	5.5	5.0	6.0	5.0	5.5				
Max Green Setting (Gmax), s	18.0	44.0	21.0	25.5	20.0	42.0	8.0	38.5				
Max Q Clear Time (g_c+l1), s	4.8	5.4	5.9	3.2	5.2	3.0	0.0	5.0				
Green Ext Time (p_c), s	0.0	1.9	0.1	0.1	0.1	0.5	0.0	0.3				
Intersection Summary												
HCM 6th Ctrl Delay	28.3											
HCM 6th LOS	C											























# HCM 6th Signalized Intersection Summary 575: Sara Rd & Reno Ave

11/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	62	42	8	117	25	25	21	4	8	25	21
Future Volume (veh/h)	42	62	42	8	117	25	25	21	4	8	25	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	49	73	49	9	138	29	29	25	5	9	29	25
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	78	471	290	17	554	114	50	336	65	17	181	138
Arrive On Green	0.04	0.22	0.22	0.01	0.19	0.19	0.03	0.11	0.11	0.01	0.09	0.09
Sat Flow, veh/h	1781	2110	1302	1781	2937	602	1781	2968	575	1781	1921	1463
Grp Volume(v), veh/h	49	60	62	9	82	85	29	15	15	9	27	27
Grp Sat Flow(s),veh/h/ln	1781	1777	1636	1781	1777	1762	1781	1777	1767	1781	1777	1607
Q Serve(g_s), s	0.9	0.9	1.0	0.2	1.3	1.4	0.5	0.2	0.3	0.2	0.5	0.5
Cycle Q Clear(g_c), s	0.9	0.9	1.0	0.2	1.3	1.4	0.5	0.2	0.3	0.2	0.5	0.5
Prop In Lane	1.00		0.80	1.00		0.34	1.00		0.33	1.00		0.91
Lane Grp Cap(c), veh/h	78	396	365	17	336	333	50	201	200	17	168	152
V/C Ratio(X)	0.63	0.15	0.17	0.53	0.24	0.26	0.58	0.07	0.08	0.53	0.16	0.18
Avail Cap(c_a), veh/h	801	1359	1251	801	1359	1347	801	1332	1325	801	1332	1205
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.7	10.4	10.5	16.4	11.5	11.5	16.0	13.2	13.2	16.4	13.9	13.9
Incr Delay (d2), s/veh	8.1	0.2	0.2	22.9	0.4	0.4	10.0	0.2	0.2	22.9	0.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.2	0.3	0.2	0.4	0.4	0.3	0.1	0.1	0.2	0.2	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.7	10.6	10.7	39.3	11.9	11.9	26.0	13.4	13.4	39.3	14.3	14.5
LnGrp LOS	C	B	B	D	B	B	C	B	B	D	B	B
Approach Vol, veh/h	171				176				59			
Approach Delay, s/veh	14.4				13.3				19.6			
Approach LOS	B				B				B			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.9	9.1	6.5	11.8	5.3	9.8	5.3	12.9				
Change Period (Y+Rc), s	5.0	6.0	5.0	5.5	5.0	* 6	5.0	5.5				
Max Green Setting (Gmax), s	15.0	25.0	15.0	25.5	15.0	* 25	15.0	25.5				
Max Q Clear Time (g_c+I1), s	2.5	2.5	2.9	3.4	2.2	2.3	2.2	3.0				
Green Ext Time (p_c), s	0.0	0.2	0.1	0.7	0.0	0.1	0.0	0.5				
Intersection Summary												
HCM 6th Ctrl Delay	15.1											
HCM 6th LOS	B											
Notes												

HCM 6th Signalized Intersection Summary  
576: Sara Rd & SW 15th St










11/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	62	17	29	54	8	4	25	12	21	17	4
Future Volume (veh/h)	17	62	17	29	54	8	4	25	12	21	17	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	20	73	20	34	64	9	5	29	14	25	20	5
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	337	381	101	331	463	64	708	488	236	711	617	154
Arrive On Green	0.02	0.14	0.14	0.03	0.15	0.15	0.01	0.41	0.41	0.02	0.43	0.43
Sat Flow, veh/h	1781	2781	734	1781	3137	432	1781	1192	575	1781	1444	361
Grp Volume(v), veh/h	20	46	47	34	36	37	5	0	43	25	0	25
Grp Sat Flow(s),veh/h/ln	1781	1777	1738	1781	1777	1793	1781	0	1767	1781	0	1805
Q Serve(g_s), s	0.5	1.2	1.3	0.9	1.0	1.0	0.1	0.0	0.8	0.4	0.0	0.4
Cycle Q Clear(g_c), s	0.5	1.2	1.3	0.9	1.0	1.0	0.1	0.0	0.8	0.4	0.0	0.4
Prop In Lane	1.00		0.42	1.00		0.24	1.00		0.33	1.00		0.20
Lane Grp Cap(c), veh/h	337	244	238	331	262	264	708	0	724	711	0	772
V/C Ratio(X)	0.06	0.19	0.20	0.10	0.14	0.14	0.01	0.00	0.06	0.04	0.00	0.03
Avail Cap(c_a), veh/h	708	954	934	684	954	963	1104	0	724	1075	0	772
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.8	21.0	21.0	19.5	20.4	20.4	9.4	0.0	9.8	9.0	0.0	9.1
Incr Delay (d2), s/veh	0.1	0.4	0.4	0.1	0.2	0.2	0.0	0.0	0.2	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.5	0.5	0.3	0.4	0.4	0.0	0.0	0.3	0.1	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.8	21.4	21.4	19.6	20.6	20.6	9.4	0.0	10.0	9.0	0.0	9.2
LnGrp LOS	B	C	C	B	C	C	A	A	A	A	A	A
Approach Vol, veh/h	113			107			48			50		
Approach Delay, s/veh	21.1			20.3			9.9			9.1		
Approach LOS	C			C			A			A		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	29.0	6.6	13.6	6.8	28.0	7.1	13.0				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
Max Green Setting (Gmax), s	12.5	22.5	12.5	29.5	12.5	22.5	12.5	29.5				
Max Q Clear Time (g_c+I1), s	2.1	2.4	2.5	3.0	2.4	2.8	2.9	3.3				
Green Ext Time (p_c), s	0.0	0.1	0.0	0.3	0.0	0.1	0.0	0.4				
Intersection Summary												
HCM 6th Ctrl Delay	17.3											
HCM 6th LOS	B											
Notes												



HCM 6th Signalized Intersection Summary  
2361: SW 15th St & Kilpatrick Turnpike

11/20/2023

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	46	96	67	12	0	0
Future Volume (veh/h)	46	96	67	12	0	0
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Work Zone On Approach		No	No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870		
Adj Flow Rate, veh/h	54	113	79	14		
Peak Hour Factor	0.85	0.85	0.85	0.85		
Percent Heavy Veh, %	2	2	2	2		
Cap, veh/h	948	2448	942	163		
Arrive On Green	0.07	0.69	0.31	0.31		
Sat Flow, veh/h	1781	3647	3123	524		
Grp Volume(v), veh/h	54	113	46	47		
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1776		
Q Serve(g_s), s	0.3	0.2	0.3	0.3		
Cycle Q Clear(g_c), s	0.3	0.2	0.3	0.3		
Prop In Lane	1.00			0.29		
Lane Grp Cap(c), veh/h	948	2448	553	553		
V/C Ratio(X)	0.06	0.05	0.08	0.09		
Avail Cap(c_a), veh/h	3046	6634	3317	3315		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	2.2	0.8	3.9	3.9		
Incr Delay (d2), s/veh	0.0	0.0	0.1	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.0		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	2.3	0.8	4.0	4.0		
LnGrp LOS	A	A	A	A		
Approach Vol, veh/h		167	93			
Approach Delay, s/veh		1.3	4.0			
Approach LOS		A	A			
Timer - Assigned Phs			3	4		8
Phs Duration (G+Y+Rc), s			6.1	10.0		16.1
Change Period (Y+Rc), s			5.0	5.0		5.0
Max Green Setting (Gmax), s			20.0	30.0		30.0
Max Q Clear Time (g_c+I1), s			2.3	2.3		2.2
Green Ext Time (p_c), s			0.1	0.4		0.6
Intersection Summary						
HCM 6th Ctrl Delay			2.2			
HCM 6th LOS			A			

























HCM 6th Signalized Intersection Summary  
2362: SW 15th St & Kilpatrick Turnpike

11/20/2023

	EBL	EBT	WBT	WBR	SBL	SBR
Movement						
Lane Configurations		↑↑↑	↑↑		↖	↗
Traffic Volume (veh/h)	0	129	67	0	25	137
Future Volume (veh/h)	0	129	67	0	25	137
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	152	79	0	29	161
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1413	983	0	303	270
Arrive On Green	0.00	0.28	0.28	0.00	0.17	0.17
Sat Flow, veh/h	0	5443	3741	0	1781	1585
Grp Volume(v), veh/h	0	152	79	0	29	161
Grp Sat Flow(s),veh/h/ln	0	1702	1777	0	1781	1585
Q Serve(g_s), s	0.0	0.4	0.3	0.0	0.2	1.7
Cycle Q Clear(g_c), s	0.0	0.4	0.3	0.0	0.2	1.7
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1413	983	0	303	270
V/C Ratio(X)	0.00	0.11	0.08	0.00	0.10	0.60
Avail Cap(c_a), veh/h	0	8475	5899	0	1971	1754
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	4.9	4.8	0.0	6.3	6.9
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.0	0.0	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	4.9	4.9	0.0	6.5	9.0
LnGrp LOS	A	A	A	A	A	A
Approach Vol, veh/h		152	79		190	
Approach Delay, s/veh		4.9	4.9		8.6	
Approach LOS		A	A		A	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		8.1		10.0		10.0
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		20.0		30.0		30.0
Max Q Clear Time (g_c+I1), s		3.7		2.3		2.4
Green Ext Time (p_c), s		0.5		0.4		0.8
Intersection Summary						
HCM 6th Ctrl Delay			6.6			
HCM 6th LOS			A			

# HCM Signalized Intersection Capacity Analysis 396: EB I-40 Ramp/WB I-40 Ramp & Morgan Rd

11/20/2023

												
Movement	NBL	NBT	NBR	NBR2	SBL	SBT	SBR	SBR2	NEL	NER2	SWL	SWR2
Lane Configurations												
Traffic Volume (vph)	42	21	121	0	75	62	58	0	33	129	225	158
Future Volume (vph)	42	21	121	0	75	62	58	0	33	129	225	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	5.5			5.5	6.0			6.5	4.0	5.5	4.0
Lane Util. Factor	0.97	0.95			0.97	0.95			0.97	1.00	0.97	1.00
Frt	1.00	0.87			1.00	0.93			1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00			0.95	1.00			0.95	1.00	0.95	1.00
Satd. Flow (prot)	3433	3088			3433	3283			3433	1583	3433	1583
Flt Permitted	0.95	1.00			0.95	1.00			0.95	1.00	0.95	1.00
Satd. Flow (perm)	3433	3088			3433	3283			3433	1583	3433	1583
Peak-hour factor, PHF	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.85
Adj. Flow (vph)	49	25	142	0	88	73	68	0	39	152	265	186
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	49	167	0	0	88	141	0	0	39	152	265	186
Turn Type	Prot	NA		Prot	Prot	NA		Free	Prot	Free	Prot	Free
Protected Phases	1	6		6	5	2			3		7	
Permitted Phases								Free		Free		Free
Actuated Green, G (s)	2.6	15.2			4.0	14.6			8.4	45.1	9.4	45.1
Effective Green, g (s)	2.6	15.2			4.0	14.6			8.4	45.1	9.4	45.1
Actuated g/C Ratio	0.06	0.34			0.09	0.32			0.19	1.00	0.21	1.00
Clearance Time (s)	7.0	5.5			5.5	6.0			6.5		5.5	
Vehicle Extension (s)	3.0	3.0			3.0	3.0			3.0		3.0	
Lane Grp Cap (vph)	197	1040			304	1062			639	1583	715	1583
v/s Ratio Prot	0.01	c0.05			c0.03	0.04			0.01		c0.08	
v/s Ratio Perm										0.10		c0.12
v/c Ratio	0.25	0.16			0.29	0.13			0.06	0.10	0.37	0.12
Uniform Delay, d1	20.3	10.5			19.2	10.8			15.1	0.0	15.3	0.0
Progression Factor	1.00	1.00			1.00	1.00			1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.1			0.5	0.1			0.0	0.1	0.3	0.2
Delay (s)	21.0	10.6			19.8	10.8			15.1	0.1	15.6	0.2
Level of Service	C	B			B	B			B	A	B	A
Approach Delay (s)		12.9				14.3						
Approach LOS		B				B						
<b>Intersection Summary</b>												
HCM 2000 Control Delay		10.0				HCM 2000 Level of Service			A			
HCM 2000 Volume to Capacity ratio		0.28										
Actuated Cycle Length (s)		45.1				Sum of lost time (s)			19.5			
Intersection Capacity Utilization		41.7%				ICU Level of Service			A			
Analysis Period (min)		15										

c Critical Lane Group

HCM 6th TWSC  
17: S Mustang Rd & SW 11th St

11/20/2023

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↖		↗	↔			↔		
Traffic Vol, veh/h	4	0	17	0	0	0	25	271	4	0	325	42
Future Vol, veh/h	4	0	17	0	0	0	25	271	4	0	325	42
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	-	-	-	0	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	20	0	0	0	29	319	5	0	382	49

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	625	789	216	571	-	162	431	0
Stage 1	407	407	-	380	-	-	-	-
Stage 2	218	382	-	191	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	-	6.94	4.14	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	-	3.32	2.22	-
Pot Cap-1 Maneuver	369	321	789	404	0	854	1125	-
Stage 1	592	596	-	614	0	-	-	-
Stage 2	764	611	-	792	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	360	311	789	385	-	854	1125	-
Mov Cap-2 Maneuver	360	311	-	385	-	-	-	-
Stage 1	574	596	-	595	-	-	-	-
Stage 2	740	592	-	772	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.8	0	0.8	0
HCM LOS	B	A		






















  

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1125	-	-	643	-	-	1233	-	-
HCM Lane V/C Ratio	0.026	-	-	0.038	-	-	-	-	-
HCM Control Delay (s)	8.3	0.1	-	10.8	0	0	0	-	-
HCM Lane LOS	A	A	-	B	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	-	0	-	-



HCM 6th Signalized Intersection Summary  
401: Morgan Rd & Reno Ave





















11/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	125	234	163	451	104	551	316	50	21	246	84
Future Volume (veh/h)	50	125	234	163	451	104	551	316	50	21	246	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	59	147	275	192	531	122	648	372	59	25	289	99
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	76	359	321	184	756	173	654	1728	771	35	362	122
Arrive On Green	0.04	0.20	0.20	0.10	0.26	0.26	0.37	0.49	0.49	0.02	0.14	0.14
Sat Flow, veh/h	1781	1777	1585	1781	2872	657	1781	3554	1585	1781	2613	877
Grp Volume(v), veh/h	59	147	275	192	328	325	648	372	59	25	195	193
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1752	1781	1777	1585	1781	1777	1713
Q Serve(g_s), s	3.5	7.6	17.8	11.0	17.7	17.8	38.4	6.4	2.1	1.5	11.2	11.6
Cycle Q Clear(g_c), s	3.5	7.6	17.8	11.0	17.7	17.8	38.4	6.4	2.1	1.5	11.2	11.6
Prop In Lane	1.00		1.00	1.00		0.38	1.00		1.00	1.00		0.51
Lane Grp Cap(c), veh/h	76	359	321	184	467	461	654	1728	771	35	246	237
V/C Ratio(X)	0.77	0.41	0.86	1.04	0.70	0.71	0.99	0.22	0.08	0.71	0.79	0.81
Avail Cap(c_a), veh/h	151	502	448	184	535	528	654	1728	771	134	335	322
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.3	36.8	40.9	47.6	35.4	35.4	33.4	15.7	14.6	51.8	44.2	44.4
Incr Delay (d2), s/veh	15.2	0.7	11.4	77.4	3.4	3.6	32.7	0.3	0.2	23.5	8.7	11.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	3.3	7.7	8.6	7.7	7.6	21.3	2.5	0.8	0.9	5.4	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.6	37.6	52.2	125.0	38.8	39.0	66.2	15.9	14.8	75.3	52.9	55.4
LnGrp LOS	E	D	D	F	D	D	E	B	B	E	D	E
Approach Vol, veh/h	481			845			1079			413		
Approach Delay, s/veh	49.4			58.5			46.0			55.4		
Approach LOS	D			E			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	44.0	19.7	9.5	32.9	7.1	56.6	16.0	26.5				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	39.0	20.0	9.0	32.0	8.0	51.0	11.0	30.0				
Max Q Clear Time (g_c+I1), s	40.4	13.6	5.5	19.8	3.5	8.4	13.0	19.8				
Green Ext Time (p_c), s	0.0	1.1	0.0	2.8	0.0	2.5	0.0	1.7				
Intersection Summary												
HCM 6th Ctrl Delay	51.7											
HCM 6th LOS	D											























HCM 6th Signalized Intersection Summary  
403: Morgan Rd & SW 15th St

11/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	221	146	229	21	163	71	142	362	17	87	687	715
Future Volume (veh/h)	221	146	229	21	163	71	142	362	17	87	687	715
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	260	172	269	25	192	84	167	426	20	102	808	841
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	238	390	348	34	256	108	148	1766	83	127	887	791
Arrive On Green	0.13	0.22	0.22	0.02	0.11	0.11	0.08	0.51	0.51	0.07	0.50	0.50
Sat Flow, veh/h	1781	1777	1585	1781	2436	1026	1781	3456	162	1781	1777	1585
Grp Volume(v), veh/h	260	172	269	25	138	138	167	219	227	102	808	841
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1686	1781	1777	1841	1781	1777	1585
Q Serve(g_s), s	16.0	10.0	19.1	1.7	9.0	9.6	10.0	8.2	8.3	6.8	50.1	59.9
Cycle Q Clear(g_c), s	16.0	10.0	19.1	1.7	9.0	9.6	10.0	8.2	8.3	6.8	50.1	59.9
Prop In Lane	1.00		1.00	1.00		0.61	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	238	390	348	34	187	177	148	908	941	127	887	791
V/C Ratio(X)	1.09	0.44	0.77	0.74	0.74	0.78	1.13	0.24	0.24	0.80	0.91	1.06
Avail Cap(c_a), veh/h	238	466	416	119	348	330	148	908	941	193	887	791
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	1.00	1.00	1.00	1.00	1.00	1.00	0.90	0.90	0.90
Uniform Delay (d), s/veh	52.0	40.4	44.0	58.6	52.1	52.3	55.0	16.4	16.4	54.9	27.6	30.1
Incr Delay (d2), s/veh	82.2	0.7	6.4	27.3	5.6	7.2	111.4	0.6	0.6	12.0	13.9	48.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.4	4.3	7.9	1.0	4.2	4.3	9.0	3.3	3.5	3.4	23.2	31.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	134.2	41.1	50.4	85.9	57.7	59.5	166.4	17.0	17.0	66.9	41.6	78.7
LnGrp LOS	F	D	D	F	E	E	F	B	B	E	D	F
Approach Vol, veh/h	701			301			613			1751		
Approach Delay, s/veh	79.2			60.9			57.7			60.9		
Approach LOS	E			E			E			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	65.9	21.0	18.1	13.5	67.3	7.3	31.9				
Change Period (Y+Rc), s	5.0	6.0	5.0	5.5	5.0	6.0	5.0	5.5				
Max Green Setting (Gmax), s	10.0	49.0	16.0	23.5	13.0	46.0	8.0	31.5				
Max Q Clear Time (g_c+I1), s	12.0	61.9	18.0	11.6	8.8	10.3	3.7	21.1				
Green Ext Time (p_c), s	0.0	0.0	0.0	1.1	0.1	2.5	0.0	1.8				
Intersection Summary												
HCM 6th Ctrl Delay	64.1											
HCM 6th LOS	E											

HCM 6th Signalized Intersection Summary  
575: Sara Rd & Reno Ave





















11/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	137	605	492	583	50	230	183	88	58	259	204
Future Volume (veh/h)	79	137	605	492	583	50	230	183	88	58	259	204
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	93	161	712	579	686	59	271	215	104	68	305	240
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	117	394	352	419	1295	111	299	722	337	87	360	276
Arrive On Green	0.07	0.22	0.22	0.23	0.39	0.39	0.17	0.31	0.31	0.05	0.19	0.19
Sat Flow, veh/h	1781	1777	1585	1781	3311	285	1781	2353	1097	1781	1915	1468
Grp Volume(v), veh/h	93	161	712	579	368	377	271	160	159	68	282	263
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1819	1781	1777	1673	1781	1777	1606
Q Serve(g_s), s	5.9	8.9	25.5	27.0	18.3	18.3	17.2	7.9	8.3	4.3	17.6	18.2
Cycle Q Clear(g_c), s	5.9	8.9	25.5	27.0	18.3	18.3	17.2	7.9	8.3	4.3	17.6	18.2
Prop In Lane	1.00		1.00	1.00		0.16	1.00		0.66	1.00		0.91
Lane Grp Cap(c), veh/h	117	394	352	419	695	711	299	545	513	87	334	302
V/C Ratio(X)	0.79	0.41	2.02	1.38	0.53	0.53	0.91	0.29	0.31	0.78	0.85	0.87
Avail Cap(c_a), veh/h	202	394	352	419	695	711	326	572	539	155	387	349
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.9	38.2	44.7	43.9	26.9	26.9	46.9	30.3	30.5	54.0	45.0	45.3
Incr Delay (d2), s/veh	11.3	0.7	470.7	186.8	0.8	0.7	26.3	0.3	0.3	13.7	14.2	18.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	3.8	55.6	33.1	7.5	7.7	9.6	3.4	3.3	2.2	8.9	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.1	38.9	515.4	230.7	27.6	27.6	73.2	30.6	30.8	67.7	59.2	63.7
LnGrp LOS	E	D	F	F	C	C	E	C	C	E	E	E
Approach Vol, veh/h	966			1324			590			613		
Approach Delay, s/veh	392.5			116.4			50.2			62.1		
Approach LOS	F			F			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	24.3	27.6	12.6	50.4	10.6	41.3	32.0	31.0				
Change Period (Y+Rc), s	5.0	6.0	5.0	5.5	5.0	* 6	5.0	5.5				
Max Green Setting (Gmax), s	21.0	25.0	13.0	39.5	10.0	* 37	27.0	25.5				
Max Q Clear Time (g_c+I1), s	19.2	20.2	7.9	20.3	6.3	10.3	29.0	27.5				
Green Ext Time (p_c), s	0.2	1.4	0.1	4.0	0.0	1.8	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay	172.1											
HCM 6th LOS	F											
Notes												












# HCM 6th Signalized Intersection Summary 576: Sara Rd & SW 15th St

11/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	560	375	62	121	263	579	106	193	83	163	212	109
Future Volume (veh/h)	560	375	62	121	263	579	106	193	83	163	212	109
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	659	441	73	142	309	681	125	227	98	192	249	128
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	617	1422	234	399	407	363	171	243	105	217	247	127
Arrive On Green	0.31	0.47	0.47	0.08	0.23	0.23	0.06	0.20	0.20	0.08	0.21	0.21
Sat Flow, veh/h	1781	3054	502	1781	1777	1585	1781	1239	535	1781	1164	598
Grp Volume(v), veh/h	659	255	259	142	309	681	125	0	325	192	0	377
Grp Sat Flow(s),veh/h/ln	1781	1777	1780	1781	1777	1585	1781	0	1774	1781	0	1763
Q Serve(g_s), s	37.5	10.8	10.9	7.2	19.5	27.5	6.7	0.0	21.6	9.5	0.0	25.5
Cycle Q Clear(g_c), s	37.5	10.8	10.9	7.2	19.5	27.5	6.7	0.0	21.6	9.5	0.0	25.5
Prop In Lane	1.00		0.28	1.00		1.00	1.00		0.30	1.00		0.34
Lane Grp Cap(c), veh/h	617	827	828	399	407	363	171	0	347	217	0	375
V/C Ratio(X)	1.07	0.31	0.31	0.36	0.76	1.87	0.73	0.00	0.94	0.88	0.00	1.01
Avail Cap(c_a), veh/h	617	827	828	404	407	363	171	0	347	217	0	375
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.3	20.0	20.1	31.5	43.2	46.3	37.8	0.0	47.5	39.2	0.0	47.3
Incr Delay (d2), s/veh	56.0	0.2	0.2	0.5	8.1	404.0	14.6	0.0	34.4	31.9	0.0	48.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.8	4.3	4.4	3.1	9.2	51.2	3.6	0.0	12.6	6.4	0.0	15.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	90.2	20.2	20.3	32.0	51.2	450.3	52.4	0.0	81.9	71.1	0.0	95.4
LnGrp LOS	F	C	C	C	D	F	D	A	F	E	A	F
Approach Vol, veh/h	1173			1132			450			569		
Approach Delay, s/veh	59.6			288.9			73.7			87.2		
Approach LOS	E			F			E			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	31.0	43.0	33.0	15.0	29.0	14.6	61.4				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
Max Green Setting (Gmax), s	7.5	25.5	37.5	27.5	9.5	23.5	9.5	55.5				
Max Q Clear Time (g_c+l1), s	8.7	27.5	39.5	29.5	11.5	23.6	9.2	12.9				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0				
Intersection Summary												
HCM 6th Ctrl Delay	144.3											
HCM 6th LOS	F											
Notes												

HCM 6th Signalized Intersection Summary  
2361: SW 15th St & Kilpatrick Turnpike


11/20/2023

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	271	1580	306	74	0	0
Future Volume (veh/h)	271	1580	306	74	0	0
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Work Zone On Approach		No	No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870		
Adj Flow Rate, veh/h	319	1859	360	87		
Peak Hour Factor	0.85	0.85	0.85	0.85		
Percent Heavy Veh, %	2	2	2	2		
Cap, veh/h	938	3113	1797	429		
Arrive On Green	0.12	0.88	0.63	0.63		
Sat Flow, veh/h	1781	3647	2939	679		
Grp Volume(v), veh/h	319	1859	223	224		
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1748		
Q Serve(g_s), s	1.7	5.5	2.1	2.2		
Cycle Q Clear(g_c), s	1.7	5.5	2.1	2.2		
Prop In Lane	1.00			0.39		
Lane Grp Cap(c), veh/h	938	3113	1122	1104		
V/C Ratio(X)	0.34	0.60	0.20	0.20		
Avail Cap(c_a), veh/h	1827	10131	3744	3683		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	1.3	0.6	3.1	3.1		
Incr Delay (d2), s/veh	0.2	0.2	0.1	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.2	0.2		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	1.5	0.8	3.2	3.2		
LnGrp LOS	A	A	A	A		
Approach Vol, veh/h		2178	447			
Approach Delay, s/veh		0.9	3.2			
Approach LOS		A	A			
Timer - Assigned Phs			3	4		8
Phs Duration (G+Y+Rc), s			9.9	30.5		40.3
Change Period (Y+Rc), s			5.0	5.0		5.0
Max Green Setting (Gmax), s			25.0	85.0		115.0
Max Q Clear Time (g_c+I1), s			3.7	4.2		7.5
Green Ext Time (p_c), s			0.9	2.6		27.9
Intersection Summary						
HCM 6th Ctrl Delay			1.3			
HCM 6th LOS			A			


























HCM 6th Signalized Intersection Summary  
2362: SW 15th St & Kilpatrick Turnpike

11/20/2023

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑		↗	↗
Traffic Volume (veh/h)	8	919	289	4	920	694
Future Volume (veh/h)	8	919	289	4	920	694
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	9	1081	340	5	1082	816
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	39	1412	1025	15	1102	981
Arrive On Green	0.29	0.29	0.29	0.29	0.62	0.62
Sat Flow, veh/h	14	5095	3679	53	1781	1585
Grp Volume(v), veh/h	409	681	168	177	1082	816
Grp Sat Flow(s),veh/h/ln	1859	1549	1777	1861	1781	1585
Q Serve(g_s), s	1.6	21.0	7.8	7.8	61.7	42.3
Cycle Q Clear(g_c), s	21.0	21.0	7.8	7.8	61.7	42.3
Prop In Lane	0.02			0.03	1.00	1.00
Lane Grp Cap(c), veh/h	566	885	508	532	1102	981
V/C Ratio(X)	0.72	0.77	0.33	0.33	0.98	0.83
Avail Cap(c_a), veh/h	832	1332	764	800	1107	985
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.2	34.2	29.5	29.5	19.4	15.7
Incr Delay (d2), s/veh	1.8	1.6	0.4	0.4	22.6	6.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.3	7.7	3.2	3.4	27.7	14.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.9	35.8	29.9	29.8	42.0	21.8
LnGrp LOS	D	D	C	C	D	C
Approach Vol, veh/h		1090	345		1898	
Approach Delay, s/veh		35.8	29.9		33.3	
Approach LOS		D	C		C	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		69.7		34.9		34.9
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		65.0		45.0		45.0
Max Q Clear Time (g_c+I1), s		63.7		9.8		23.0
Green Ext Time (p_c), s		1.0		1.8		6.9
<b>Intersection Summary</b>						
HCM 6th Ctrl Delay			33.8			
HCM 6th LOS			C			









# HCM Signalized Intersection Capacity Analysis 396: EB I-40 Ramp/WB I-40 Ramp & Morgan Rd

11/20/2023

												
Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	NBR2	SBL	SBT	SBR	SBR2
Lane Configurations					 	 		 	 	 		
Traffic Volume (vph)	326	409	771	629	231	150	352	0	194	260	193	0
Future Volume (vph)	326	409	771	629	231	150	352	0	194	260	193	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					7.0	5.5			5.5	6.0		
Lane Util. Factor					0.97	0.95			0.97	0.95		
Frt					1.00	0.89			1.00	0.94		
Flt Protected					0.95	1.00			0.95	1.00		
Satd. Flow (prot)					3433	3167			3433	3313		
Flt Permitted					0.95	1.00			0.95	1.00		
Satd. Flow (perm)					3433	3167			3433	3313		
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	384	481	907	740	272	176	414	0	228	306	227	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	272	590	0	0	228	533	0	0
Turn Type	Perm		Perm		Prot	NA		Prot	Prot	NA		Free
Protected Phases					1	6		6	5	2		
Permitted Phases	4!		8!									Free
Actuated Green, G (s)					9.5	15.9			8.9	13.3		
Effective Green, g (s)					9.5	15.9			8.9	13.3		
Actuated g/C Ratio					0.27	0.44			0.25	0.37		
Clearance Time (s)					7.0	5.5			5.5	6.0		
Vehicle Extension (s)					3.0	3.0			3.0	3.0		
Lane Grp Cap (vph)					910	1406			853	1230		
v/s Ratio Prot					c0.08	c0.19			0.07	0.16		
v/s Ratio Perm												
v/c Ratio					0.30	0.42			0.27	0.43		
Uniform Delay, d1					10.5	6.8			10.8	8.4		
Progression Factor					1.00	1.00			1.00	1.00		
Incremental Delay, d2					0.2	0.2			0.2	0.2		
Delay (s)					10.7	7.0			11.0	8.7		
Level of Service					B	A			B	A		
Approach Delay (s)						8.2				9.4		
Approach LOS						A				A		
Intersection Summary												
HCM 2000 Control Delay	Error			HCM 2000 Level of Service						F		
HCM 2000 Volume to Capacity ratio	0.81											
Actuated Cycle Length (s)	35.8			Sum of lost time (s)						24.0		
Intersection Capacity Utilization	Err%			ICU Level of Service						H		
Analysis Period (min)	15											
! Phase conflict between lane groups.												
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
396: EB I-40 Ramp/WB I-40 Ramp & Morgan Rd

11/20/2023

				
Movement	NEL	NER2	SWL	SWR2
Lane Configurations				
Traffic Volume (vph)	0	0	0	0
Future Volume (vph)	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Peak-hour factor, PHF	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	0	0	0
RTOR Reduction (vph)	0	0	0	0
Lane Group Flow (vph)	0	0	0	0
Turn Type	Prot	Free	Prot	Free
Protected Phases	3!		7!	
Permitted Phases		Free		Free
Actuated Green, G (s)				
Effective Green, g (s)				
Actuated g/C Ratio				
Clearance Time (s)				
Vehicle Extension (s)				
Lane Grp Cap (vph)				
v/s Ratio Prot				
v/s Ratio Perm				
v/c Ratio				
Uniform Delay, d1				
Progression Factor				
Incremental Delay, d2				
Delay (s)				
Level of Service				
Approach Delay (s)				
Approach LOS				
Intersection Summary				



HCM 6th TWSC  
17: S Mustang Rd & SW 11th St






















11/20/2023

Intersection												
Int Delay, s/veh	4.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↖		↗	↔			↔		
Traffic Vol, veh/h	12	0	46	0	0	8	54	868	102	120	1273	75
Future Vol, veh/h	12	0	46	0	0	8	54	868	102	120	1273	75
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	-	-	-	0	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	0	54	0	0	9	64	1021	120	141	1498	88
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	2463	3093	793	2240	-	571	1586	0	0	1141	0	0
Stage 1	1824	1824	-	1209	-	-	-	-	-	-	-	-
Stage 2	639	1269	-	1031	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	16	12	331	23	0	464	410	-	-	608	-	-
Stage 1	80	127	-	194	0	-	-	-	-	-	-	-
Stage 2	431	238	-	249	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	0	331	-	-	464	410	-	-	608	-	-
Mov Cap-2 Maneuver	-	0	-	-	-	-	-	-	-	-	-	-
Stage 1	45	0	-	108	-	-	-	-	-	-	-	-
Stage 2	235	133	-	-	-	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s			12.9		3.4		5.6					
HCM LOS	-		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR			
Capacity (veh/h)	410	-	-	-	-	-	464	608	-	-	-	-
HCM Lane V/C Ratio	0.155	-	-	-	-	-	0.02	0.232	-	-	-	-
HCM Control Delay (s)	15.4	3	-	-	-	0	12.9	12.7	5.3	-	-	-
HCM Lane LOS	C	A	-	-	-	A	B	B	A	-	-	-
HCM 95th %tile Q(veh)	0.5	-	-	-	-	-	0.1	0.9	-	-	-	-























HCM 6th Signalized Intersection Summary  
401: Morgan Rd & Reno Ave

11/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	62	300	17	75	17	149	79	4	12	71	0
Future Volume (veh/h)	83	62	300	17	75	17	149	79	4	12	71	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	98	73	353	20	88	20	175	93	5	14	84	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	462	412	31	597	132	216	1721	767	23	1337	0
Arrive On Green	0.07	0.26	0.26	0.02	0.21	0.21	0.12	0.48	0.48	0.01	0.38	0.00
Sat Flow, veh/h	1781	1777	1585	1781	2894	638	1781	3554	1585	1781	3647	0
Grp Volume(v), veh/h	98	73	353	20	53	55	175	93	5	14	84	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1755	1781	1777	1585	1781	1777	0
Q Serve(g_s), s	4.8	2.8	18.8	1.0	2.2	2.3	8.5	1.2	0.1	0.7	1.3	0.0
Cycle Q Clear(g_c), s	4.8	2.8	18.8	1.0	2.2	2.3	8.5	1.2	0.1	0.7	1.3	0.0
Prop In Lane	1.00		1.00	1.00		0.36	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	127	462	412	31	366	362	216	1721	767	23	1337	0
V/C Ratio(X)	0.77	0.16	0.86	0.64	0.14	0.15	0.81	0.05	0.01	0.60	0.06	0.00
Avail Cap(c_a), veh/h	381	740	660	201	560	553	582	1721	767	201	1337	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	40.5	25.4	31.3	43.3	28.8	28.9	38.0	12.1	11.9	43.6	17.7	0.0
Incr Delay (d2), s/veh	9.5	0.2	6.4	19.7	0.2	0.2	7.1	0.1	0.0	22.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	1.1	7.4	0.6	0.9	0.9	3.9	0.5	0.0	0.4	0.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.0	25.5	37.7	63.1	29.0	29.1	45.1	12.2	11.9	65.6	17.7	0.0
LnGrp LOS	D	C	D	E	C	C	D	B	B	E	B	A
Approach Vol, veh/h	524			128			273			98		
Approach Delay, s/veh	38.3			34.4			33.3			24.6		
Approach LOS	D			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.8	38.4	11.3	23.3	6.2	48.0	6.6	28.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	29.0	24.0	19.0	28.0	10.0	43.0	10.0	37.0				
Max Q Clear Time (g_c+I1), s	10.5	3.3	6.8	4.3	2.7	3.2	3.0	20.8				
Green Ext Time (p_c), s	0.4	0.3	0.2	0.4	0.0	0.5	0.0	2.3				
Intersection Summary												
HCM 6th Ctrl Delay	35.2											
HCM 6th LOS	D											

HCM 6th Signalized Intersection Summary  
403: Morgan Rd & SW 15th St





















11/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	346	58	71	0	12	12	33	79	8	37	216	141
Future Volume (veh/h)	346	58	71	0	12	12	33	79	8	37	216	141
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	407	68	84	0	14	14	39	93	9	44	254	166
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	438	531	474	1	34	29	50	1821	174	57	1169	738
Arrive On Green	0.25	0.30	0.30	0.00	0.02	0.02	0.03	0.56	0.56	0.03	0.56	0.56
Sat Flow, veh/h	1781	1777	1585	1781	1809	1558	1781	3278	313	1781	2091	1319
Grp Volume(v), veh/h	407	68	84	0	14	14	39	50	52	44	214	206
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1590	1781	1777	1814	1781	1777	1633
Q Serve(g_s), s	32.4	4.0	5.7	0.0	1.1	1.3	3.2	1.9	1.9	3.6	8.8	9.2
Cycle Q Clear(g_c), s	32.4	4.0	5.7	0.0	1.1	1.3	3.2	1.9	1.9	3.6	8.8	9.2
Prop In Lane	1.00		1.00	1.00		0.98	1.00		0.17	1.00		0.81
Lane Grp Cap(c), veh/h	438	531	474	1	33	30	50	987	1008	57	994	913
V/C Ratio(X)	0.93	0.13	0.18	0.00	0.41	0.48	0.78	0.05	0.05	0.78	0.22	0.23
Avail Cap(c_a), veh/h	848	1035	924	98	288	258	98	987	1008	98	994	913
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.76	0.76	0.76	0.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	53.5	37.1	37.6	0.0	70.4	70.5	70.0	14.7	14.7	69.7	16.0	16.1
Incr Delay (d2), s/veh	7.3	0.1	0.1	0.0	8.0	11.6	22.0	0.1	0.1	19.1	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.0	1.8	2.2	0.0	0.6	0.6	1.7	0.8	0.8	1.9	3.7	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.8	37.1	37.8	0.0	78.4	82.1	92.0	14.8	14.8	88.8	16.5	16.7
LnGrp LOS	E	D	D	A	E	F	F	B	B	F	B	B
Approach Vol, veh/h	559				28				141			
Approach Delay, s/veh	54.4				80.3				36.2			
Approach LOS	D				F				D			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.1	87.1	40.6	8.2	9.6	86.6	0.0	48.8				
Change Period (Y+Rc), s	5.0	6.0	5.0	5.5	5.0	6.0	5.0	5.5				
Max Green Setting (Gmax), s	8.0	23.0	69.0	23.5	8.0	23.0	8.0	84.5				
Max Q Clear Time (g_c+I1), s	5.2	11.2	34.4	3.3	5.6	3.9	0.0	7.7				
Green Ext Time (p_c), s	0.0	1.8	1.2	0.1	0.0	0.4	0.0	0.9				
Intersection Summary												
HCM 6th Ctrl Delay	40.8											
HCM 6th LOS	D											























HCM 6th Signalized Intersection Summary  
575: Sara Rd & Reno Ave

11/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	62	132	87	117	25	400	58	379	8	25	21
Future Volume (veh/h)	42	62	132	87	117	25	400	58	379	8	25	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	49	73	155	102	138	29	471	68	446	9	29	25
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	68	256	229	132	529	109	552	679	606	17	157	119
Arrive On Green	0.04	0.14	0.14	0.07	0.18	0.18	0.31	0.38	0.38	0.01	0.08	0.08
Sat Flow, veh/h	1781	1777	1585	1781	2937	602	1781	1777	1585	1781	1921	1463
Grp Volume(v), veh/h	49	73	155	102	82	85	471	68	446	9	27	27
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1762	1781	1777	1585	1781	1777	1607
Q Serve(g_s), s	1.5	2.0	5.1	3.1	2.2	2.3	13.7	1.4	13.3	0.3	0.8	0.9
Cycle Q Clear(g_c), s	1.5	2.0	5.1	3.1	2.2	2.3	13.7	1.4	13.3	0.3	0.8	0.9
Prop In Lane	1.00		1.00	1.00		0.34	1.00		1.00	1.00		0.91
Lane Grp Cap(c), veh/h	68	256	229	132	320	317	552	679	606	17	145	131
V/C Ratio(X)	0.72	0.28	0.68	0.77	0.26	0.27	0.85	0.10	0.74	0.54	0.18	0.21
Avail Cap(c_a), veh/h	258	822	733	323	886	879	1195	1805	1610	258	838	758
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.2	21.1	22.4	25.1	19.4	19.5	17.8	10.9	14.6	27.2	23.6	23.7
Incr Delay (d2), s/veh	13.2	0.6	3.5	9.1	0.4	0.4	3.9	0.1	1.8	24.6	0.6	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.8	1.9	1.5	0.8	0.8	5.2	0.4	4.1	0.2	0.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.4	21.7	25.9	34.2	19.8	19.9	21.7	11.0	16.4	51.8	24.2	24.4
LnGrp LOS	D	C	C	C	B	B	C	B	B	D	C	C
Approach Vol, veh/h	277			269			985			63		
Approach Delay, s/veh	27.2			25.3			18.6			28.2		
Approach LOS	C			C			B			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.1	10.5	7.1	15.4	5.5	27.1	9.1	13.5				
Change Period (Y+Rc), s	5.0	6.0	5.0	5.5	5.0	* 6	5.0	5.5				
Max Green Setting (Gmax), s	37.0	26.0	8.0	27.5	8.0	* 56	10.0	25.5				
Max Q Clear Time (g_c+I1), s	15.7	2.9	3.5	4.3	2.3	15.3	5.1	7.1				
Green Ext Time (p_c), s	1.4	0.2	0.0	0.8	0.0	3.7	0.1	1.1				
Intersection Summary												
HCM 6th Ctrl Delay	21.6											
HCM 6th LOS	C											
Notes												

HCM 6th Signalized Intersection Summary  
576: Sara Rd & SW 15th St










11/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	475	129	29	54	87	4	25	12	208	54	229
Future Volume (veh/h)	107	475	129	29	54	87	4	25	12	208	54	229
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	126	559	152	34	64	102	5	29	14	245	64	269
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	415	727	197	189	382	341	407	393	190	720	138	581
Arrive On Green	0.07	0.26	0.26	0.03	0.21	0.21	0.01	0.33	0.33	0.12	0.44	0.44
Sat Flow, veh/h	1781	2763	749	1781	1777	1585	1781	1192	575	1781	314	1319
Grp Volume(v), veh/h	126	359	352	34	64	102	5	0	43	245	0	333
Grp Sat Flow(s),veh/h/ln	1781	1777	1736	1781	1777	1585	1781	0	1767	1781	0	1633
Q Serve(g_s), s	4.4	15.5	15.6	1.2	2.4	4.5	0.2	0.0	1.4	7.0	0.0	11.9
Cycle Q Clear(g_c), s	4.4	15.5	15.6	1.2	2.4	4.5	0.2	0.0	1.4	7.0	0.0	11.9
Prop In Lane	1.00		0.43	1.00		1.00	1.00		0.33	1.00		0.81
Lane Grp Cap(c), veh/h	415	467	456	189	382	341	407	0	583	720	0	719
V/C Ratio(X)	0.30	0.77	0.77	0.18	0.17	0.30	0.01	0.00	0.07	0.34	0.00	0.46
Avail Cap(c_a), veh/h	487	954	931	347	954	851	559	0	583	1041	0	719
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.3	28.2	28.3	25.2	26.5	27.3	18.4	0.0	19.1	13.6	0.0	16.3
Incr Delay (d2), s/veh	0.4	2.7	2.8	0.5	0.2	0.5	0.0	0.0	0.2	0.3	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	6.4	6.3	0.5	1.0	1.6	0.1	0.0	0.6	2.6	0.0	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.7	30.9	31.1	25.6	26.7	27.8	18.4	0.0	19.3	13.9	0.0	18.5
LnGrp LOS	C	C	C	C	C	C	B	A	B	B	A	B
Approach Vol, veh/h	837				200				48			
Approach Delay, s/veh	29.7				27.1				19.2			
Approach LOS	C				C				B			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.9	42.0	11.7	23.3	15.1	32.9	7.7	27.3				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
Max Green Setting (Gmax), s	7.5	36.5	9.5	44.5	24.5	19.5	9.5	44.5				
Max Q Clear Time (g_c+I1), s	2.2	13.9	6.4	6.5	9.0	3.4	3.2	17.6				
Green Ext Time (p_c), s	0.0	2.0	0.1	0.9	0.6	0.1	0.0	4.2				
Intersection Summary												
HCM 6th Ctrl Delay	24.5											
HCM 6th LOS	C											



HCM 6th Signalized Intersection Summary  
2361: SW 15th St & Kilpatrick Turnpike

11/20/2023

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	271	129	554	1062	0	0
Future Volume (veh/h)	271	129	554	1062	0	0
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Work Zone On Approach		No	No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870		
Adj Flow Rate, veh/h	319	152	652	1249		
Peak Hour Factor	0.85	0.85	0.85	0.85		
Percent Heavy Veh, %	2	2	2	2		
Cap, veh/h	403	3171	1147	1023		
Arrive On Green	0.14	0.89	0.65	0.65		
Sat Flow, veh/h	1781	3647	1870	1585		
Grp Volume(v), veh/h	319	152	652	1249		
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585		
Q Serve(g_s), s	3.8	0.2	9.5	30.0		
Cycle Q Clear(g_c), s	3.8	0.2	9.5	30.0		
Prop In Lane	1.00			1.00		
Lane Grp Cap(c), veh/h	403	3171	1147	1023		
V/C Ratio(X)	0.79	0.05	0.57	1.22		
Avail Cap(c_a), veh/h	922	4206	1147	1023		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	14.0	0.3	4.6	8.2		
Incr Delay (d2), s/veh	3.5	0.0	0.7	108.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.1	0.0	1.3	33.7		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.6	0.3	5.3	116.4		
LnGrp LOS	B	A	A	F		
Approach Vol, veh/h		471	1901			
Approach Delay, s/veh		12.0	78.3			
Approach LOS		B	E			
Timer - Assigned Phs		3	4		8	
Phs Duration (G+Y+Rc), s		11.5	35.0		46.5	
Change Period (Y+Rc), s		5.0	5.0		5.0	
Max Green Setting (Gmax), s		20.0	30.0		55.0	
Max Q Clear Time (g_c+I1), s		5.8	32.0		2.2	
Green Ext Time (p_c), s		0.8	0.0		0.9	
Intersection Summary						
HCM 6th Ctrl Delay			65.1			
HCM 6th LOS			E			























HCM 6th Signalized Intersection Summary  
2362: SW 15th St & Kilpatrick Turnpike

11/20/2023

	EBL	EBT	WBT	WBR	SBL	SBR
Movement						
Lane Configurations		↑↑↑	↑↑		↑	↑
Traffic Volume (veh/h)	0	388	554	0	81	137
Future Volume (veh/h)	0	388	554	0	81	137
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	456	652	0	95	161
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	2038	1418	0	309	275
Arrive On Green	0.00	0.40	0.40	0.00	0.17	0.17
Sat Flow, veh/h	0	5443	3741	0	1781	1585
Grp Volume(v), veh/h	0	456	652	0	95	161
Grp Sat Flow(s),veh/h/ln	0	1702	1777	0	1781	1585
Q Serve(g_s), s	0.0	1.4	3.2	0.0	1.1	2.2
Cycle Q Clear(g_c), s	0.0	1.4	3.2	0.0	1.1	2.2
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	2038	1418	0	309	275
V/C Ratio(X)	0.00	0.22	0.46	0.00	0.31	0.59
Avail Cap(c_a), veh/h	0	6550	4558	0	1523	1355
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	4.6	5.2	0.0	8.4	8.9
Incr Delay (d2), s/veh	0.0	0.1	0.2	0.0	0.6	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.2	0.0	0.2	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	4.7	5.4	0.0	9.0	10.9
LnGrp LOS	A	A	A	A	A	B
Approach Vol, veh/h		456	652		256	
Approach Delay, s/veh		4.7	5.4		10.2	
Approach LOS		A	A		B	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		9.1		14.3		14.3
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		20.0		30.0		30.0
Max Q Clear Time (g_c+I1), s		4.2		5.2		3.4
Green Ext Time (p_c), s		0.6		4.2		2.9
Intersection Summary						
HCM 6th Ctrl Delay			6.1			
HCM 6th LOS			A			

# HCM Signalized Intersection Capacity Analysis 396: EB I-40 Ramp/WB I-40 Ramp & Morgan Rd

11/20/2023

												
Movement	NBL	NBT	NBR	NBR2	SBL	SBT	SBR	SBR2	NEL	NER2	SWL	SWR2
Lane Configurations												
Traffic Volume (vph)	192	21	271	0	225	62	171	0	78	163	258	203
Future Volume (vph)	192	21	271	0	225	62	171	0	78	163	258	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	5.5			5.5	6.0			6.5	4.0	5.5	4.0
Lane Util. Factor	0.97	0.95			0.97	0.95			0.97	1.00	0.97	1.00
Frt	1.00	0.86			1.00	0.89			1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00			0.95	1.00			0.95	1.00	0.95	1.00
Satd. Flow (prot)	3433	3047			3433	3150			3433	1583	3433	1583
Flt Permitted	0.95	1.00			0.95	1.00			0.95	1.00	0.95	1.00
Satd. Flow (perm)	3433	3047			3433	3150			3433	1583	3433	1583
Peak-hour factor, PHF	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.85
Adj. Flow (vph)	226	25	319	0	265	73	201	0	92	192	304	239
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	226	344	0	0	265	274	0	0	92	192	304	239
Turn Type	Prot	NA		Prot	Prot	NA		Free	Prot	Free	Prot	Free
Protected Phases	1	6		6	5	2			3		7	
Permitted Phases								Free		Free		Free
Actuated Green, G (s)	9.3	14.3			9.6	12.6			10.9	52.3	11.9	52.3
Effective Green, g (s)	9.3	14.3			9.6	12.6			10.9	52.3	11.9	52.3
Actuated g/C Ratio	0.18	0.27			0.18	0.24			0.21	1.00	0.23	1.00
Clearance Time (s)	7.0	5.5			5.5	6.0			6.5		5.5	
Vehicle Extension (s)	3.0	3.0			3.0	3.0			3.0		3.0	
Lane Grp Cap (vph)	610	833			630	758			715	1583	781	1583
v/s Ratio Prot	0.07	c0.11			c0.08	0.09			0.03		c0.09	
v/s Ratio Perm										0.12		c0.15
v/c Ratio	0.37	0.41			0.42	0.36			0.13	0.12	0.39	0.15
Uniform Delay, d1	18.9	15.6			18.9	16.5			16.8	0.0	17.1	0.0
Progression Factor	1.00	1.00			1.00	1.00			1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.3			0.5	0.3			0.1	0.2	0.3	0.2
Delay (s)	19.3	15.9			19.3	16.8			16.9	0.2	17.4	0.2
Level of Service	B	B			B	B			B	A	B	A
Approach Delay (s)		17.2				18.1						
Approach LOS		B				B						
<b>Intersection Summary</b>												
HCM 2000 Control Delay		13.7				HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio		0.45										
Actuated Cycle Length (s)		52.3				Sum of lost time (s)			19.5			
Intersection Capacity Utilization		42.9%				ICU Level of Service			A			
Analysis Period (min)		15										

c Critical Lane Group



HCM 6th TWSC  
17: S Mustang Rd & SW 11th St

11/20/2023

Intersection												
Int Delay, s/veh	22.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↖		↖		↔			↔	
Traffic Vol, veh/h	4	0	17	75	0	263	194	683	4	0	358	42
Future Vol, veh/h	4	0	17	75	0	263	194	683	4	0	358	42
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	-	-	-	0	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	20	88	0	309	228	804	5	0	421	49
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1304	1711	235	1474	-	405	470	0	0	809	0	0
Stage 1	446	446	-	1263	-	-	-	-	-	-	-	-
Stage 2	858	1265	-	211	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	118	90	767	~ 88	0	595	1088	-	-	812	-	-
Stage 1	561	572	-	180	0	-	-	-	-	-	-	-
Stage 2	318	239	-	771	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	40	56	767	~ 60	-	595	1088	-	-	812	-	-
Mov Cap-2 Maneuver	40	56	-	~ 60	-	-	-	-	-	-	-	-
Stage 1	347	572	-	111	-	-	-	-	-	-	-	-
Stage 2	94	148	-	751	-	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	29.4		101.5		2.9		0					
HCM LOS	D		F									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR			
Capacity (veh/h)	1088	-	-	172	60	595	812	-	-			
HCM Lane V/C Ratio	0.21	-	-	0.144	1.471	0.52	-	-	-			
HCM Control Delay (s)	9.2	1.1	-	29.4	396.5	17.4	0	-	-			
HCM Lane LOS	A	A	-	D	F	C	A	-	-			
HCM 95th %tile Q(veh)	0.8	-	-	0.5	7.8	3	0	-	-			
Notes												
~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    *: All major volume in platoon												