



# Belinder Avenue Low Water Crossing

Traffic Study

*Mission Hills, Kansas*

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Prepared for: **City of Mission Hills**

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Mission Hills, KS 66208

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## 1.0 INTRODUCTION

The Belinder Low Water Crossing (BLWC) is located just south of the intersection of Belinder Avenue and State Park Road in Mission Hills, Kansas. The BLWC is located at the confluence of Brush Creek and Rock Creek. As the name suggests, the BLWC is located within the floodway of the creeks and is impassible during high water. There are gates located on either end of the BLWC that are normally open. Currently, the gates are manually closed by law enforcement when there is a threat of high water.



***Belinder Low Water Crossing (BLWC) Looking North***

The City is currently determining options to improve the BLWC. The City has commissioned several stormwater studies in recent years to determine the effects of potential design options. Options include replacing or removing the BLWC. When making decisions, the City would like to better understand the volume of vehicles, bicycles, and pedestrians using the BLWC and how closure of the BLWC would impact traffic patterns on the surrounding street network.

### 1.1 REPORT PURPOSE AND OBJECTIVES

The purpose of this study is to address traffic and transportation impacts resulting from removal of the BLWC on surrounding streets and intersections. The following information is provided:

- A description and map of the existing street network and study intersections to be affected by the removal of the BLWC. This information includes existing roadway characteristics and existing conditions (year 2023) traffic volumes.
- Determine the travel patterns of vehicle, bicycle, and pedestrian trips using the BLWC and the origins and destinations of those trips in or through the surrounding area.

- Redistribute trips using the BLWC to alternate routes in the surrounding area based on trip origin and destination data.
- Analysis of impacts of removing the BLWC on the street network, including analysis of peak period levels of service (LOS), delay times, and queuing at study area intersections.
- Evaluation of vehicular, bicycle, and pedestrian travel times to and from destinations in the surrounding area with and without the BLWC.
- Summarize comments from emergency service providers regarding removal of the BLWC and the impacts to emergency response times.
- Identification of potential improvements to the street, bicycle, and/or pedestrian network to address any deficiencies created by the removal of the BLWC.

In summary, the study is to evaluate the impacts resulting from the removal of the BLWC on vehicular, bicycle, and pedestrian traffic by documenting existing travel patterns in the surrounding area, redistributing trips for removal of the BLWC, analyzing existing and redistributed traffic conditions to determine the impacts on the surrounding area, and identify potential improvements to address deficiencies resulting from removal of the BLWC.

## 2.0 EXISTING CONDITIONS

### 2.1 STUDY AREA

The study area is bounded by State Line Road on the east, 63<sup>rd</sup> Street on the south, Mission Road on the west, and Shawnee Mission Parkway on the north. Most of this area consists of single-family residences and private golf courses. The Mission Hills Country Club and the Kansas City Country Club are located on the east and west sides of the BLWC, respectively. In the northern portion of the study area there are some commercial land uses along Shawnee Mission Parkway.

The study area includes the northern portion of the City of Mission Hills and the eastern portion of the City of Fairway, which was determined to be the area most impacted by the potential removal of the BLWC. The boundary between Mission Hills and Fairway follows the along the northern and western edges of the golf courses.

A map of the study area showing the location of the BLWC is shown on **Exhibit 1**.

The following intersections were included within the study area for the traffic analysis. The list provides the existing intersection control for each of the study intersections.

- 63<sup>rd</sup> Street & Mission Road (traffic signal)
- 63<sup>rd</sup> Street & Belinder Avenue (side street stop)
- 63<sup>rd</sup> Street & State Line Road (traffic signal)
- 59<sup>th</sup> Street & State Line Road (side street stop)
- 55<sup>th</sup> Street & State Line Road (traffic signal)
- Shawnee Mission Parkway & State Line Road (traffic signal)
- Belinder Avenue & State Park Road (side street stop)
- Shawnee Mission Parkway & Belinder Avenue (traffic signal)
- Shawnee Mission Parkway & Mission Road (traffic signal)

## 2.2 STREET NETWORK

The existing street network within the study area includes a network of arterial, collector, and local streets. Arterial streets are the backbone of a street network. They are intended to serve larger traffic volumes and longer distance trips. On the other extreme, local streets are intended to provide a high degree of access to properties. Because of this function, traffic volumes and speeds tend to be relatively low and traffic safety is quite good. Collector streets provide some degree of access and mobility; therefore, they have some characteristics of both arterial and local streets. Traffic volumes and speeds tend to be moderate. The following provides a summary of the existing street network within the study area:

**State Line Road** is a two-lane minor arterial street that runs north/south. The street widens for left-turn lanes at the intersection with Shawnee Mission Parkway. The alignment of the road is straight with a rolling vertical profile. The posted speed limit is 30 miles per hour (mph). There is sidewalk along the west side of State Line Road between 59<sup>th</sup> Street and Mission Drive.

**63<sup>rd</sup> Street** is a two-lane minor arterial street that runs east/west. The street widens for left-turn lanes at the intersection with Mission Road. The alignment of the street is straight with a rolling vertical profile. The posted speed limit is 25 mph. There is sidewalk along the south side of 63<sup>rd</sup> Street from Mission Road to Indian Lane.

**Mission Road.** It is a two-lane minor arterial street that runs north/south. The street widens for left-turn lanes at the intersections with 63<sup>rd</sup> Street, Rinehardt Drive, and Shawnee Mission Parkway. Most of the street is generally straight and fairly level, but south of Shawnee Mission Parkway there are several horizontal curves and steeper grades. There are continuous sidewalks along both sides of the street.

**Shawnee Mission Parkway** is a five-lane principal arterial street that runs east/west. The center lane is a two-way left-turn lane. The posted speed limit is 35 mph. The alignment of the road has some gradual horizontal and vertical curves. There are sidewalks along both sides of the street throughout most of the study area. There are some gaps in the sidewalk near the Belinder Avenue intersection and along the north side of these street between Rainbow Boulevard and State Line Road. Shawnee Mission Parkway is part of the state highway system, as it is also designated as US-56 Highway.

**State Park Road** is a two-lane local street that runs diagonally northwest/southeast from Shawnee Mission Parkway to Belinder Avenue. State Park Road ends at the intersection with Belinder Avenue, but the alignment of the roadway continues to the south as Belinder Avenue.

**Belinder Avenue** is a two-lane local street that runs north/south in segments through the study area. The segment from Shawnee Mission Parkway to State Park Road is straight with a posted speed limit of 25 mph. Belinder Avenue has a short horizontal curve just east of the intersection with State Park Road, with the curved Belinder Avenue approach operating under stop control.

South of the intersection with State Park Road is where the BLWC is located. Belinder Avenue terminates at the intersection with Mission Drive, just south of the BLWC. Continuing south on

Mission Drive and on Overhill Road leads to an intersection with 63<sup>rd</sup> Street. Belinder Avenue continues south of the intersection with 63<sup>rd</sup> Street as a two-lane divided collector street.

There are no sidewalks along any of the segments of Belinder Avenue within the study area.

**55<sup>th</sup> Street** is a two-lane local street that runs east/west from Mission Drive into Kansas City. Farther to the east in Kansas City, 55<sup>th</sup> Street is a minor arterial street. There are no sidewalks along 55<sup>th</sup> Street in Mission Hills, but there is a sidewalk along the north side of the street east of State Line Road.

**59<sup>th</sup> Street** is a two-lane local street that runs east/west from Overhill Road into Kansas City. Farther to the east in Kansas City, 59<sup>th</sup> Street is a collector street. The posted speed limit is 25 mph. There are no sidewalks along 59<sup>th</sup> Street in Mission Hills, but there is a sidewalk along the south side of the street east of State Line Road.

The remainder of the Mission Hills streets within the study area are two-lane local streets that have curvilinear alignments. Many of the streets have a posted speed limit of 25 mph. There are no sidewalks along any of the local streets. The two private golf courses are accessed from the local street network within Mission Hills.

To the west of Belinder Avenue, there are six other two-lane local streets that run north/south between Shawnee Mission Parkway and State Park Road in Fairway. Many of the streets have a posted speed limit of 25 mph. There are no sidewalks along any of these local streets either.

## 2.3 TRAFFIC DATA COLLECTION

Turning Movement Counts (TMCs) were collected at the study intersections on Tuesday, March 21, 2023, from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM. The turning movement count data collected is included in **Appendix A**. The overall AM peak hour for the study area occurred between 7:30 AM and 8:30 AM, and the PM peak hour occurred between 4:45 PM and 5:45 PM. The existing conditions peak hour turning movement volumes are shown on **Exhibit 2**. The existing geometry with lane configurations and intersection control at the study intersections is shown on **Exhibit 3**.

Daily traffic volumes were also collected on several roadways in the study area on Tuesday, March 21, 2023, and on Tuesday, March 28, 2023. The count data was totaled in 15-minute increments and is included in the **Appendix C**. The 24-hour counts are summarized in **Table 1**.

**TABLE 1: EXISTING DAILY TRAFFIC VOLUME**

Location	Direction of Travel				Total
	EB	WB	NB	SB	
63 <sup>rd</sup> Street, east of Reinhardt Drive	2,981	2,785	--	--	5,739
State Line Road, south of 55 <sup>th</sup> Street	--	--	4,402	2,328	6,730
Belinder Avenue, south of State Park Road	--	--	717	739	1,456

The daily traffic volume counts show that 63<sup>rd</sup> Street and State Line Road have volumes that are considered reasonable for two-lane minor arterial streets. These volumes are well below the capacity for two-lane streets, which is roughly 10,000 vehicles per day. The volume on Belinder Avenue is somewhat higher than expected for a local street, suggesting it is operating more like a residential collector roadway near the BLWC. Local streets typically carry less than 1,000 vehicles per day.

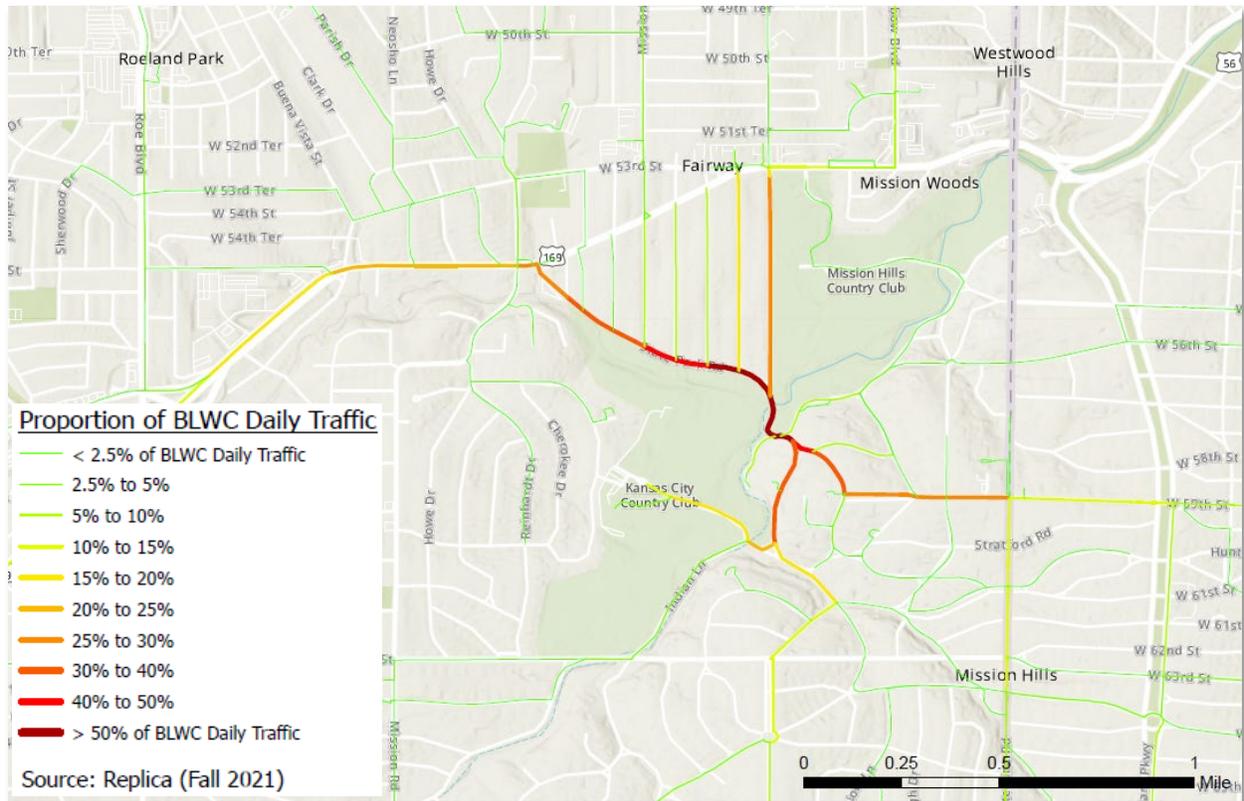
## 2.4 BICYCLE AND PEDESTRIAN DATA COLLECTION

Bicycle and pedestrian data were also collected during daylight hours on Belinder Avenue south of State Park Road. A total of 52 pedestrians and one bicyclist traveled over the BLWC between the hours of 7:00 AM and 8:00 PM. The weather conditions on March 21<sup>st</sup> ranged from 40 to 45 degrees with overcast skies and some brief light precipitation. It is worth noting that during a site visit on a warmer day in April, regular pedestrian activity was observed on Belinder Avenue. The pedestrians included those walking for exercise, visiting with other pedestrians, and a parent pushing a stroller. As there is a lack of sidewalks, this pedestrian activity took place on-street and intermixed with vehicular traffic.

## 3.0 TRAVEL PATTERNS

### 3.1 EXISTING TRIP ORIGINS AND DESTINATIONS

Existing travel patterns were studied to determine how removal of the BLWC would impact drivers on the surrounding street network. Replica was utilized to determine the existing origins and destinations of trips traveling on the BLWC. Replica is an online platform with a detailed “synthetic population” model of existing travel patterns and land uses that is used nationwide for transportation planning. The Replica model includes all of the streets within the study area.



#### ***Replica Model Trips Using the BLWC***

The model’s trips passing through the segment of Belinder Avenue where the BLWC is located were studied in more detail. The origins and destinations of these trips were reviewed to determine the percentage of trips that originate or are destined for the neighborhoods adjacent to the BLWC within the study area. The neighborhoods north and south of the BLWC were evaluated separately. The percentage of trips using the BLWC that originate or are destined for locations external to the study area were also determined separately for locations north and south of the BLWC. The existing trip origins and destinations are summarized in **Table 2**. The Replica model output results are included in **Appendix D**.

**TABLE 2: BLWC TRIP ORIGINS AND DESTINATIONS**

Travel Patterns		Northbound	Southbound
Origin	Destination		
Neighborhood	Neighborhood	3%	2%
Neighborhood	External	40%	42%
External	Neighborhood	41%	45%
External	External	16%	11%
<b>TOTAL</b>		100%	100%

The origin and destination data in **Table 2** indicates that more than 80 percent of trips using the BLWC do originate, or are destined for, the neighborhoods immediately north and south of the BLWC within the study area. Of the total trips using the BLWC, approximately 45% originate or are destined for the neighborhood south of the BLWC in Mission Hills.

There are several other patterns worth noting. Many of the northbound trips using the BLWC destined for external destinations to the north travel to the west on Shawnee Mission Parkway. Likewise, many of the southbound trips using the BLWC from external origins travel from the west on Shawnee Mission Parkway. Some of the trips with external origins or destinations south of the study area may be from Mission Hills in the area south of 63<sup>rd</sup> Street.

Between 11 and 16 percent of traffic using the BLWC does not have an origin or destination within the study area. This traffic would be considered cut-through traffic. Based on the daily traffic volume collected at the BLWC, approximately 200 vehicles per day use the BLWC as a cut-through route.

### 3.2 TRIP REDISTRIBUTION

To evaluate the traffic impacts of removal of the BLWC, the existing peak hour volumes of traffic using the BLWC were redistributed to the surrounding street network. The peak hour vehicles counted at the south leg of the Belinder Avenue and State Park Road are the trips that would be redistributed. These trips are shown in **Table 3**.

**TABLE 3: BLWC PEAK HOUR TRAFFIC VOLUMES**

Period	Northbound	Southbound	Total
AM Peak Hour	99	86	<b>185</b>
PM Peak Hour	67	84	<b>151</b>

The existing traffic using the BLWC was redistributed based on the origins and destination patterns listed in **Table 2**. Trip routings for each travel pattern were developed based on the geographic location of origins and destinations from the Replica model.

The traffic redistribution is shown on **Exhibit 4**. The resulting redistributed conditions peak hour traffic volumes are shown on **Exhibit 5**.

The redistribution patterns were also applied to the daily traffic volumes collected. The resulting total daily traffic volumes and increase in volumes is shown in **Table 4**.

**TABLE 4: REDISTRIBUTED DAILY TRAFFIC VOLUME**

Location	Direction of Travel				Total	Increase
	EB	WB	NB	SB		
63 <sup>rd</sup> Street, east of Reinhardt Drive	3,285	3,058	--	--	<b>6,343</b>	10.5%
State Line Road, south of 55 <sup>th</sup> Street	--	--	4,704	2,610	<b>6,730</b>	8.7%

The redistributed daily traffic volumes in **Table 4** indicate that traffic volumes on 63<sup>rd</sup> Street and on State Line Road can be expected to increase by approximately 10 percent if the BLWC is removed. The resulting volumes are still well within acceptable ranges for two-lane minor arterial streets.

## 4.0 INTERSECTION CAPACITY ANALYSIS

### 4.1 LEVEL OF SERVICE OVERVIEW

Intersection capacity analysis was performed at the study intersections for the following scenarios:

- Existing Traffic Conditions
- Redistributed Traffic Conditions

The capacity analysis was performed for the weekday AM and PM peak hours using Synchro traffic modeling software to determine intersection delay and level of service (LOS). Calculations were performed based on the methodologies outlined in the *Highway Capacity Manual (HCM)*, 6th Edition, which is published by the Transportation Research Board.

LOS is a quantitative measure used by traffic engineers to describe the operations of an intersection. It ranges from A to F, with A being the best and F being the worst level of operation. LOS A conditions are characterized by minimal vehicle delay and free-flow conditions, while LOS F is characterized by long vehicle delay – usually when demand exceeds available roadway capacity. Although LOS E is defined as at-capacity, LOS D is generally considered the minimum acceptable level of operation at an intersection. **Table 4** shows the definition of LOS for unsignalized and signalized intersections.

**TABLE 5: LEVELS OF SERVICE**

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

Levels of service are evaluated based on the movement groupings which are required to yield to other traffic. Typically, these are left turns off the major street and the side street approaches for two-way stop-controlled intersections. For signalized intersections each movement grouping is evaluated, and LOS is evaluated for the intersection as a whole.

In suburban areas, LOS D is generally considered the minimum acceptable level of service for intersections. At signalized intersections, LOS E is considered acceptable for low traffic volume left turn or minor street movements where the signal timing prioritizes the major, high-volume movements. This can result in less delay for the entire intersection overall.

The volume-to-capacity (v/c) ratio is a secondary measure of intersection performance. The v/c ratio represents the sufficiency of an intersection to accommodate the vehicular demand. A v/c ratio less than 0.85 generally indicates that adequate capacity is available, and vehicles are not

expected to experience significant queues and delays. As the v/c ratio approaches 1.0, traffic flow may become unstable, and delay and queuing conditions may occur. Once the demand exceeds the capacity (a v/c ratio greater than 1.0), traffic flow is unstable and excessive delay and queuing is expected.

Traffic queues were also evaluated as part of the analyses. Long traffic queues which extend beyond the amount of storage available, either between intersections or within turn lanes, can have significant impacts on operations. The 95th percentile vehicular queues were analyzed to ensure the analyses are reflective of the physical constraints of the study intersections and to identify if additional storage is needed for turn lanes. The 95th percentile queue represents the queue length that has only a 5% chance of being exceeded during the analysis period.

## 4.2 EXISTING TRAFFIC CONDITIONS ANALYSIS

Capacity analysis was conducted for existing traffic conditions at the study intersections to determine baseline conditions at the study intersections and to calibrate the analysis models. The analysis was performed for weekday AM and PM peak hours and is based on the traffic volumes, lane configurations, and traffic controls shown in **Exhibits 2** and **3**. The Synchro reports are provided in **Appendix E**.

**Table 6** provides a summary of the capacity analysis at the study intersections.

**TABLE 6: EXISTING TRAFFIC PEAK HOUR CONDITIONS**

Intersection	Control	Movement	Operational Analysis Results							
			AM Peak Hour				PM Peak Hour			
			Delay (sec/veh)	LOS	95% Queue	V/C Ratio	Delay (sec/veh)	LOS	95% Queue	V/C Ratio
63 <sup>rd</sup> Street & Mission Road	Signalized	EBL	11.0	B	< 50'	0.11	12.0	B	< 50'	0.06
		EBT/R	16.1	B	174'	0.67	16.1	B	156'	0.65
		WBL	11.4	B	< 50'	0.13	11.8	B	< 50'	0.09
		WBT/R	14.0	B	111'	0.42	15.2	B	156'	0.60
		NBL	9.8	A	< 50'	0.10	9.3	A	< 50'	0.13
		NBT/R	14.3	B	226'	0.70	11.6	B	183'	0.55
		SBL	10.4	B	< 50'	0.08	9.5	A	< 50'	0.05
		SBT/R	13.3	B	160'	0.54	13.8	B	216'	0.69
		<b>Overall</b>	<b>13.9</b>	<b>B</b>	--	--	<b>13.6</b>	<b>B</b>	--	--
63 <sup>rd</sup> Street & Belinder Avenue / Overhill Road	Side Street Stop	EBL	7.5	A	< 50'	0.01	7.7	A	< 50'	0.01
		WBL	7.7	A	< 50'	0.01	7.7	A	< 50'	0.01
		NB	12.0	B	< 50'	0.12	12.7	B	< 50'	0.12
		SB	12.0	B	< 50'	0.03	11.5	B	< 50'	0.04
63 <sup>rd</sup> Street & State Line Road	Signalized	EB	7.7	A	< 50'	0.35	6.6	A	< 50'	0.32
		WB	7.3	A	< 50'	0.24	6.7	A	< 50'	0.33
		NB	5.2	A	< 50'	0.46	5.1	A	< 50'	0.35
		SB	4.2	A	< 50'	0.19	5.2	A	< 50'	0.39
		<b>Overall</b>	<b>5.9</b>	<b>A</b>	--	--	<b>5.8</b>	<b>A</b>	--	--
State Line Road & 59 <sup>th</sup> Street	Side Street Stop	EB	13.6	B	< 50'	0.11	13.8	B	< 50'	0.10
		WB	13.6	B	< 50'	0.12	14.0	B	< 50'	0.13
		NBL	7.5	A	< 50'	0.01	7.8	A	< 50'	0.01
		SBL	8.2	A	< 50'	0.01	7.9	A	< 50'	0.01
State Line Road & 55 <sup>th</sup> Street	Signalized	EB	8.2	A	< 50'	0.08	6.3	A	< 50'	0.05
		WB	9.8	A	< 50'	0.42	7.5	A	< 50'	0.39
		NB	5.2	A	< 50'	0.54	5.0	A	< 50'	0.41
		SB	3.7	A	< 50'	0.15	4.7	A	< 50'	0.35
		<b>Overall</b>	<b>6.0</b>	<b>A</b>	--	--	<b>5.5</b>	<b>A</b>	--	--
State Line Road & Shawnee Mission Parkway	Signalized	EBL	10.4	B	< 50'	0.14	15.4	B	< 50'	0.29
		EBT/R	15.1	B	531'	0.76	13.3	B	366'	0.59
		WBL	14.8	B	< 50'	0.37	20.7	C	< 50'	0.75
		WBT/R	14.9	B	198'	0.39	21.4	C	515'	0.79
		NBL	23.4	C	303'	0.71	23.9	C	210'	0.66
		NBT/R	19.0	B	242'	0.46	19.3	B	197'	0.37
		SBL	32.4	C	70'	0.23	29.8	C	89'	0.24
		SBT/R	37.0	D	134'	0.67	36.4	D	256'	0.79
<b>Overall</b>	<b>17.5</b>	<b>B</b>	--	--	<b>19.7</b>	<b>B</b>	--	--		
Belinder Avenue & State Park Road	Side Street Stop	WB	9.5	A	< 50'	0.03	9.2	A	< 50'	0.03
		SBL	7.5	A	< 50'	0.01	7.4	A	< 50'	0.01

Intersection	Control	Movement	Operational Analysis Results							
			AM Peak Hour				PM Peak Hour			
			Delay (sec/veh)	LOS	95% Queue	V/C Ratio	Delay (sec/veh)	LOS	95% Queue	V/C Ratio
Belinder Avenue & Shawnee Mission Parkway	Signalized	EBL	4.4	A	< 50'	0.32	12.1	B	56'	0.33
		EBT/R	6.5	A	517'	0.71	4.0	A	208'	0.39
		WBL	6.1	A	< 50'	0.01	3.6	A	< 50'	0.02
		WBT/R	6.5	A	144'	0.46	9.4	A	664'	0.77
		NBL	27.7	C	< 50'	0.33	34.1	C	< 50'	0.20
		NBT/R	0.0	A	95'	0.01	0.0	A	55'	0.01
		SBT/L	27.9	C	122'	0.35	36.8	D	128'	0.45
		SBR	31.8	C	51'	0.65	38.4	D	< 50'	0.59
		<b>Overall</b>	<b>8.4</b>	<b>A</b>	--	--	<b>9.7</b>	<b>A</b>	--	--
Mission Road & Shawnee Mission Parkway	Signalized	EBL	11.5	B	< 50'	0.19	16.1	B	< 50'	0.24
		EBT/R	27.4	C	701'	0.87	13.5	B	423'	0.54
		WBL	25.3	C	90'	0.60	11.6	B	133'	0.59
		WBT/R	15.4	B	287'	0.51	19.0	B	750'	0.84
		NBL	32.0	C	55'	0.16	34.2	C	56'	0.26
		NBT	37.3	D	175'	0.42	37.5	D	120'	0.36
		NBR	42.8	D	255'	0.76	32.5	C	64'	0.43
		SBL	31.6	C	124'	0.42	33.1	C	61'	0.19
		SBT/R	36.8	D	196'	0.53	48.2	D	238'	0.83
<b>Overall</b>	<b>26.1</b>	<b>C</b>	--	--	<b>20.0</b>	<b>C</b>	--	--		

Based on the analysis results in **Table 6**, all movements at the study intersections currently operate at acceptable levels of service. Some long queues do form in the through lanes at the signalized intersections on Shawnee Mission Parkway, however the movements operate under capacity and the queues generally clear during each cycle of the signals. During the AM peak hour, the northbound left-turn movement at the Shawnee Mission Parkway & State Line Road intersection has a 95<sup>th</sup> percentile queue length of 303 feet. This queue length exceeds the 225-foot storage length of the turn lane.

### 4.3 REDISTRIBUTED TRAFFIC CONDITIONS ANALYSIS

Capacity analysis was conducted for redistributed traffic conditions at the study intersections to evaluate the impacts of removal of the BLWC at the study intersections. The analysis was performed for weekday AM and PM peak hours and is based on the traffic volumes, lane configurations, and traffic controls shown in **Exhibits 3 and 5**. The Synchro reports are provided in **Appendix E**.

**Table 7** provides a summary of the capacity analysis at the study intersections.

**TABLE 7: REDISTRIBUTED TRAFFIC PEAK HOUR CONDITIONS**

Intersection	Control	Movement	Operational Analysis Results							
			AM Peak Hour				PM Peak Hour			
			Delay (sec/veh)	LOS	95% Queue	V/C Ratio	Delay (sec/veh)	LOS	95% Queue	V/C Ratio
63 <sup>rd</sup> Street & Mission Road	Signalized	EBL	12.1	B	< 50'	0.13	12.0	B	< 50'	0.06
		EBT/R	17.2	B	174'	0.35	15.8	B	158'	0.62
		WBL	12.3	B	< 50'	0.13	11.8	B	< 50'	0.08
		WBT/R	16.1	B	132'	0.56	16.1	B	175'	0.67
		NBL	9.9	A	< 50'	0.10	9.6	A	< 50'	0.13
		NBT/R	15.3	B	228'	0.71	13.3	B	192'	0.61
		SBL	10.2	B	< 50'	0.18	9.3	A	< 50'	0.13
		SBT/R	12.8	B	165'	0.50	14.0	B	228'	0.70
		<b>Overall</b>	<b>14.6</b>	<b>B</b>	--	--	<b>14.1</b>	<b>B</b>	--	--
63 <sup>rd</sup> Street & Belinder Avenue / Overhill Road	Side Street Stop	EBL	7.6	A	< 50'	0.01	7.7	A	< 50'	0.01
		WBL	7.8	A	< 50'	0.01	7.8	A	< 50'	0.01
		NBL	12.9	B	< 50'	0.15	13.5	B	< 50'	0.14
		SBL	10.8	B	< 50'	0.04	11.0	B	< 50'	0.05
63 <sup>rd</sup> Street & State Line Road	Signalized	EBL	7.9	A	< 50'	0.35	6.8	A	< 50'	0.32
		WBL	7.5	A	< 50'	0.24	6.9	A	< 50'	0.34
		NB	5.1	A	< 50'	0.47	5.1	A	< 50'	0.36
		SB	4.2	A	< 50'	0.21	5.3	A	< 50'	0.40
		<b>Overall</b>	<b>5.8</b>	<b>A</b>	--	--	<b>5.8</b>	<b>A</b>	--	--
State Line Road & 59 <sup>th</sup> Street	Side Street Stop	EB	15.0	C	< 50'	0.13	15.2	C	< 50'	0.01
		WB	13.3	B	< 50'	0.11	13.8	B	< 50'	0.13
		NBL	8.3	A	< 50'	0.01	7.9	A	< 50'	0.01
		SBL	7.6	A	< 50'	0.01	7.9	A	< 50'	0.01
State Line Road & 55 <sup>th</sup> Street	Signalized	EB	8.8	A	< 50'	0.10	6.5	A	< 50'	0.06
		WB	10.4	B	< 50'	0.43	7.8	A	< 50'	0.39
		NB	5.3	A	< 50'	0.57	5.1	A	78'	0.44
		SB	3.7	A	< 50'	0.18	4.8	A	71'	0.39
		<b>Overall</b>	<b>6.2</b>	<b>A</b>	--	--	<b>5.6</b>	<b>A</b>	--	--

Intersection	Control	Movement	Operational Analysis Results							
			AM Peak Hour				PM Peak Hour			
			Delay (sec/veh)	LOS	95% Queue	V/C Ratio	Delay (sec/veh)	LOS	95% Queue	V/C Ratio
State Line Road & Shawnee Mission Parkway	Signalized	EBL	11.7	B	< 50'	0.14	16.4	B	< 50'	0.26
		EBT/R	18.3	B	556'	0.80	14.7	B	383'	0.62
		WBL	16.3	B	< 50'	0.30	22.1	C	< 50'	0.76
		WBT/R	16.4	B	198'	0.39	23.0	C	515'	0.80
		NBL	29.2	C	350'	0.78	26.7	C	246'	0.72
		NBT/R	20.3	A	242'	0.44	19.3	B	197'	0.36
		SBL	36.9	D	70'	0.24	31.2	C	89'	0.25
		SBT/R	42.2	D	134'	0.70	38.1	D	256	0.80
	<b>Overall</b>	<b>20.6</b>	<b>C</b>	--	--	<b>21.1</b>	<b>C</b>	--	--	
Belinder Avenue & Shawnee Mission Parkway	Signalized	EBL	4.5	A	< 50'	0.33	14.2	B	57'	0.35
		EBT/R	6.9	A	537'	0.72	4.8	A	217'	0.41
		WBL	6.3	A	< 50'	0.04	4.1	A	< 50'	0.03
		WBT/R	6.5	A	250'	0.46	11.1	B	690'	0.79
		NBL	28.4	C	< 50'	0.27	34.5	C	< 50'	0.15
		NBT/R	0.0	A	80'	0.01	0.01	A	< 50'	0.01
		SBT/L	29.3	C	124'	0.37	38.5	D	131'	0.47
		SBR	33.3	C	51'	0.66	37.7	D	< 50'	0.50
	<b>Overall</b>	<b>8.6</b>	<b>A</b>	--	--	<b>10.9</b>	<b>B</b>	--	--	
Mission Road & Shawnee Mission Parkway	Signalized	EBL	11.8	B	< 50'	0.19	16.4	B	< 50'	0.24
		EBT/R	29.4	C	708'	0.88	14.5	B	430'	0.55
		WBL	27.9	C	120'	0.67	12.7	B	152'	0.63
		WBT/R	15.5	B	279'	0.50	19.5	B	734'	0.84
		NBL	32.5	C	83'	0.28	34.5	C	76'	0.36
		NBT	37.8	D	176'	0.42	37.0	D	122'	0.34
		NBR	43.9	D	270'	0.76	31.8	C	65'	0.43
		SBL	32.5	C	121'	0.41	33.1	C	59'	0.18
		SBT/R	39.0	D	200'	0.56	49.0	D	241'	0.84
	<b>Overall</b>	<b>27.6</b>	<b>C</b>	--	--	<b>20.7</b>	<b>C</b>	--	--	

The results in **Table 7** indicate that all movements at the study intersections are projected to continue to operate at acceptable level of service if the BLWC were to be removed. Most levels of service are not projected to change from the existing conditions analysis.

Minor increases in delay and 95<sup>th</sup> percentile queue lengths are projected for several movements. As in the Existing Conditions scenario, the northbound left movement at the Shawnee Mission Parkway & State Line Road intersection is projected have a 95<sup>th</sup> percentile queue length that exceeds the storage length. The queue length is projected to increase from 303 feet to 350 feet, which will momentarily block the northbound through lane. The leading left-turn phase at the signal will allow these queues to clear. The northbound movements are projected to operate acceptably with the increased queue lengths.

## 5.0 TRAVEL TIME ANALYSIS

Removal of the BLWC would increase travel time for some local trips in the study area. To quantify the increase in travel time, online mapping applications were used to evaluate several routes during different times of day. Origins near the center of the neighborhoods just north and south of the BLWC were mapped to the far side of the study area. The routes were mapped during the AM and PM peak periods as well as off-peak times. Routes were mapped for vehicle, bicycle, and pedestrian trips.

The routes were altered to account for removal of the BLWC and remapped. The routes were altered to use State Line Road or Mission Road instead of the BLWC.

### 5.1 VEHICULAR TRAVEL TIME

A summary of average vehicular travel time impacts with and without the BLWC shown in **Table 8**.

**TABLE 8: VEHICULAR TRAVEL TIME RESULTS**

Origin	Destination	Travel Time		Distance	
		With BLWC	Without BLWC	With BLWC	Without BLWC
5500 Fairway Road	63 <sup>rd</sup> Street & Belinder Avenue	4 minutes	7 minutes	1.2 miles	2.4 miles
5900 Oakwood Road	Shawnee Mission Parkway & Belinder Avenue	4 minutes	5 minutes	1.1 miles	1.6 miles

The results in **Table 8** show that the removal of the BLWC would add one to three additional minutes for vehicular trips with origins or destinations within the neighborhoods in the study area adjacent to the BLWC.

### 5.2 BICYCLE TRAVEL TIME

A summary of average bicycle travel time impacts with and without the BLWC shown in **Table 9**.

**TABLE 9: BICYCLE TRAVEL TIME RESULTS**

Origin	Destination	Travel Time		Distance	
		With BLWC	Without BLWC	With BLWC	Without BLWC
5500 Fairway Road	63 <sup>rd</sup> Street & Belinder Avenue	7 minutes	13 minutes	1.2 miles	2.2 miles
5900 Oakwood Road	Shawnee Mission Parkway & Belinder Avenue	6 minutes	12 minutes	1.1 miles	1.6 miles

Removal of the BLWC would add as much as six additional minutes for bicycle trips with origins or destinations within the neighborhoods in the study area adjacent to the BLWC.

### 5.3 PEDESTRIAN TRAVEL TIME

A summary of average pedestrian travel time impacts with and without the BLWC shown in **Table 10**.

**TABLE 9: PEDESTRIAN TRAVEL TIME RESULTS**

Origin	Destination	Travel Time		Distance	
		With BLWC	Without BLWC	With BLWC	Without BLWC
5500 Fairway Road	63 <sup>rd</sup> Street & Belinder Avenue	24 minutes	44 minutes	1.2 miles	2.2 miles
5900 Oakwood Road	Shawnee Mission Parkway & Belinder Avenue	22 minutes	32 minutes	1.1 miles	1.6 miles

Without the BLWC pedestrian times would increase significantly. The routes evaluated indicate that pedestrian travel times would increase by 10 to 20 minutes for pedestrian trips with origins or destinations within the neighborhoods in the study area adjacent to the BLWC.

## 6.0 EMERGENCY SERVICE IMPACTS

City of Mission Hills staff solicited feedback regarding the removal of the BLWC from fire department, police, and ambulance service providers. A summary of the feedback is provided below.

Consolidated Fire District #2 serves Mission Hills, Fairway, and other cities in northeast Johnson County. Station 22 is the closest station to the study area. The station is located at 3921 W. 63rd Street in Prairie Village, near the intersection of 63rd Street & Mission Road. Fire Chief Steve Chick, Jr. indicated that the BLWC is not traditionally used as a response route. While he does not like to see possible alternate routes taken away, he does not believe removal of the BLWC would impact emergency response times during routine conditions.

Johnson County Med-Act provides emergency medical services throughout the county. Med-Act provides ambulance service from Station 22. Med-Act Deputy Director Scott Sare agreed with the noted assessment of the Fire Chief noted in the previous paragraph.

The City of Mission Hills contracts with the City of Prairie Village Police Department to provide 24-hour law enforcement services. The Prairie Village Police Department headquarters is located at 7700 Mission Road. Chief of Police Byron Roberson noted that there is a small portion of Mission Hills on the north side of the BLWC. This small portion consists of the eastbound lane of State Park Road between Falmouth Road and the BLWC. If there was an emergency call in this small portion of the city, it could take more than the average response time of around two minutes to respond. He also indicated that removal of the BLWC could cause some delay when responding to assist neighboring Police Departments. The Chief states that these instances are very infrequent but are possible.

## 7.0 RECOMMENDATIONS

The analysis indicates that the removal of the BLWC would not have a significant impact on vehicular travel in the surrounding area. The number of vehicles using the BLWC during the peak hours equates to three vehicles or less per minute. Redistributing this traffic to adjacent streets in the study area will have a minimal impact on the adjacent roadways. Most levels of service at the intersections in the study area would be unchanged from the existing conditions. Vehicular travel times may increase by one to three minutes for trips that begin or end in the neighborhoods adjacent to the BLWC.

The most significant impacts of removing the BLWC would be in regard to travel times for bicycle or pedestrian trips that begin or end in the neighborhoods adjacent to the BLWC. Routes for these trips could increase by as much as 1.2 miles. This results in an increase of as much as six minutes for bicycle trips. Pedestrian travel times could increase by 10 to 20 minutes.

Removal of the BLWC would cause bicyclists and pedestrians in the study area to use the arterial street network to cross Brush Creek. There are no sidewalks along portions of State Line Road and portions of 63<sup>rd</sup> Street. Therefore, if the BLWC is removed, additional sidewalks may be needed to fill in the gaps within the network. It is worth noting that Belinder Avenue is a popular bicycle route in northeast Johnson County, as it provides a connection from Somerset Drive in Prairie Village to 47<sup>th</sup> Street in Westwood. Removal of the BLWC would impact this route.

From a bicycle and pedestrian safety standpoint, it would be beneficial to close the BLWC to vehicular traffic but maintain a crossing of Brush Creek for bicycle and pedestrian traffic. Restricting vehicle traffic would reduce traffic in the adjacent neighborhoods by eliminating cut-through traffic. Maintaining a crossing would continue to provide bicyclists and pedestrians an alternative to traveling along arterial streets that may not have sidewalks.

The bicycle and pedestrian crossing of Brush Creek could be the current low water crossing structure or a new structure. Raised islands could be constructed on Belinder Avenue at the north and south ends of the crossing to restrict vehicular traffic. Bollards would also reinforce the vehicle restriction. A 10-foot section of pavement could remain as a trail to allow bicycle and pedestrian traffic to continue to use the BLWC. Potential improvements showing how the BLWC could be closed to vehicular traffic are illustrated on **Exhibits 6 and 7**.

The area north of the BLWC at the intersection of Belinder Avenue and State Park Road is shown on **Exhibit 6**. The intersection is shown to be eliminated by removing the south leg. A horizontal curve with a design speed of 15 mph would connect Belinder Avenue to State Park Road. This design would locate the roadway within the existing right-of-way. A 20-mph curve would be more desirable but would require property acquisition. The south leg of the intersection shown to be eliminated by enlarging the existing raised island and constructing a new raised island. The islands would be separated by a 10-foot-wide trail. The islands could be landscaped or hardscaped.

**Exhibit 7** shows the area south of the BLWC. Access must be provided on Belinder Avenue to the private residential driveway on the south side of the BLWC. The exhibit shows a raised island to be constructed between the low water crossing and the private residential driveway. The island could be landscaped or hardscaped. End of road object markers are shown to be located in the island to alert drivers that the roadway terminates. A bollard may also be needed within the opening for the trail to restrict vehicular access. An optional vehicular turnaround is shown just south of the private driveway. This turnaround would allow a single-unit truck with a 30-foot wheelbase, such as a delivery truck, to complete a three-point turn. Several No Outlet and Dead End signs are also shown on Belinder Avenue near the intersection of Mission Drive to inform drivers that the roadway is no longer a through street.

As an alternative to the potential improvements illustrated at the south side of the BLWC, the segment of Belinder Avenue north of Brookbank Lane could be converted to a private street to provide access to the residence. In this case the right-of-way could be vacated, and the street could be reconstructed as a private driveway. Utility easements would likely be needed to accommodate the utilities that currently follow Belinder Avenue.

## 8.0 SUMMARY & CONCLUSIONS

A traffic study for the Belinder Low Water Crossing (BLWC) has been prepared by Kimley-Horn. The BLWC is located just south of the intersection of Belinder Avenue and State Park Road in Mission Hills, Kansas. Currently the BLWC is closed manually with gates when there is a threat of high water.

The City of Mission Hills is considering options for how to address the BLWC in the future. Options may include replacement or removal of the BLWC. The purpose of this study is to address traffic and transportation impacts resulting from removal of the BLWC on the surrounding streets and intersections.

Peak hour turning movement counts were collected at nine study intersections to develop a baseline for analysis. Daily traffic volume counts were also conducted at three locations on the surrounding street network. All study intersections were found to be operating at acceptable levels of service for existing conditions.

Existing travel patterns were studied to determine how removal of the BLWC would impact drivers on the surrounding street network. A model of travel patterns and land uses for the surrounding area was utilized to determine the existing origins and destinations of trips traveling on the BLWC. These trips were studied in more detail to determine how the trips using the BLWC would be redistributed if it was removed. It was also determined that approximately 200 vehicles per day use the BLWC as a cut-through route.

Traffic analysis was performed for conditions with traffic redistributed for the removal of the BLWC. All movements at the study intersections are projected to continue to operate acceptably if the with the redistributed traffic volumes. Minor increases in delay and 95<sup>th</sup> percentile queue lengths are projected for several movements. Most levels of service are not projected to change from the existing conditions analysis.

The analysis indicates that the removal of the BLWC would not have a significant impact on vehicular travel in the surrounding area. Vehicular travel times may increase by one to three minutes for trips that begin or end in the neighborhoods adjacent to the BLWC. The most significant impacts of removing the BLWC would be in regard to travel times for bicycle or pedestrian trips that begin or end in the neighborhoods adjacent to the BLWC. Routes for these trips could increase by as much as 1.2 miles. This results in an increase of as much as six minutes for bicycle trips. Pedestrian travel times could increase by 10 to 20 minutes.

Emergency service providers were contacted to determine if removal of the BLWC would impact emergency response times. The fire department, police, and ambulance services indicated that they generally do not like to see street connections removed, however, the BLWC is not a traditional response route. Removal of the BLWC is expected to have little impact on response times.

From a bicycle and pedestrian safety standpoint, it would be beneficial to close the BLWC to vehicular traffic but maintain a crossing of Brush Creek for bicycle and pedestrian traffic.

Restricting vehicle traffic would reduce traffic in the adjacent neighborhoods by eliminating cut-through traffic. Maintaining a crossing would continue to provide bicyclists and pedestrians an alternative to traveling along arterial streets that may not have sidewalks.

Raised islands could be constructed on Belinder Avenue to restrict vehicular traffic at the BLWC. A 10-foot section of pavement could remain as a trail to allow bicycle and pedestrian traffic to continue to use the BLWC. Potential improvements showing how the BLWC could be closed to vehicular traffic are illustrated on **Exhibits 6** and **7**. Alternatively, a portion of Belinder Avenue south of the BLWC could be converted to a private street to provide access to the adjacent residence.

## APPENDIX

Appendix A: EXHIBITS

Appendix B: PEAK HOUR TURNING MOVEMENT COUNTS

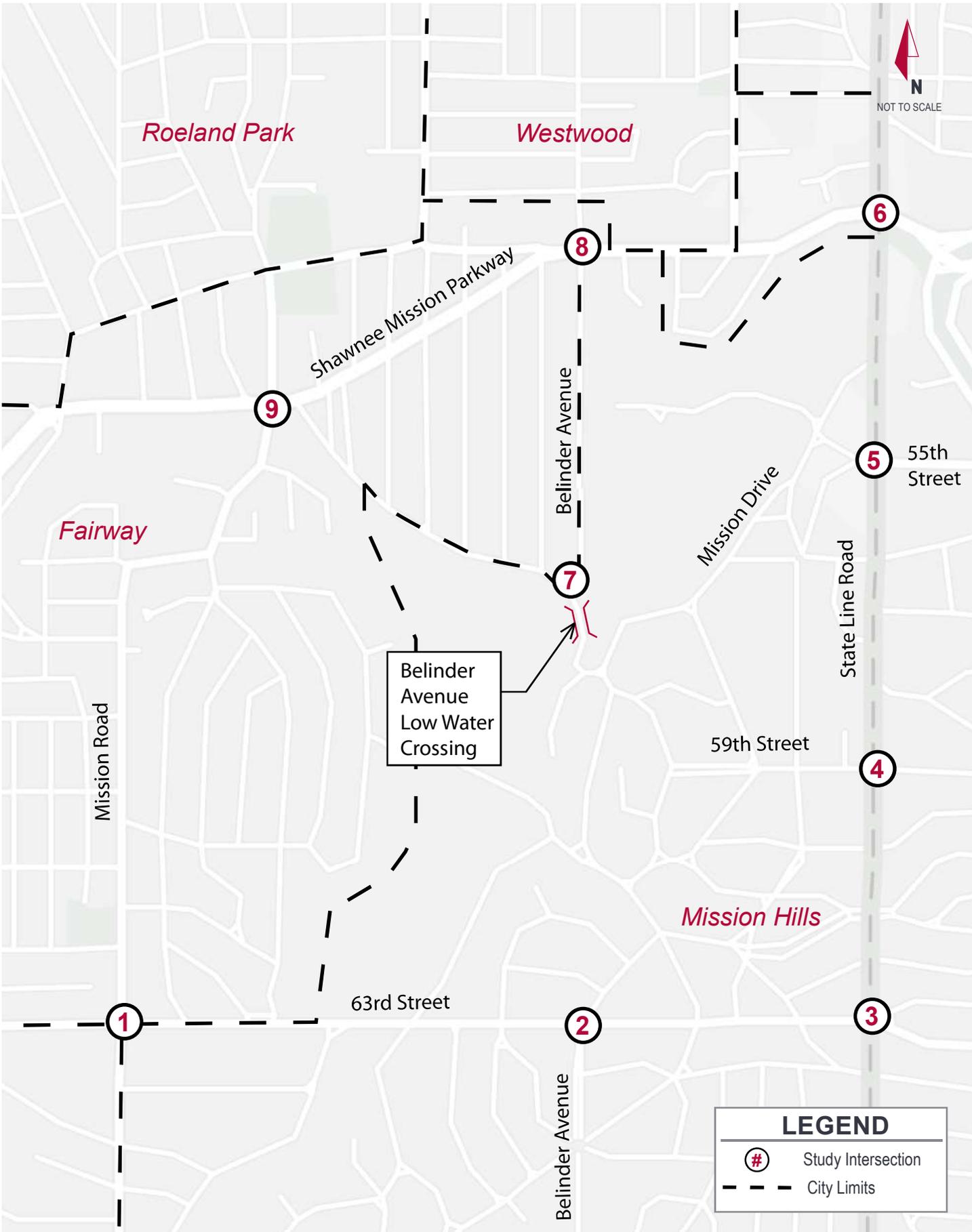
Appendix C: DAILY TRAFFIC VOLUME COUNTS

Appendix D: REPLICA MODEL OUTPUTS

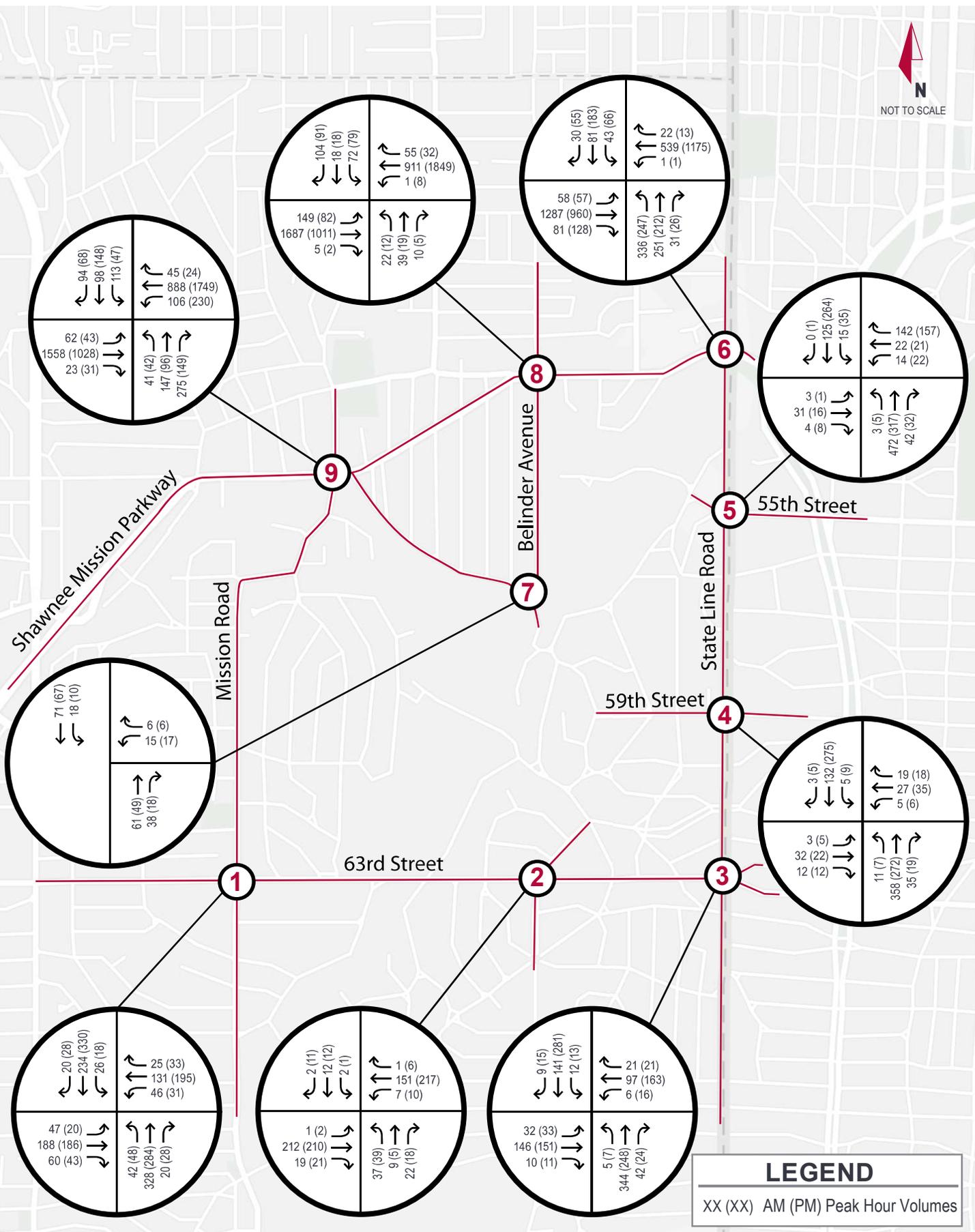
Appendix E: SYNCHRO CAPACITY ANALYSIS REPORTS

# Appendix A: Exhibits

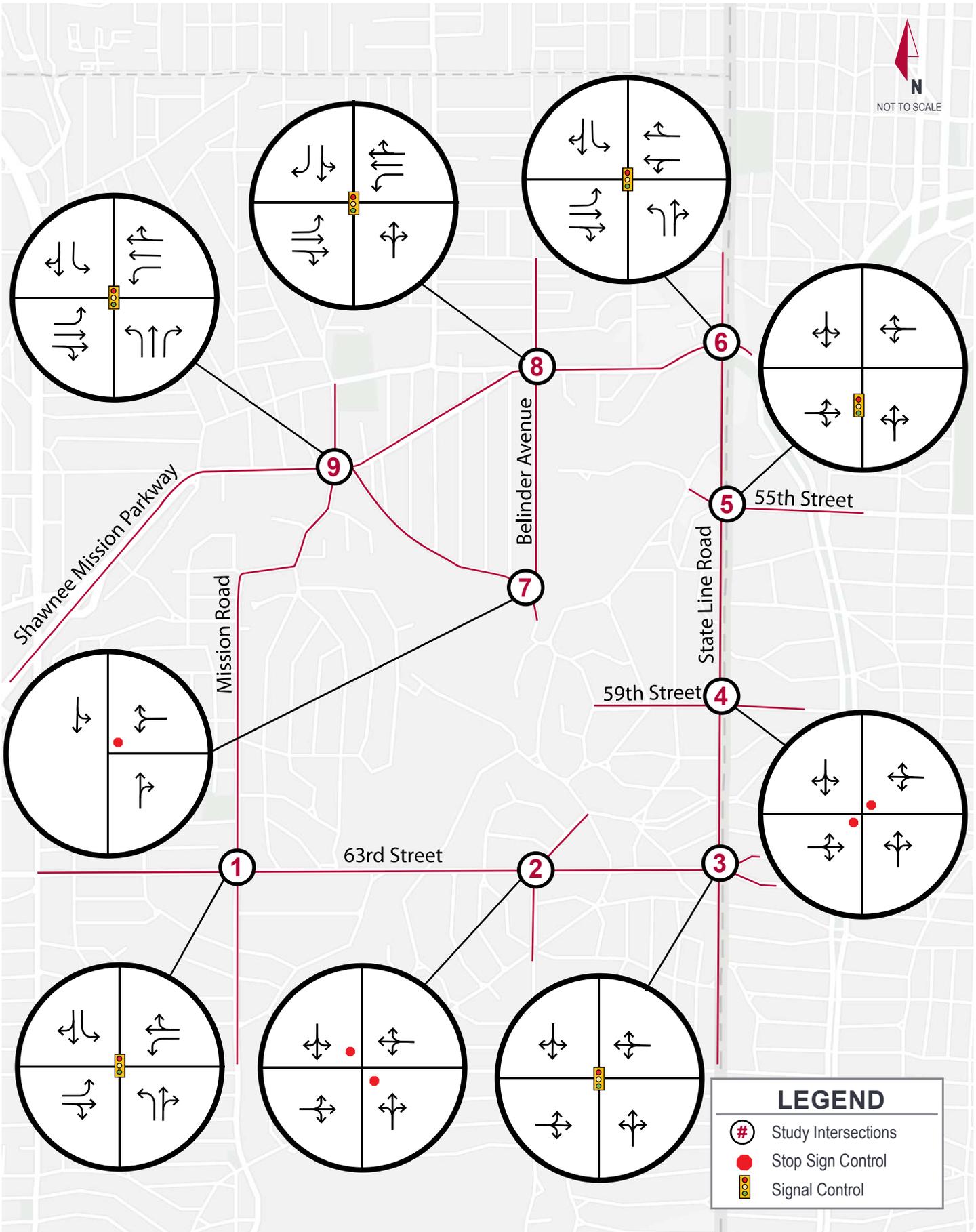


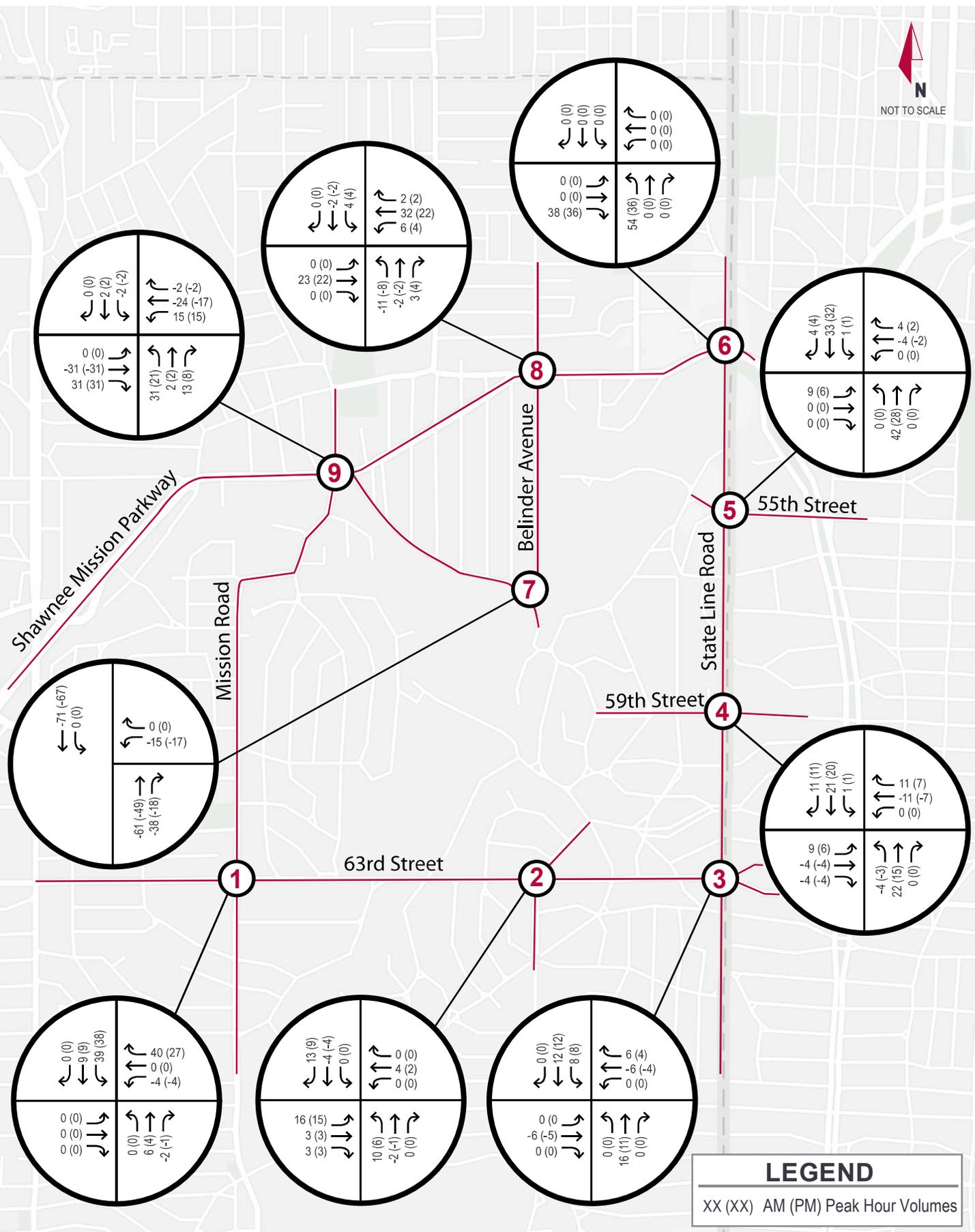


LEGEND	
	Study Intersection
	City Limits

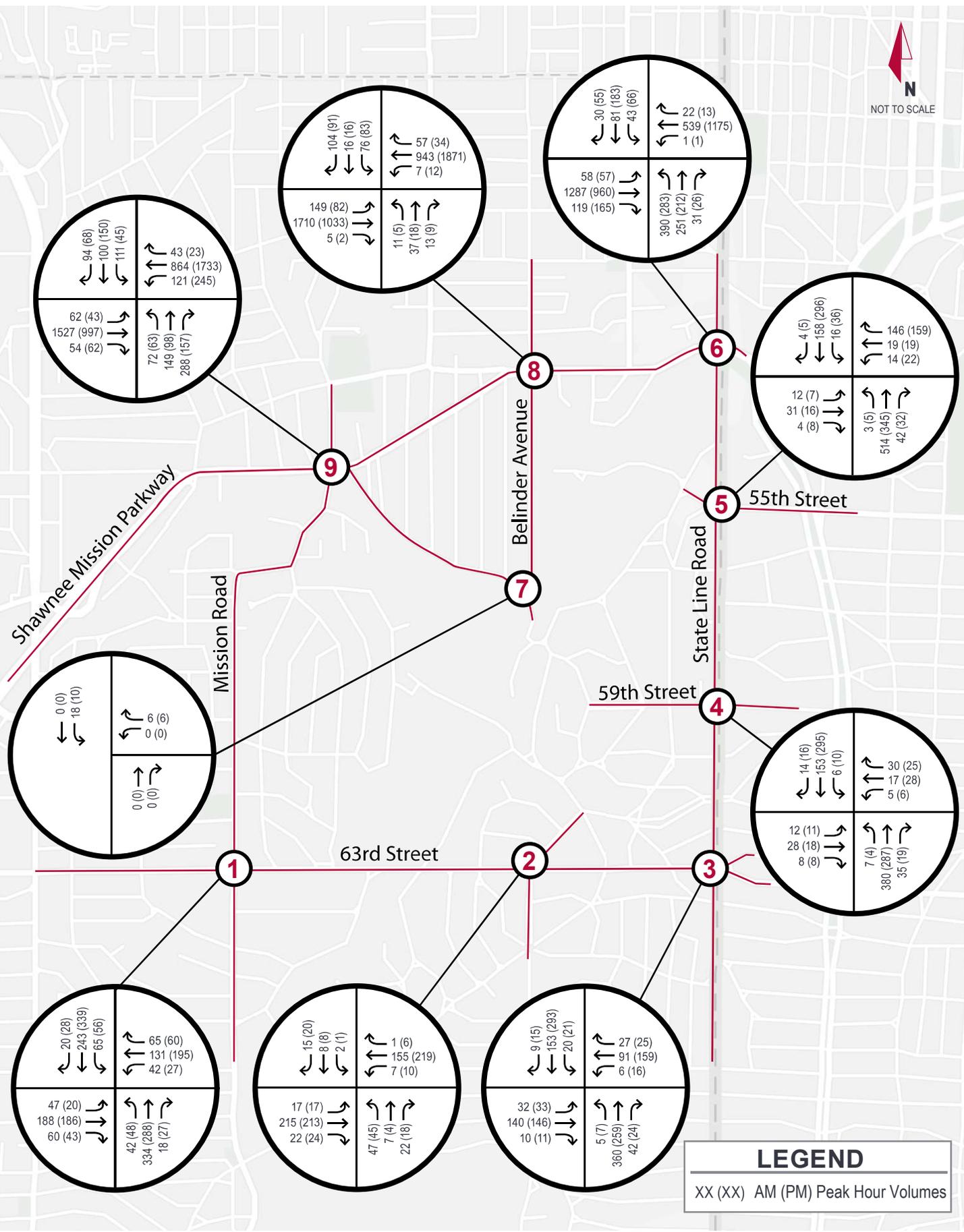


**LEGEND**  
XX (XX) AM (PM) Peak Hour Volumes

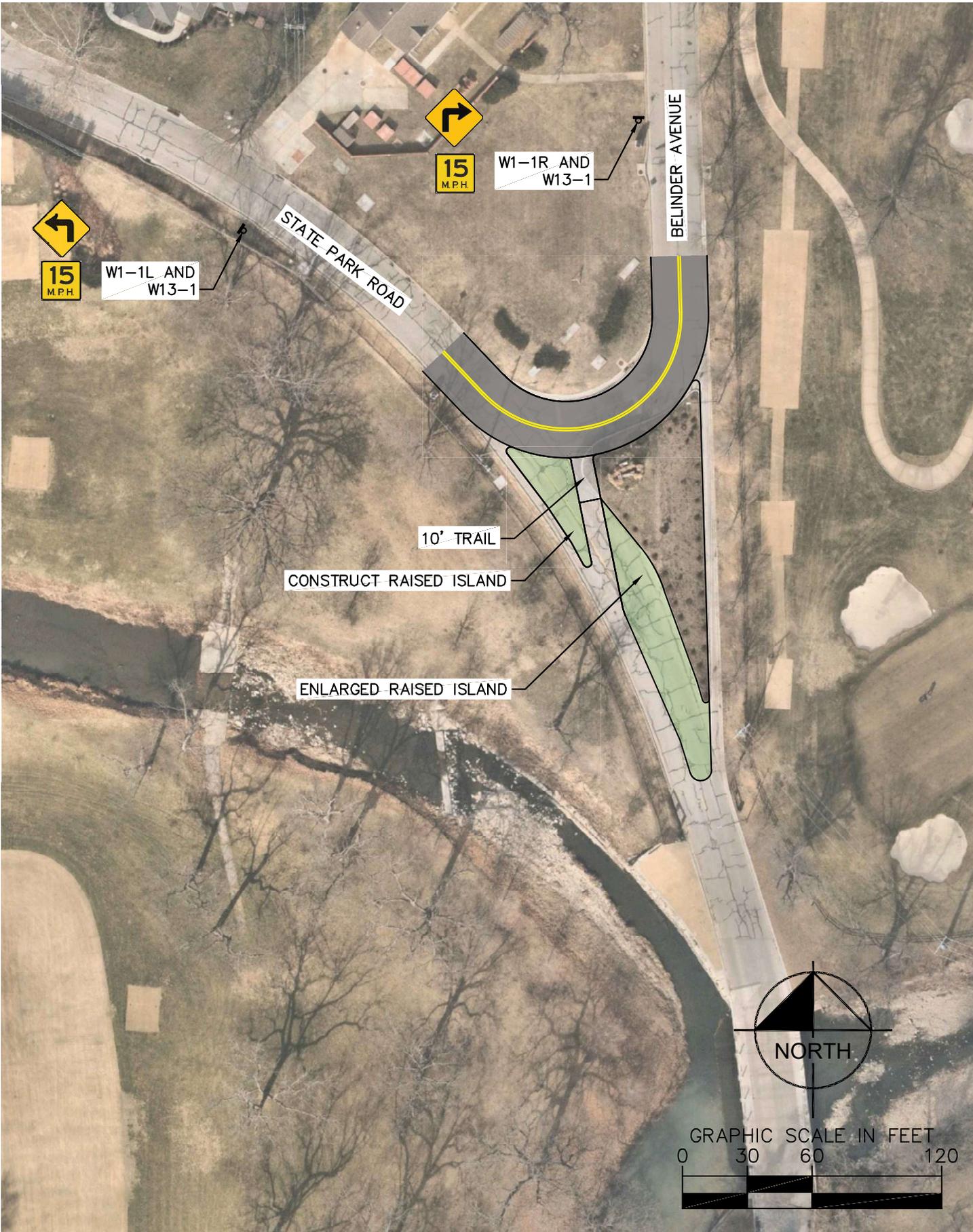




**LEGEND**  
XX (XX) AM (PM) Peak Hour Volumes



**LEGEND**  
XX (XX) AM (PM) Peak Hour Volumes





# Appendix B: Peak Hour Turning Movement Counts



TMC - 63rd & Mission Rd - TMC

Tue Mar 21, 2023

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047706, Location: 39.015086, -94.630384



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	63rd St Eastbound					63rd St Westbound					Mission Rd Northbound					Mission Rd Southbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2023-03-21 7:00AM	0	23	5	0	28	8	18	1	0	27	3	39	1	0	43	4	40	0	0	44	142
7:15AM	1	28	11	0	40	5	33	3	0	41	5	44	0	0	49	3	86	3	0	92	222
7:30AM	5	47	13	0	65	18	28	3	0	49	10	69	3	0	82	5	71	5	0	81	277
7:45AM	4	45	11	0	60	9	33	6	0	48	9	100	5	0	114	11	48	4	0	63	285
Hourly Total	10	143	40	0	193	40	112	13	0	165	27	252	9	0	288	23	245	12	0	280	926
8:00AM	25	43	12	0	80	10	36	9	0	55	11	98	5	0	114	5	48	5	0	58	307
8:15AM	13	53	24	0	90	9	34	7	0	50	12	61	7	0	80	5	67	6	0	78	298
8:30AM	28	61	34	0	123	11	35	7	0	53	12	57	3	0	72	4	65	12	0	81	329
8:45AM	5	48	17	0	70	11	33	5	0	49	7	47	3	0	57	4	47	5	0	56	232
Hourly Total	71	205	87	0	363	41	138	28	0	207	42	263	18	0	323	18	227	28	0	273	1166
4:00PM	3	34	10	0	47	6	44	7	0	57	19	54	5	0	78	1	54	2	0	57	239
4:15PM	3	35	8	0	46	10	54	3	0	67	10	65	6	0	81	3	54	7	0	64	258
4:30PM	2	32	6	0	40	9	55	4	0	68	14	59	6	0	79	7	74	4	0	85	272
4:45PM	3	46	14	0	63	6	50	6	0	62	16	53	8	0	77	4	90	9	0	103	305
Hourly Total	11	147	38	0	196	31	203	20	0	254	59	231	25	0	315	15	272	22	0	309	1074
5:00PM	5	46	11	0	62	8	48	4	0	60	9	73	8	0	90	3	72	7	0	82	294
5:15PM	9	52	7	0	68	10	53	12	0	75	8	81	7	0	96	6	88	3	0	97	336
5:30PM	3	42	11	0	56	7	44	11	0	62	15	77	5	0	97	5	80	9	0	94	309
5:45PM	9	40	10	0	59	5	38	8	0	51	14	45	6	0	65	7	81	1	0	89	264
Hourly Total	26	180	39	0	245	30	183	35	0	248	46	276	26	0	348	21	321	20	0	362	1203
<b>Total</b>	<b>118</b>	<b>675</b>	<b>204</b>	<b>0</b>	<b>997</b>	<b>142</b>	<b>636</b>	<b>96</b>	<b>0</b>	<b>874</b>	<b>174</b>	<b>1022</b>	<b>78</b>	<b>0</b>	<b>1274</b>	<b>77</b>	<b>1065</b>	<b>82</b>	<b>0</b>	<b>1224</b>	<b>4369</b>
<b>% Approach</b>	11.8%	67.7%	20.5%	0%	-	16.2%	72.8%	11.0%	0%	-	13.7%	80.2%	6.1%	0%	-	6.3%	87.0%	6.7%	0%	-	-
<b>% Total</b>	2.7%	15.4%	4.7%	0%	<b>22.8%</b>	3.3%	14.6%	2.2%	0%	<b>20.0%</b>	4.0%	23.4%	1.8%	0%	<b>29.2%</b>	1.8%	24.4%	1.9%	0%	<b>28.0%</b>	-
<b>Lights</b>	117	667	198	0	<b>982</b>	139	629	95	0	<b>863</b>	171	1017	78	0	<b>1266</b>	76	1054	80	0	<b>1210</b>	4321
<b>% Lights</b>	99.2%	98.8%	97.1%	0%	<b>98.5%</b>	97.9%	98.9%	99.0%	0%	<b>98.7%</b>	98.3%	99.5%	100%	0%	<b>99.4%</b>	98.7%	99.0%	97.6%	0%	<b>98.9%</b>	98.9%
<b>Articulated Trucks</b>	0	1	1	0	<b>2</b>	0	0	0	0	<b>0</b>	0	1	0	0	<b>1</b>	0	0	0	0	<b>0</b>	3
<b>% Articulated Trucks</b>	0%	0.1%	0.5%	0%	<b>0.2%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0.1%	0%	0%	<b>0.1%</b>	0%	0%	0%	0%	<b>0%</b>	0.1%
<b>Buses and Single-Unit Trucks</b>	1	7	5	0	<b>13</b>	3	7	1	0	<b>11</b>	3	4	0	0	<b>7</b>	1	11	2	0	<b>14</b>	45
<b>% Buses and Single-Unit Trucks</b>	0.8%	1.0%	2.5%	0%	<b>1.3%</b>	2.1%	1.1%	1.0%	0%	<b>1.3%</b>	1.7%	0.4%	0%	0%	<b>0.5%</b>	1.3%	1.0%	2.4%	0%	<b>1.1%</b>	1.0%

\*L: Left, R: Right, T: Thru, U: U-Turn

TMC - 63rd & Mission Rd - TMC

Tue Mar 21, 2023

Full Length (7 AM-9 AM, 4 PM-6 PM)

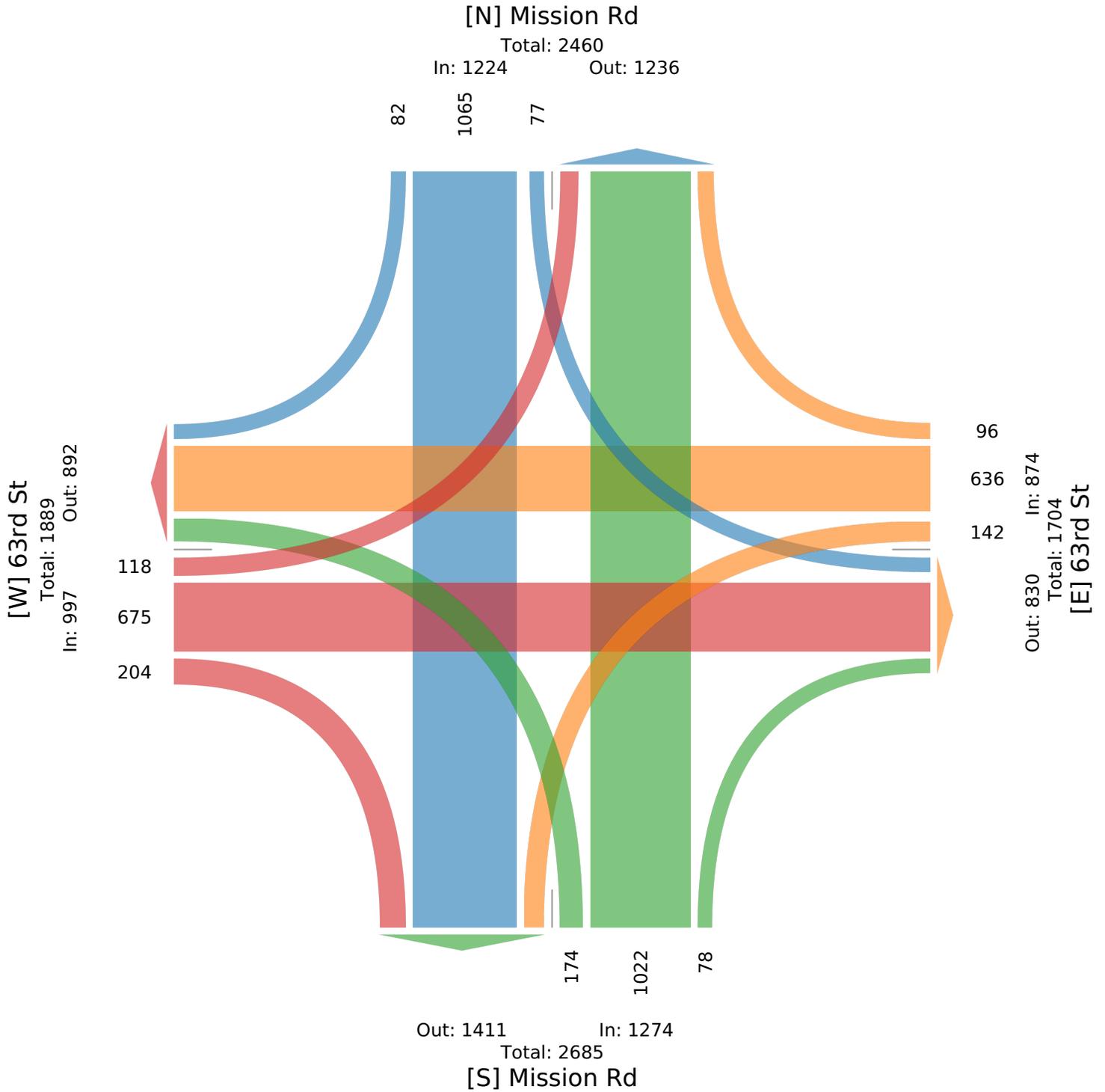
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047706, Location: 39.015086, -94.630384



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



TMC - 63rd & Mission Rd - TMC

Tue Mar 21, 2023

AM Peak (7:45 AM - 8:45 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047706, Location: 39.015086, -94.630384



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	63rd St Eastbound					63rd St Westbound					Mission Rd Northbound					Mission Rd Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2023-03-21 7:45AM	4	45	11	0	<b>60</b>	9	33	6	0	<b>48</b>	9	100	5	0	<b>114</b>	11	48	4	0	<b>63</b>	<b>285</b>
8:00AM	25	43	12	0	<b>80</b>	10	36	9	0	<b>55</b>	11	98	5	0	<b>114</b>	5	48	5	0	<b>58</b>	<b>307</b>
8:15AM	13	53	24	0	<b>90</b>	9	34	7	0	<b>50</b>	12	61	7	0	<b>80</b>	5	67	6	0	<b>78</b>	<b>298</b>
8:30AM	28	61	34	0	<b>123</b>	11	35	7	0	<b>53</b>	12	57	3	0	<b>72</b>	4	65	12	0	<b>81</b>	<b>329</b>
<b>Total</b>	<b>70</b>	<b>202</b>	<b>81</b>	<b>0</b>	<b>353</b>	<b>39</b>	<b>138</b>	<b>29</b>	<b>0</b>	<b>206</b>	<b>44</b>	<b>316</b>	<b>20</b>	<b>0</b>	<b>380</b>	<b>25</b>	<b>228</b>	<b>27</b>	<b>0</b>	<b>280</b>	<b>1219</b>
<b>% Approach</b>	19.8%	57.2%	22.9%	0%	-	18.9%	67.0%	14.1%	0%	-	11.6%	83.2%	5.3%	0%	-	8.9%	81.4%	9.6%	0%	-	-
<b>% Total</b>	5.7%	16.6%	6.6%	0%	<b>29.0%</b>	3.2%	11.3%	2.4%	0%	<b>16.9%</b>	3.6%	25.9%	1.6%	0%	<b>31.2%</b>	2.1%	18.7%	2.2%	0%	<b>23.0%</b>	-
<b>PHF</b>	0.625	0.828	0.596	-	<b>0.717</b>	0.886	0.958	0.806	-	<b>0.936</b>	0.917	0.790	0.714	-	<b>0.833</b>	0.568	0.851	0.563	-	<b>0.864</b>	0.926
<b>Lights</b>	70	196	80	0	<b>346</b>	37	136	29	0	<b>202</b>	42	314	20	0	<b>376</b>	25	223	27	0	<b>275</b>	1199
<b>% Lights</b>	100%	97.0%	98.8%	0%	<b>98.0%</b>	94.9%	98.6%	100%	0%	<b>98.1%</b>	95.5%	99.4%	100%	0%	<b>98.9%</b>	100%	97.8%	100%	0%	<b>98.2%</b>	98.4%
<b>Articulated Trucks</b>	0	1	1	0	<b>2</b>	0	0	0	0	<b>0</b>	0	0	0	0	<b>0</b>	0	0	0	0	<b>0</b>	2
<b>% Articulated Trucks</b>	0%	0.5%	1.2%	0%	<b>0.6%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0.2%
<b>Buses and Single-Unit Trucks</b>	0	5	0	0	<b>5</b>	2	2	0	0	<b>4</b>	2	2	0	0	<b>4</b>	0	5	0	0	<b>5</b>	18
<b>% Buses and Single-Unit Trucks</b>	0%	2.5%	0%	0%	<b>1.4%</b>	5.1%	1.4%	0%	0%	<b>1.9%</b>	4.5%	0.6%	0%	0%	<b>1.1%</b>	0%	2.2%	0%	0%	<b>1.8%</b>	1.5%

\* L: Left, R: Right, T: Thru, U: U-Turn

TMC - 63rd & Mission Rd - TMC

Tue Mar 21, 2023

AM Peak (7:45 AM - 8:45 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047706, Location: 39.015086, -94.630384



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Mission Rd

Total: 695

In: 280

Out: 415

27  
228  
25

[W] 63rd St

Total: 562  
In: 353  
Out: 209

70  
202  
81

29  
138  
39

Out: 247  
In: 206  
Total: 453  
[E] 63rd St

44  
316  
20

Out: 348  
In: 380  
Total: 728

[S] Mission Rd



TMC - 63rd & Mission Rd - TMC

Tue Mar 21, 2023

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

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047706, Location: 39.015086, -94.630384



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	63rd St Eastbound					63rd St Westbound					Mission Rd Northbound					Mission Rd Southbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2023-03-21 4:45PM	3	46	14	0	<b>63</b>	6	50	6	0	<b>62</b>	16	53	8	0	<b>77</b>	4	90	9	0	<b>103</b>	<b>305</b>
5:00PM	5	46	11	0	<b>62</b>	8	48	4	0	<b>60</b>	9	73	8	0	<b>90</b>	3	72	7	0	<b>82</b>	<b>294</b>
5:15PM	9	52	7	0	<b>68</b>	10	53	12	0	<b>75</b>	8	81	7	0	<b>96</b>	6	88	3	0	<b>97</b>	<b>336</b>
5:30PM	3	42	11	0	<b>56</b>	7	44	11	0	<b>62</b>	15	77	5	0	<b>97</b>	5	80	9	0	<b>94</b>	<b>309</b>
<b>Total</b>	20	186	43	0	<b>249</b>	31	195	33	0	<b>259</b>	48	284	28	0	<b>360</b>	18	330	28	0	<b>376</b>	<b>1244</b>
<b>% Approach</b>	8.0%	74.7%	17.3%	0%	-	12.0%	75.3%	12.7%	0%	-	13.3%	78.9%	7.8%	0%	-	4.8%	87.8%	7.4%	0%	-	-
<b>% Total</b>	1.6%	15.0%	3.5%	0%	<b>20.0%</b>	2.5%	15.7%	2.7%	0%	<b>20.8%</b>	3.9%	22.8%	2.3%	0%	<b>28.9%</b>	1.4%	26.5%	2.3%	0%	<b>30.2%</b>	-
<b>PHF</b>	0.556	0.894	0.768	-	<b>0.915</b>	0.775	0.920	0.688	-	<b>0.863</b>	0.750	0.877	0.875	-	<b>0.928</b>	0.750	0.917	0.778	-	<b>0.913</b>	0.926
<b>Lights</b>	20	186	43	0	<b>249</b>	31	193	33	0	<b>257</b>	47	283	28	0	<b>358</b>	18	330	27	0	<b>375</b>	1239
<b>% Lights</b>	100%	100%	100%	0%	<b>100%</b>	100%	99.0%	100%	0%	<b>99.2%</b>	97.9%	99.6%	100%	0%	<b>99.4%</b>	100%	100%	96.4%	0%	<b>99.7%</b>	99.6%
<b>Articulated Trucks</b>	0	0	0	0	<b>0</b>	0	0	0	0	<b>0</b>	0	0	0	0	<b>0</b>	0	0	0	0	<b>0</b>	0
<b>% Articulated Trucks</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0%
<b>Buses and Single-Unit Trucks</b>	0	0	0	0	<b>0</b>	0	2	0	0	<b>2</b>	1	1	0	0	<b>2</b>	0	0	1	0	<b>1</b>	5
<b>% Buses and Single-Unit Trucks</b>	0%	0%	0%	0%	<b>0%</b>	0%	1.0%	0%	0%	<b>0.8%</b>	2.1%	0.4%	0%	0%	<b>0.6%</b>	0%	0%	3.6%	0%	<b>0.3%</b>	0.4%

\* L: Left, R: Right, T: Thru, U: U-Turn

TMC - 63rd & Mission Rd - TMC

Tue Mar 21, 2023

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

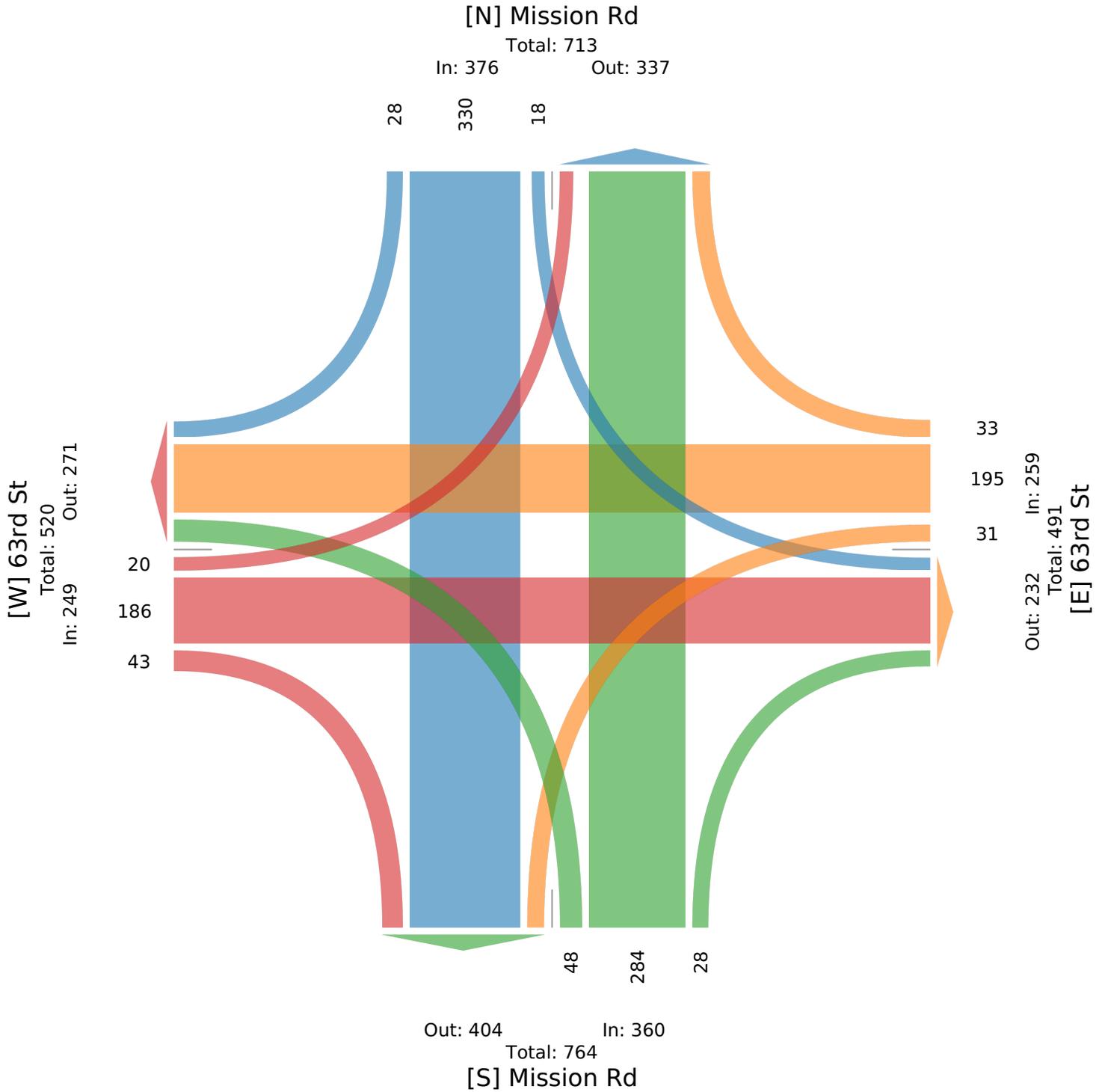
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047706, Location: 39.015086, -94.630384



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



TMC - 63rd & Belinder Ave - TMC

Tue Mar 21, 2023

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047707, Location: 39.015161, -94.616555



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	63rd St Eastbound					63rd St Westbound					Belinder Rd Northbound					Overhill Rd Southbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2023-03-21 7:00AM	0	17	3	0	20	0	29	0	0	29	2	0	0	0	2	0	1	0	0	1	52
7:15AM	0	30	4	0	34	2	30	1	0	33	4	2	1	0	7	0	2	1	0	3	77
7:30AM	0	56	5	0	61	2	31	0	0	33	10	2	5	0	17	1	6	0	0	7	118
7:45AM	0	40	6	0	46	3	42	0	0	45	10	3	5	0	18	0	2	0	0	2	111
Hourly Total	0	143	18	0	161	7	132	1	0	140	26	7	11	0	44	1	11	1	0	13	358
8:00AM	1	63	3	0	67	0	42	0	0	42	11	1	7	0	19	0	2	1	0	3	131
8:15AM	0	53	5	0	58	2	36	1	0	39	6	3	5	0	14	1	2	1	0	4	115
8:30AM	0	56	14	0	70	6	30	0	0	36	11	1	4	0	16	1	1	1	0	3	125
8:45AM	1	46	6	0	53	2	45	4	0	51	2	1	4	0	7	0	1	0	0	1	112
Hourly Total	2	218	28	0	248	10	153	5	0	168	30	6	20	0	56	2	6	3	0	11	483
4:00PM	0	37	6	0	43	2	41	1	0	44	11	0	5	0	16	3	1	2	0	6	109
4:15PM	0	40	2	0	42	3	46	0	0	49	5	0	2	0	7	0	4	2	0	6	104
4:30PM	1	39	5	0	45	4	56	0	0	60	10	1	5	0	16	3	0	1	0	4	125
4:45PM	2	52	8	0	62	3	50	1	0	54	11	0	4	0	15	1	5	2	0	8	139
Hourly Total	3	168	21	0	192	12	193	2	0	207	37	1	16	0	54	7	10	7	0	24	477
5:00PM	0	54	4	0	58	1	49	2	0	52	11	2	7	0	20	0	2	2	0	4	134
5:15PM	0	61	5	0	66	6	63	0	0	69	9	2	5	0	16	0	4	4	0	8	159
5:30PM	0	43	4	0	47	0	55	3	0	58	8	1	2	0	11	0	1	3	0	4	120
5:45PM	1	51	7	0	59	2	48	0	0	50	7	3	4	0	14	0	1	1	0	2	125
Hourly Total	1	209	20	0	230	9	215	5	0	229	35	8	18	0	61	0	8	10	0	18	538
<b>Total</b>	<b>6</b>	<b>738</b>	<b>87</b>	<b>0</b>	<b>831</b>	<b>38</b>	<b>693</b>	<b>13</b>	<b>0</b>	<b>744</b>	<b>128</b>	<b>22</b>	<b>65</b>	<b>0</b>	<b>215</b>	<b>10</b>	<b>35</b>	<b>21</b>	<b>0</b>	<b>66</b>	<b>1856</b>
<b>% Approach</b>	0.7%	88.8%	10.5%	0%	-	5.1%	93.1%	1.7%	0%	-	59.5%	10.2%	30.2%	0%	-	15.2%	53.0%	31.8%	0%	-	-
<b>% Total</b>	0.3%	39.8%	4.7%	0%	<b>44.8%</b>	2.0%	37.3%	0.7%	0%	<b>40.1%</b>	6.9%	1.2%	3.5%	0%	<b>11.6%</b>	0.5%	1.9%	1.1%	0%	<b>3.6%</b>	-
<b>Lights</b>	6	734	85	0	<b>825</b>	38	684	13	0	<b>735</b>	127	22	65	0	<b>214</b>	9	34	20	0	<b>63</b>	1837
<b>% Lights</b>	100%	99.5%	97.7%	0%	<b>99.3%</b>	100%	98.7%	100%	0%	<b>98.8%</b>	99.2%	100%	100%	0%	<b>99.5%</b>	90.0%	97.1%	95.2%	0%	<b>95.5%</b>	99.0%
<b>Articulated Trucks</b>	0	1	0	0	<b>1</b>	0	0	0	0	<b>0</b>	0	0	0	0	<b>0</b>	0	0	0	0	<b>0</b>	1
<b>% Articulated Trucks</b>	0%	0.1%	0%	0%	<b>0.1%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0.1%
<b>Buses and Single-Unit Trucks</b>	0	3	2	0	<b>5</b>	0	9	0	0	<b>9</b>	1	0	0	0	<b>1</b>	1	1	1	0	<b>3</b>	18
<b>% Buses and Single-Unit Trucks</b>	0%	0.4%	2.3%	0%	<b>0.6%</b>	0%	1.3%	0%	0%	<b>1.2%</b>	0.8%	0%	0%	0%	<b>0.5%</b>	10.0%	2.9%	4.8%	0%	<b>4.5%</b>	1.0%

\*L: Left, R: Right, T: Thru, U: U-Turn

TMC - 63rd & Belinder Ave - TMC

Tue Mar 21, 2023

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047707, Location: 39.015161, -94.616555



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

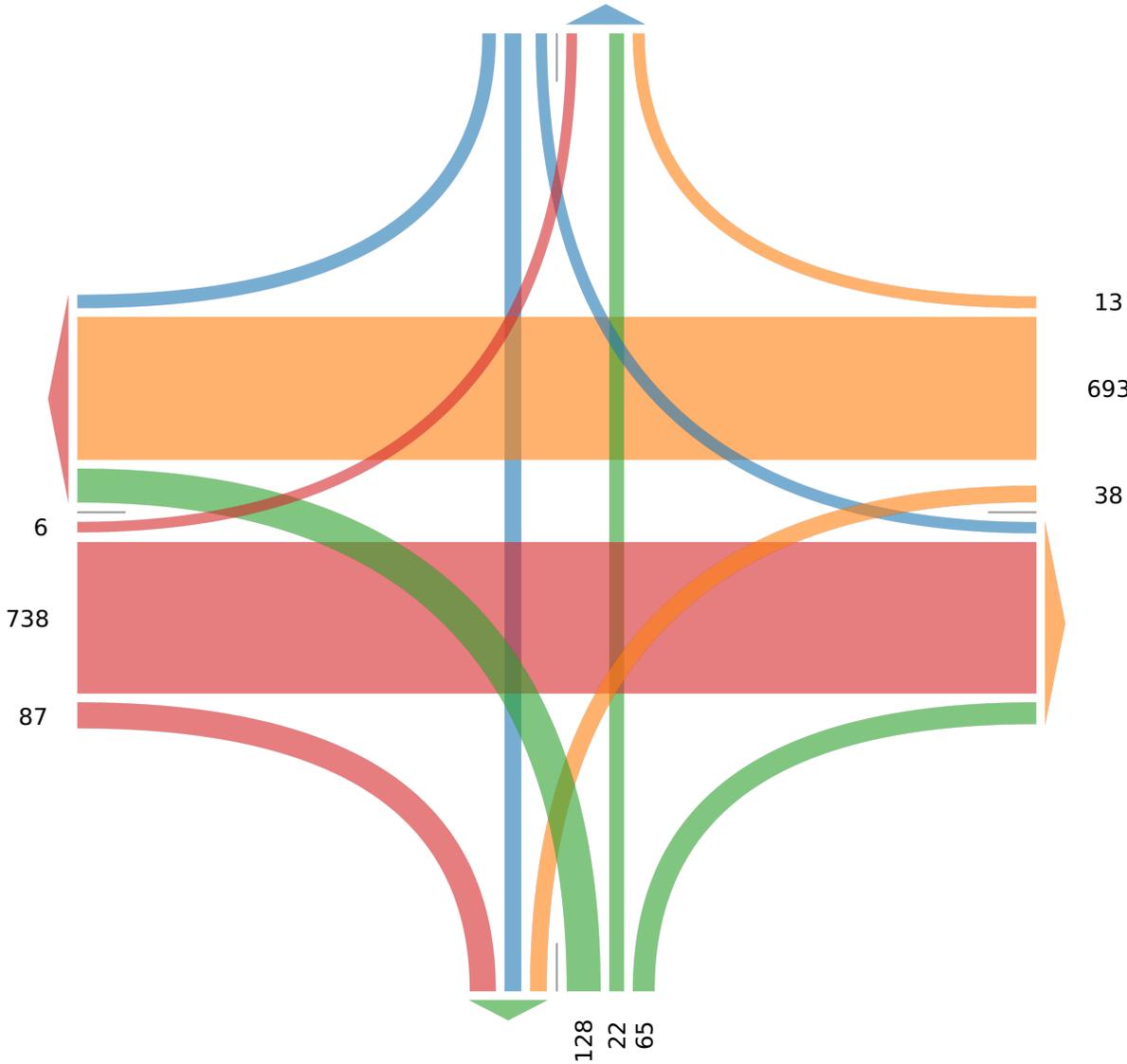
[N] Overhill Rd

Total: 107

In: 66 Out: 41

21 35 10

[W] 63rd St  
Total: 1673  
In: 831 Out: 842



[E] 63rd St  
Total: 1557  
In: 744 Out: 813

[S] Belinder Rd  
Total: 375  
In: 215 Out: 160

TMC - 63rd & Belinder Ave - TMC

Tue Mar 21, 2023

AM Peak (8 AM - 9 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047707, Location: 39.015161, -94.616555



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	63rd St Eastbound					63rd St Westbound					Belinder Rd Northbound					Overhill Rd Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2023-03-21 8:00AM	1	63	3	0	67	0	42	0	0	42	11	1	7	0	19	0	2	1	0	3	131
8:15AM	0	53	5	0	58	2	36	1	0	39	6	3	5	0	14	1	2	1	0	4	115
8:30AM	0	56	14	0	70	6	30	0	0	36	11	1	4	0	16	1	1	1	0	3	125
8:45AM	1	46	6	0	53	2	45	4	0	51	2	1	4	0	7	0	1	0	0	1	112
<b>Total</b>	2	218	28	0	248	10	153	5	0	168	30	6	20	0	56	2	6	3	0	11	483
<b>% Approach</b>	0.8%	87.9%	11.3%	0%	-	6.0%	91.1%	3.0%	0%	-	53.6%	10.7%	35.7%	0%	-	18.2%	54.5%	27.3%	0%	-	-
<b>% Total</b>	0.4%	45.1%	5.8%	0%	51.3%	2.1%	31.7%	1.0%	0%	34.8%	6.2%	1.2%	4.1%	0%	11.6%	0.4%	1.2%	0.6%	0%	2.3%	-
<b>PHF</b>	0.500	0.865	0.500	-	0.886	0.417	0.850	0.313	-	0.824	0.682	0.500	0.714	-	0.737	0.500	0.750	0.750	-	0.688	0.922
<b>Lights</b>	2	214	26	0	242	10	150	5	0	165	29	6	20	0	55	2	6	3	0	11	473
<b>% Lights</b>	100%	98.2%	92.9%	0%	97.6%	100%	98.0%	100%	0%	98.2%	96.7%	100%	100%	0%	98.2%	100%	100%	100%	0%	100%	97.9%
<b>Articulated Trucks</b>	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>% Articulated Trucks</b>	0%	0.5%	0%	0%	0.4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.2%
<b>Buses and Single-Unit Trucks</b>	0	3	2	0	5	0	3	0	0	3	1	0	0	0	1	0	0	0	0	0	9
<b>% Buses and Single-Unit Trucks</b>	0%	1.4%	7.1%	0%	2.0%	0%	2.0%	0%	0%	1.8%	3.3%	0%	0%	0%	1.8%	0%	0%	0%	0%	0%	1.9%

\* L: Left, R: Right, T: Thru, U: U-Turn

TMC - 63rd & Belinder Ave - TMC

Tue Mar 21, 2023

AM Peak (8 AM - 9 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047707, Location: 39.015161, -94.616555



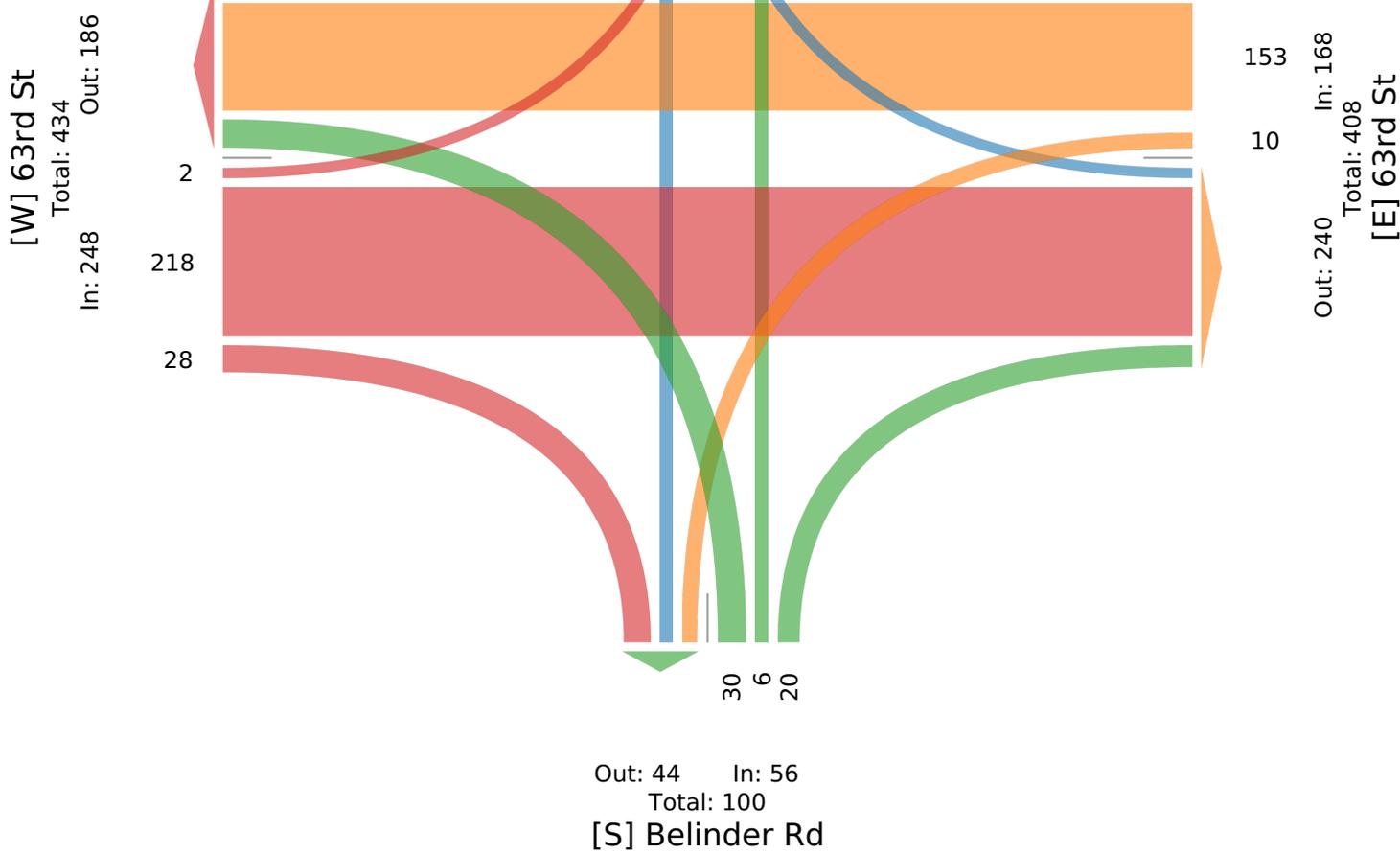
Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Overhill Rd

Total: 24

In: 11 Out: 13

3 6 2



TMC - 63rd & Belinder Ave - TMC

Tue Mar 21, 2023

PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047707, Location: 39.015161, -94.616555



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	63rd St Eastbound					63rd St Westbound					Belinder Rd Northbound					Overhill Rd Southbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2023-03-21 4:30PM	1	39	5	0	45	4	56	0	0	60	10	1	5	0	16	3	0	1	0	4	125
4:45PM	2	52	8	0	62	3	50	1	0	54	11	0	4	0	15	1	5	2	0	8	139
5:00PM	0	54	4	0	58	1	49	2	0	52	11	2	7	0	20	0	2	2	0	4	134
5:15PM	0	61	5	0	66	6	63	0	0	69	9	2	5	0	16	0	4	4	0	8	159
<b>Total</b>	3	206	22	0	231	14	218	3	0	235	41	5	21	0	67	4	11	9	0	24	557
<b>% Approach</b>	1.3%	89.2%	9.5%	0%	-	6.0%	92.8%	1.3%	0%	-	61.2%	7.5%	31.3%	0%	-	16.7%	45.8%	37.5%	0%	-	-
<b>% Total</b>	0.5%	37.0%	3.9%	0%	41.5%	2.5%	39.1%	0.5%	0%	42.2%	7.4%	0.9%	3.8%	0%	12.0%	0.7%	2.0%	1.6%	0%	4.3%	-
<b>PHF</b>	0.375	0.844	0.688	-	0.875	0.583	0.865	0.375	-	0.851	0.932	0.625	0.750	-	0.838	0.333	0.550	0.563	-	0.750	0.876
<b>Lights</b>	3	206	22	0	231	14	216	3	0	233	41	5	21	0	67	4	11	9	0	24	555
<b>% Lights</b>	100%	100%	100%	0%	100%	100%	99.1%	100%	0%	99.1%	100%	100%	100%	0%	100%	100%	100%	100%	0%	100%	99.6%
<b>Articulated Trucks</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>% Articulated Trucks</b>	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Buses and Single-Unit Trucks</b>	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
<b>% Buses and Single-Unit Trucks</b>	0%	0%	0%	0%	0%	0%	0.9%	0%	0%	0.9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.4%

\* L: Left, R: Right, T: Thru, U: U-Turn

TMC - 63rd & Belinder Ave - TMC

Tue Mar 21, 2023

PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047707, Location: 39.015161, -94.616555



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

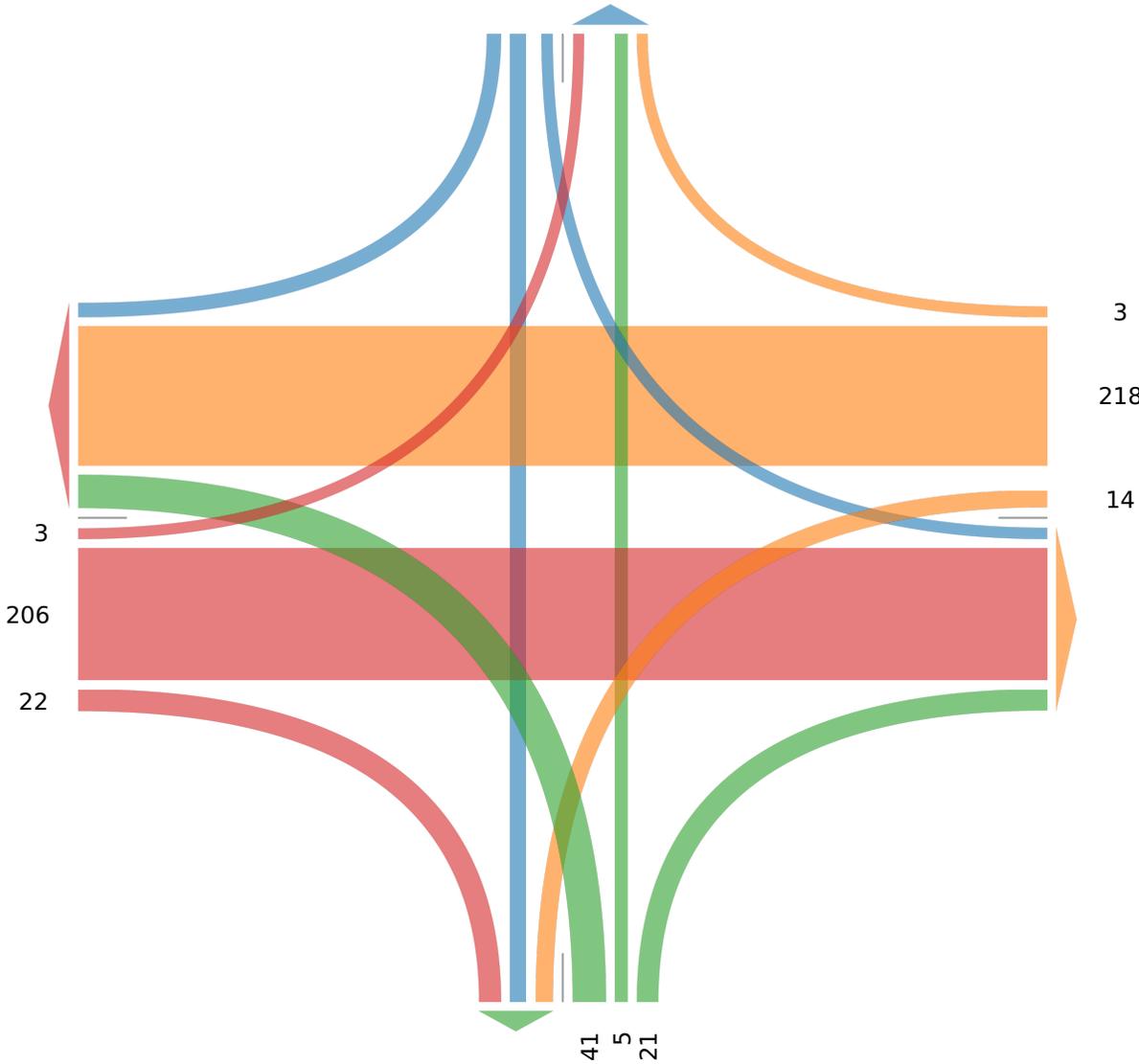
[N] Overhill Rd

Total: 35

In: 24 Out: 11

9 11 4

[W] 63rd St  
Total: 499  
In: 231 Out: 268



3  
218  
14  
Out: 231 In: 235  
Total: 466  
[E] 63rd St

Out: 47 In: 67  
Total: 114  
[S] Belinder Rd

TMC - 63rd & State Line Rd - TMC

Tue Mar 21, 2023

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047708, Location: 39.015143, -94.607762



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	63rd St Eastbound					63rd St Westbound					State Line Rd Northbound					State Line Rd Southbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2023-03-21 7:00AM	2	9	0	0	11	2	12	3	0	17	1	44	0	0	45	1	10	2	0	13	86
7:15AM	2	25	2	0	29	1	20	9	0	30	0	48	6	0	54	0	25	3	0	28	141
7:30AM	6	37	1	0	44	1	19	2	0	22	1	83	4	0	88	1	31	3	0	35	189
7:45AM	8	39	1	0	48	3	22	9	0	34	0	97	16	0	113	5	37	1	0	43	238
Hourly Total	18	110	4	0	132	7	73	23	0	103	2	272	26	0	300	7	103	9	0	119	654
8:00AM	12	31	6	0	49	0	32	5	0	37	2	76	13	0	91	5	42	2	0	49	226
8:15AM	6	39	2	0	47	2	24	5	0	31	2	88	9	0	99	1	31	3	0	35	212
8:30AM	7	43	5	0	55	1	23	4	0	28	1	70	9	0	80	2	30	5	0	37	200
8:45AM	5	32	4	0	41	1	23	6	0	30	1	59	5	0	65	5	32	4	0	41	177
Hourly Total	30	145	17	0	192	4	102	20	0	126	6	293	36	0	335	13	135	14	0	162	815
4:00PM	8	23	2	0	33	1	36	3	0	40	1	42	7	0	50	3	48	4	0	55	178
4:15PM	2	36	2	0	40	6	30	8	0	44	3	44	5	0	52	4	54	10	0	68	204
4:30PM	8	29	3	0	40	2	35	4	0	41	2	53	4	0	59	3	65	5	0	73	213
4:45PM	10	33	1	0	44	3	31	11	0	45	1	66	6	0	73	3	81	2	0	86	248
Hourly Total	28	121	8	0	157	12	132	26	0	170	7	205	22	0	234	13	248	21	0	282	843
5:00PM	10	38	3	0	51	2	46	3	0	51	2	62	6	0	70	6	71	4	0	81	253
5:15PM	8	41	4	0	53	8	48	5	0	61	2	55	4	0	61	3	76	3	0	82	257
5:30PM	5	39	3	0	47	3	38	2	0	43	2	65	8	0	75	1	53	6	0	60	225
5:45PM	2	35	2	0	39	3	29	5	0	37	2	50	14	0	66	5	51	6	0	62	204
Hourly Total	25	153	12	0	190	16	161	15	0	192	8	232	32	0	272	15	251	19	0	285	939
<b>Total</b>	<b>101</b>	<b>529</b>	<b>41</b>	<b>0</b>	<b>671</b>	<b>39</b>	<b>468</b>	<b>84</b>	<b>0</b>	<b>591</b>	<b>23</b>	<b>1002</b>	<b>116</b>	<b>0</b>	<b>1141</b>	<b>48</b>	<b>737</b>	<b>63</b>	<b>0</b>	<b>848</b>	<b>3251</b>
<b>% Approach</b>	15.1%	78.8%	6.1%	0%	-	6.6%	79.2%	14.2%	0%	-	2.0%	87.8%	10.2%	0%	-	5.7%	86.9%	7.4%	0%	-	-
<b>% Total</b>	3.1%	16.3%	1.3%	0%	<b>20.6%</b>	1.2%	14.4%	2.6%	0%	<b>18.2%</b>	0.7%	30.8%	3.6%	0%	<b>35.1%</b>	1.5%	22.7%	1.9%	0%	<b>26.1%</b>	-
<b>Lights</b>	101	529	40	0	<b>670</b>	38	464	84	0	<b>586</b>	23	996	116	0	<b>1135</b>	46	733	62	0	<b>841</b>	3232
<b>% Lights</b>	100%	100%	97.6%	0%	<b>99.9%</b>	97.4%	99.1%	100%	0%	<b>99.2%</b>	100%	99.4%	100%	0%	<b>99.5%</b>	95.8%	99.5%	98.4%	0%	<b>99.2%</b>	99.4%
<b>Articulated Trucks</b>	0	0	0	0	<b>0</b>	0	0	0	0	<b>0</b>	0	0	0	0	<b>0</b>	0	1	0	0	<b>1</b>	1
<b>% Articulated Trucks</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0.1%	0%	0%	<b>0.1%</b>	0%
<b>Buses and Single-Unit Trucks</b>	0	0	1	0	<b>1</b>	1	4	0	0	<b>5</b>	0	6	0	0	<b>6</b>	2	3	1	0	<b>6</b>	18
<b>% Buses and Single-Unit Trucks</b>	0%	0%	2.4%	0%	<b>0.1%</b>	2.6%	0.9%	0%	0%	<b>0.8%</b>	0%	0.6%	0%	0%	<b>0.5%</b>	4.2%	0.4%	1.6%	0%	<b>0.7%</b>	0.6%

\*L: Left, R: Right, T: Thru, U: U-Turn

TMC - 63rd & State Line Rd - TMC

Tue Mar 21, 2023

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047708, Location: 39.015143, -94.607762



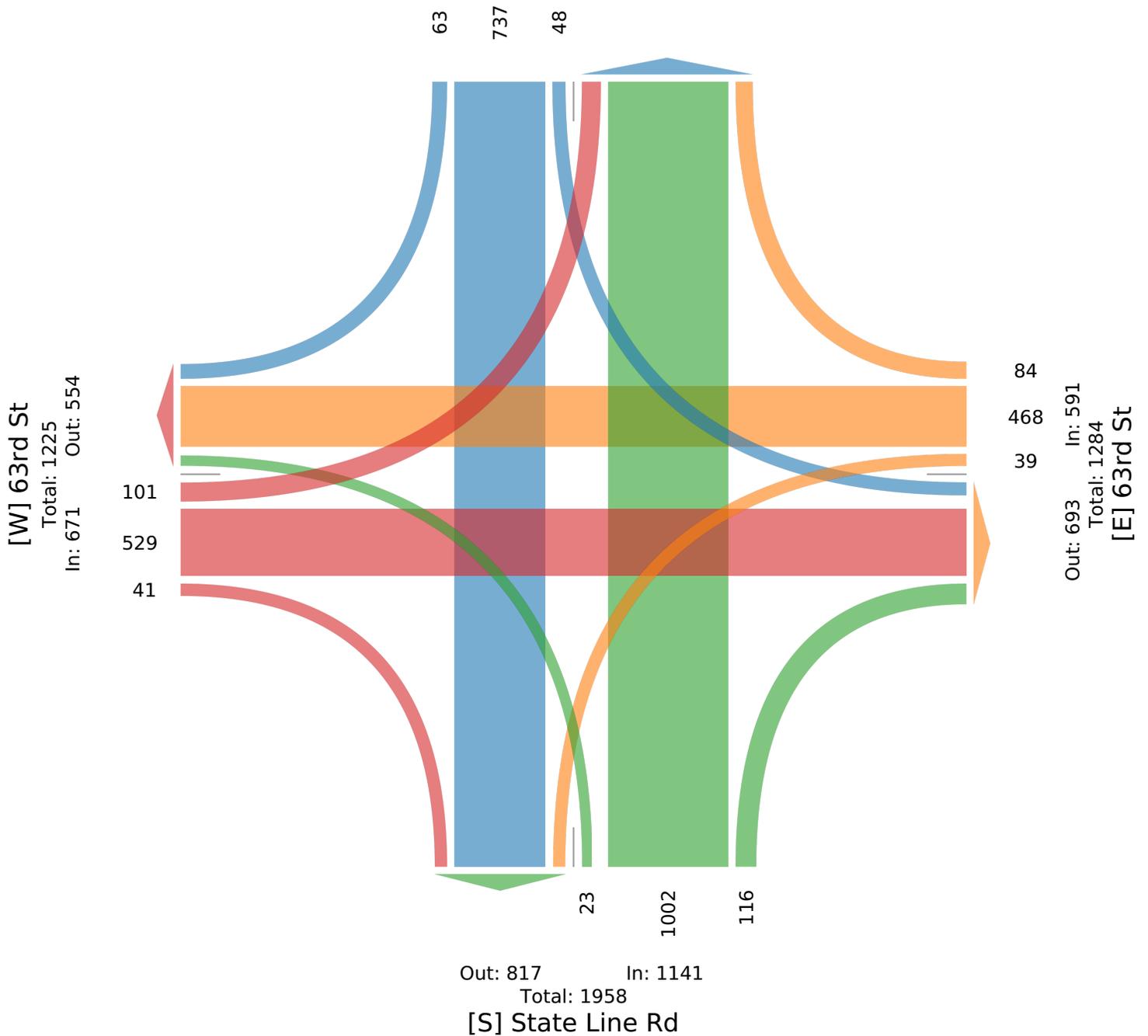
Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] State Line Rd

Total: 2035

In: 848

Out: 1187



TMC - 63rd & State Line Rd - TMC

Tue Mar 21, 2023

AM Peak (7:45 AM - 8:45 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047708, Location: 39.015143, -94.607762



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	63rd St Eastbound					63rd St Westbound					State Line Rd Northbound					State Line Rd Southbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2023-03-21 7:45AM	8	39	1	0	48	3	22	9	0	34	0	97	16	0	113	5	37	1	0	43	238
8:00AM	12	31	6	0	49	0	32	5	0	37	2	76	13	0	91	5	42	2	0	49	226
8:15AM	6	39	2	0	47	2	24	5	0	31	2	88	9	0	99	1	31	3	0	35	212
8:30AM	7	43	5	0	55	1	23	4	0	28	1	70	9	0	80	2	30	5	0	37	200
<b>Total</b>	33	152	14	0	199	6	101	23	0	130	5	331	47	0	383	13	140	11	0	164	876
<b>% Approach</b>	16.6%	76.4%	7.0%	0%	-	4.6%	77.7%	17.7%	0%	-	1.3%	86.4%	12.3%	0%	-	7.9%	85.4%	6.7%	0%	-	-
<b>% Total</b>	3.8%	17.4%	1.6%	0%	22.7%	0.7%	11.5%	2.6%	0%	14.8%	0.6%	37.8%	5.4%	0%	43.7%	1.5%	16.0%	1.3%	0%	18.7%	-
<b>PHF</b>	0.688	0.884	0.583	-	0.905	0.500	0.789	0.639	-	0.878	0.625	0.853	0.734	-	0.847	0.650	0.833	0.550	-	0.837	0.920
<b>Lights</b>	33	152	14	0	199	6	99	23	0	128	5	330	47	0	382	12	137	10	0	159	868
<b>% Lights</b>	100%	100%	100%	0%	100%	100%	98.0%	100%	0%	98.5%	100%	99.7%	100%	0%	99.7%	92.3%	97.9%	90.9%	0%	97.0%	99.1%
<b>Articulated Trucks</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>% Articulated Trucks</b>	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Buses and Single-Unit Trucks</b>	0	0	0	0	0	0	2	0	0	2	0	1	0	0	1	1	3	1	0	5	8
<b>% Buses and Single-Unit Trucks</b>	0%	0%	0%	0%	0%	0%	2.0%	0%	0%	1.5%	0%	0.3%	0%	0%	0.3%	7.7%	2.1%	9.1%	0%	3.0%	0.9%

\* L: Left, R: Right, T: Thru, U: U-Turn

TMC - 63rd & State Line Rd - TMC

Tue Mar 21, 2023

AM Peak (7:45 AM - 8:45 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047708, Location: 39.015143, -94.607762



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] State Line Rd

Total: 551

In: 164

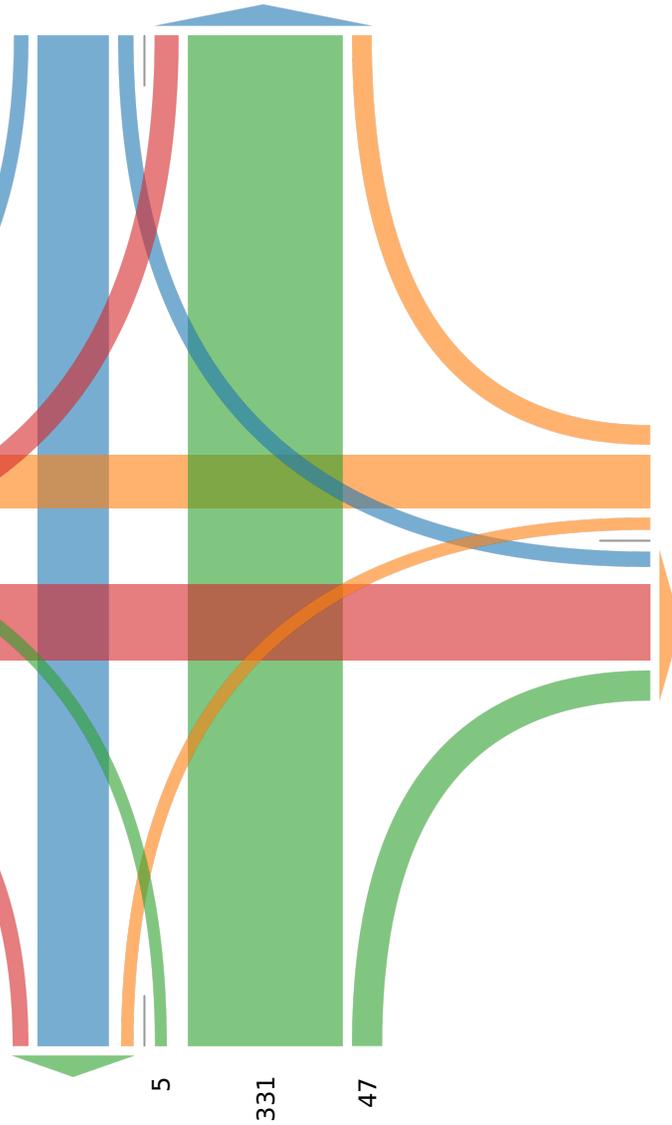
Out: 387

11 140 13

[W] 63rd St  
Total: 316  
In: 199 Out: 117

33  
152  
14

23  
101  
6  
Out: 212 In: 130  
Total: 342  
[E] 63rd St



Out: 160 In: 383  
Total: 543  
[S] State Line Rd

TMC - 63rd & State Line Rd - TMC

Tue Mar 21, 2023

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

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047708, Location: 39.015143, -94.607762



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	63rd St Eastbound					63rd St Westbound					State Line Rd Northbound					State Line Rd Southbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2023-03-21 4:45PM	10	33	1	0	<b>44</b>	3	31	11	0	<b>45</b>	1	66	6	0	<b>73</b>	3	81	2	0	<b>86</b>	<b>248</b>
5:00PM	10	38	3	0	<b>51</b>	2	46	3	0	<b>51</b>	2	62	6	0	<b>70</b>	6	71	4	0	<b>81</b>	<b>253</b>
5:15PM	8	41	4	0	<b>53</b>	8	48	5	0	<b>61</b>	2	55	4	0	<b>61</b>	3	76	3	0	<b>82</b>	<b>257</b>
5:30PM	5	39	3	0	<b>47</b>	3	38	2	0	<b>43</b>	2	65	8	0	<b>75</b>	1	53	6	0	<b>60</b>	<b>225</b>
<b>Total</b>	<b>33</b>	<b>151</b>	<b>11</b>	<b>0</b>	<b>195</b>	<b>16</b>	<b>163</b>	<b>21</b>	<b>0</b>	<b>200</b>	<b>7</b>	<b>248</b>	<b>24</b>	<b>0</b>	<b>279</b>	<b>13</b>	<b>281</b>	<b>15</b>	<b>0</b>	<b>309</b>	<b>983</b>
<b>% Approach</b>	16.9%	77.4%	5.6%	0%	-	8.0%	81.5%	10.5%	0%	-	2.5%	88.9%	8.6%	0%	-	4.2%	90.9%	4.9%	0%	-	-
<b>% Total</b>	3.4%	15.4%	1.1%	0%	<b>19.8%</b>	1.6%	16.6%	2.1%	0%	<b>20.3%</b>	0.7%	25.2%	2.4%	0%	<b>28.4%</b>	1.3%	28.6%	1.5%	0%	<b>31.4%</b>	-
<b>PHF</b>	0.825	0.921	0.688	-	<b>0.920</b>	0.500	0.849	0.477	-	<b>0.820</b>	0.875	0.939	0.750	-	<b>0.930</b>	0.542	0.867	0.625	-	<b>0.898</b>	0.956
<b>Lights</b>	33	151	11	0	<b>195</b>	15	163	21	0	<b>199</b>	7	248	24	0	<b>279</b>	12	281	15	0	<b>308</b>	981
<b>% Lights</b>	100%	100%	100%	0%	<b>100%</b>	93.8%	100%	100%	0%	<b>99.5%</b>	100%	100%	100%	0%	<b>100%</b>	92.3%	100%	100%	0%	<b>99.7%</b>	99.8%
<b>Articulated Trucks</b>	0	0	0	0	<b>0</b>	0	0	0	0	<b>0</b>	0	0	0	0	<b>0</b>	0	0	0	0	<b>0</b>	0
<b>% Articulated Trucks</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0%
<b>Buses and Single-Unit Trucks</b>	0	0	0	0	<b>0</b>	1	0	0	0	<b>1</b>	0	0	0	0	<b>0</b>	1	0	0	0	<b>1</b>	2
<b>% Buses and Single-Unit Trucks</b>	0%	0%	0%	0%	<b>0%</b>	6.3%	0%	0%	0%	<b>0.5%</b>	0%	0%	0%	0%	<b>0%</b>	7.7%	0%	0%	0%	<b>0.3%</b>	0.2%

\* L: Left, R: Right, T: Thru, U: U-Turn

TMC - 63rd & State Line Rd - TMC

Tue Mar 21, 2023

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

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047708, Location: 39.015143, -94.607762



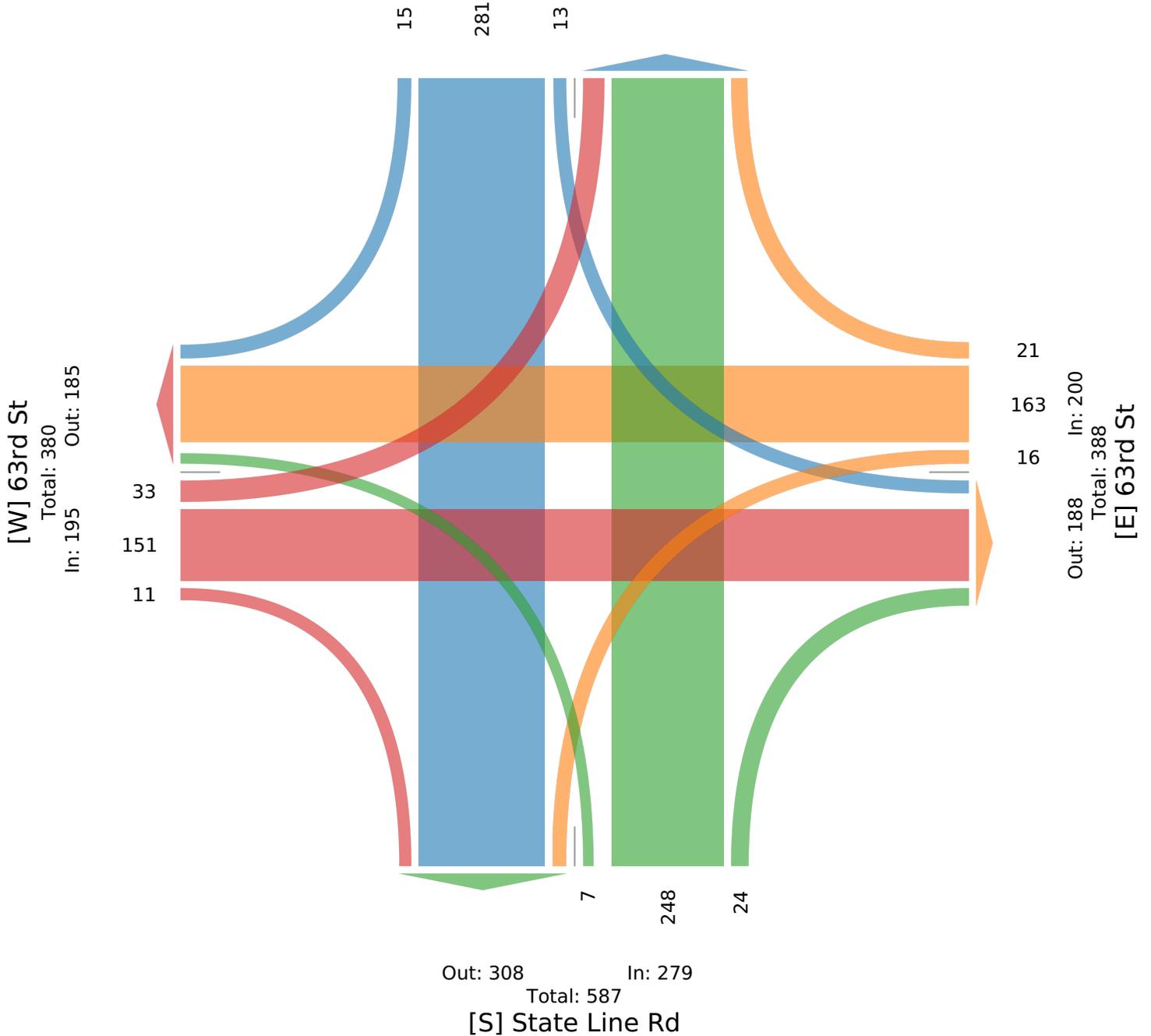
Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] State Line Rd

Total: 611

In: 309

Out: 302



TMC - 59th & State Line Rd - TMC

Tue Mar 21, 2023

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047709, Location: 39.021072, -94.607669



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	59th st Eastbound					59th St Westbound					State Line Rd Northbound					State Line Rd Southbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2023-03-21 7:00AM	0	3	0	0	3	0	1	1	0	2	4	47	3	0	54	0	15	1	0	16	75
7:15AM	2	3	2	0	7	1	1	8	0	10	1	58	4	0	63	0	20	0	0	20	100
7:30AM	1	6	1	0	8	1	2	4	0	7	2	87	7	0	96	1	33	1	0	35	146
7:45AM	0	13	5	0	18	2	9	3	0	14	3	107	14	0	124	1	32	0	0	33	189
Hourly Total	3	25	8	0	36	4	13	16	0	33	10	299	28	0	337	2	100	2	0	104	510
8:00AM	1	8	4	0	13	1	10	10	0	21	3	80	8	0	91	1	36	1	0	38	163
8:15AM	1	5	2	0	8	1	6	2	0	9	3	84	6	0	93	2	31	1	0	34	144
8:30AM	1	6	2	0	9	2	3	4	0	9	5	77	3	0	85	0	31	2	0	33	136
8:45AM	1	6	1	0	8	2	3	5	0	10	3	65	3	0	71	2	32	0	0	34	123
Hourly Total	4	25	9	0	38	6	22	21	0	49	14	306	20	0	340	5	130	4	0	139	566
4:00PM	1	4	2	0	7	1	3	3	0	7	2	57	4	0	63	0	50	0	0	50	127
4:15PM	2	13	5	0	20	3	6	8	0	17	1	44	2	0	47	1	55	2	0	58	142
4:30PM	0	8	5	0	13	2	7	3	0	12	3	61	3	0	67	0	66	1	0	67	159
4:45PM	3	4	2	0	9	3	13	5	0	21	1	80	8	0	89	2	82	3	0	87	206
Hourly Total	6	29	14	0	49	9	29	19	0	57	7	242	17	0	266	3	253	6	0	262	634
5:00PM	1	5	4	0	10	2	5	5	0	12	3	59	5	0	67	2	69	0	0	71	160
5:15PM	0	8	3	0	11	0	10	3	0	13	1	60	5	0	66	3	74	2	0	79	169
5:30PM	1	5	3	0	9	1	7	5	0	13	2	73	1	0	76	2	50	0	0	52	150
5:45PM	2	3	1	0	6	4	10	4	0	18	5	55	2	0	62	1	56	2	0	59	145
Hourly Total	4	21	11	0	36	7	32	17	0	56	11	247	13	0	271	8	249	4	0	261	624
<b>Total</b>	<b>17</b>	<b>100</b>	<b>42</b>	<b>0</b>	<b>159</b>	<b>26</b>	<b>96</b>	<b>73</b>	<b>0</b>	<b>195</b>	<b>42</b>	<b>1094</b>	<b>78</b>	<b>0</b>	<b>1214</b>	<b>18</b>	<b>732</b>	<b>16</b>	<b>0</b>	<b>766</b>	<b>2334</b>
<b>% Approach</b>	10.7%	62.9%	26.4%	0%	-	13.3%	49.2%	37.4%	0%	-	3.5%	90.1%	6.4%	0%	-	2.3%	95.6%	2.1%	0%	-	-
<b>% Total</b>	0.7%	4.3%	1.8%	0%	<b>6.8%</b>	1.1%	4.1%	3.1%	0%	<b>8.4%</b>	1.8%	46.9%	3.3%	0%	<b>52.0%</b>	0.8%	31.4%	0.7%	0%	<b>32.8%</b>	-
<b>Lights</b>	16	98	41	0	155	26	95	73	0	194	42	1089	76	0	1207	18	727	15	0	760	2316
<b>% Lights</b>	94.1%	98.0%	97.6%	0%	<b>97.5%</b>	100%	99.0%	100%	0%	<b>99.5%</b>	100%	99.5%	97.4%	0%	<b>99.4%</b>	100%	99.3%	93.8%	0%	<b>99.2%</b>	99.2%
<b>Articulated Trucks</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>% Articulated Trucks</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0%
<b>Buses and Single-Unit Trucks</b>	1	2	1	0	4	0	1	0	0	1	0	5	2	0	7	0	5	1	0	6	18
<b>% Buses and Single-Unit Trucks</b>	5.9%	2.0%	2.4%	0%	<b>2.5%</b>	0%	1.0%	0%	0%	<b>0.5%</b>	0%	0.5%	2.6%	0%	<b>0.6%</b>	0%	0.7%	6.3%	0%	<b>0.8%</b>	0.8%

\*L: Left, R: Right, T: Thru, U: U-Turn

TMC - 59th & State Line Rd - TMC

Tue Mar 21, 2023

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047709, Location: 39.021072, -94.607669



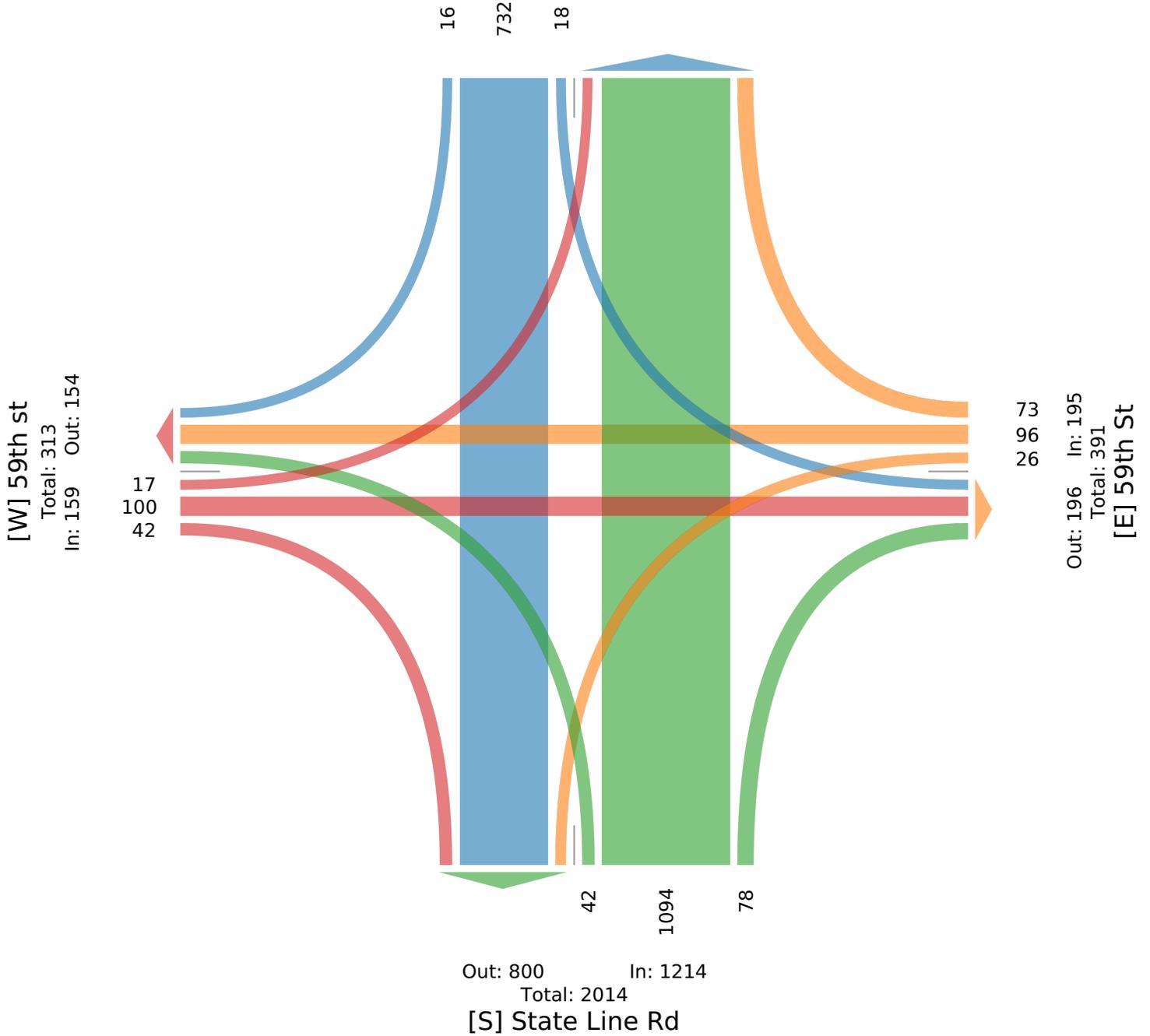
Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] State Line Rd

Total: 1950

In: 766

Out: 1184



TMC - 59th & State Line Rd - TMC

Tue Mar 21, 2023

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047709, Location: 39.021072, -94.607669



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	59th st Eastbound					59th St Westbound					State Line Rd Northbound					State Line Rd Southbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2023-03-21 7:30AM	1	6	1	0	<b>8</b>	1	2	4	0	<b>7</b>	2	87	7	0	<b>96</b>	1	33	1	0	<b>35</b>	<b>146</b>
7:45AM	0	13	5	0	<b>18</b>	2	9	3	0	<b>14</b>	3	107	14	0	<b>124</b>	1	32	0	0	<b>33</b>	<b>189</b>
8:00AM	1	8	4	0	<b>13</b>	1	10	10	0	<b>21</b>	3	80	8	0	<b>91</b>	1	36	1	0	<b>38</b>	<b>163</b>
8:15AM	1	5	2	0	<b>8</b>	1	6	2	0	<b>9</b>	3	84	6	0	<b>93</b>	2	31	1	0	<b>34</b>	<b>144</b>
<b>Total</b>	<b>3</b>	<b>32</b>	<b>12</b>	<b>0</b>	<b>47</b>	<b>5</b>	<b>27</b>	<b>19</b>	<b>0</b>	<b>51</b>	<b>11</b>	<b>358</b>	<b>35</b>	<b>0</b>	<b>404</b>	<b>5</b>	<b>132</b>	<b>3</b>	<b>0</b>	<b>140</b>	<b>642</b>
<b>% Approach</b>	6.4%	68.1%	25.5%	0%	-	9.8%	52.9%	37.3%	0%	-	2.7%	88.6%	8.7%	0%	-	3.6%	94.3%	2.1%	0%	-	-
<b>% Total</b>	<b>0.5%</b>	<b>5.0%</b>	<b>1.9%</b>	<b>0%</b>	<b>7.3%</b>	<b>0.8%</b>	<b>4.2%</b>	<b>3.0%</b>	<b>0%</b>	<b>7.9%</b>	<b>1.7%</b>	<b>55.8%</b>	<b>5.5%</b>	<b>0%</b>	<b>62.9%</b>	<b>0.8%</b>	<b>20.6%</b>	<b>0.5%</b>	<b>0%</b>	<b>21.8%</b>	-
<b>PHF</b>	<b>0.750</b>	<b>0.615</b>	<b>0.600</b>	<b>-</b>	<b>0.653</b>	<b>0.625</b>	<b>0.675</b>	<b>0.475</b>	<b>-</b>	<b>0.607</b>	<b>0.917</b>	<b>0.836</b>	<b>0.625</b>	<b>-</b>	<b>0.815</b>	<b>0.625</b>	<b>0.917</b>	<b>0.750</b>	<b>-</b>	<b>0.921</b>	0.849
<b>Lights</b>	<b>3</b>	<b>31</b>	<b>12</b>	<b>0</b>	<b>46</b>	<b>5</b>	<b>27</b>	<b>19</b>	<b>0</b>	<b>51</b>	<b>11</b>	<b>356</b>	<b>35</b>	<b>0</b>	<b>402</b>	<b>5</b>	<b>131</b>	<b>3</b>	<b>0</b>	<b>139</b>	638
<b>% Lights</b>	<b>100%</b>	<b>96.9%</b>	<b>100%</b>	<b>0%</b>	<b>97.9%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>0%</b>	<b>100%</b>	<b>100%</b>	<b>99.4%</b>	<b>100%</b>	<b>0%</b>	<b>99.5%</b>	<b>100%</b>	<b>99.2%</b>	<b>100%</b>	<b>0%</b>	<b>99.3%</b>	99.4%
<b>Articulated Trucks</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	0
<b>% Articulated Trucks</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	0%
<b>Buses and Single-Unit Trucks</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	4
<b>% Buses and Single-Unit Trucks</b>	<b>0%</b>	<b>3.1%</b>	<b>0%</b>	<b>0%</b>	<b>2.1%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0.6%</b>	<b>0%</b>	<b>0%</b>	<b>0.5%</b>	<b>0%</b>	<b>0.8%</b>	<b>0%</b>	<b>0%</b>	<b>0.7%</b>	0.6%

\* L: Left, R: Right, T: Thru, U: U-Turn

TMC - 59th & State Line Rd - TMC

Tue Mar 21, 2023

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047709, Location: 39.021072, -94.607669



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] State Line Rd

Total: 520

In: 140

Out: 380

3  
132  
5

[W] 59th st

Total: 88

In: 47 Out: 41

3  
32  
12

19  
27  
5

Out: 72 In: 51

Total: 123

[E] 59th St

Out: 149

In: 404

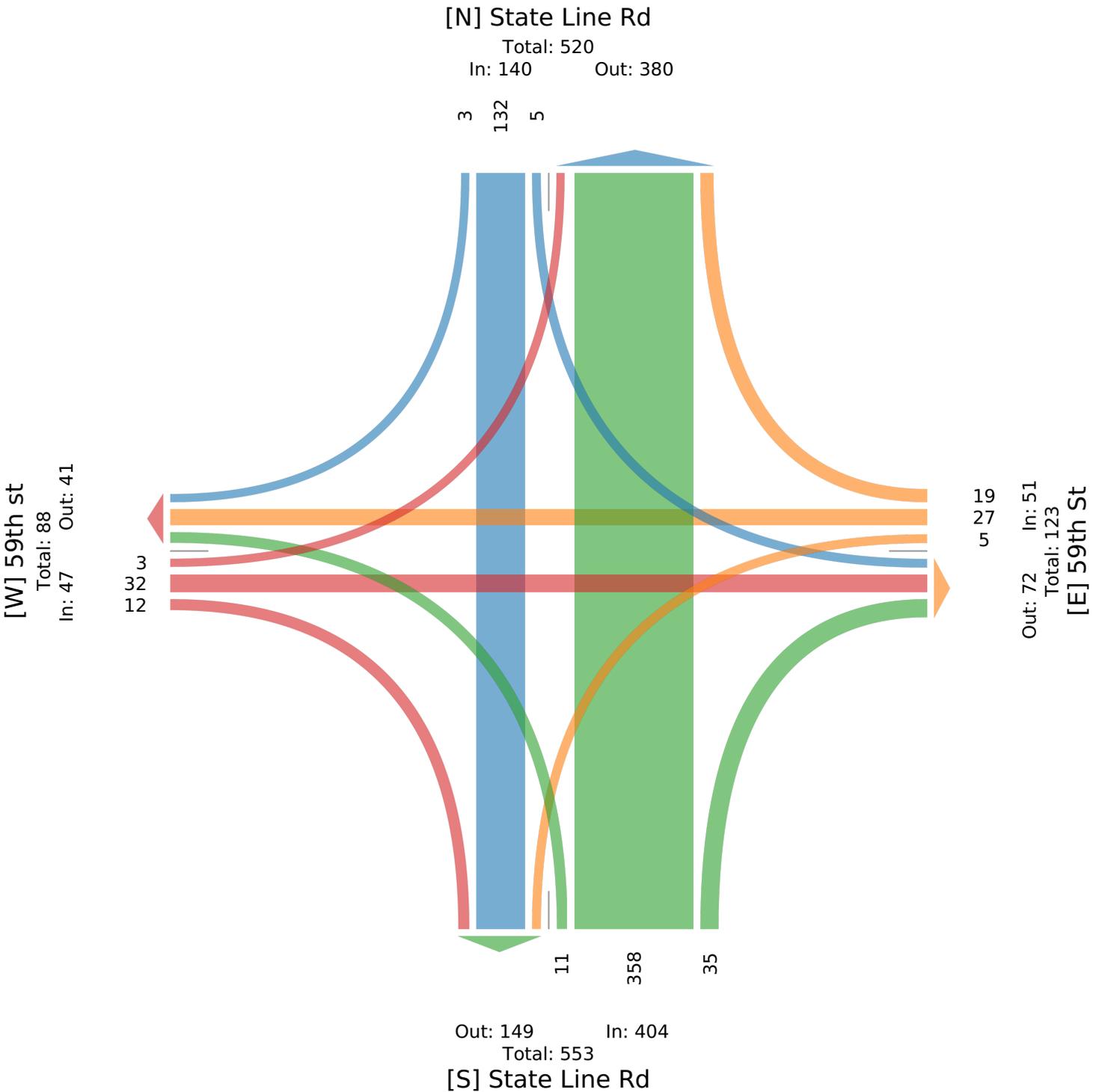
Total: 553

[S] State Line Rd

11

358

35



TMC - 59th & State Line Rd - TMC

Tue Mar 21, 2023

PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047709, Location: 39.021072, -94.607669



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	59th st Eastbound					59th St Westbound					State Line Rd Northbound					State Line Rd Southbound					Int	
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App		
2023-03-21 4:30PM	0	8	5	0	13	2	7	3	0	12	3	61	3	0	67	0	66	1	0	67	159	
4:45PM	3	4	2	0	9	3	13	5	0	21	1	80	8	0	89	2	82	3	0	87	206	
5:00PM	1	5	4	0	10	2	5	5	0	12	3	59	5	0	67	2	69	0	0	71	160	
5:15PM	0	8	3	0	11	0	10	3	0	13	1	60	5	0	66	3	74	2	0	79	169	
<b>Total</b>	4	25	14	0	43	7	35	16	0	58	8	260	21	0	289	7	291	6	0	304	694	
<b>% Approach</b>	9.3%	58.1%	32.6%	0%	-	12.1%	60.3%	27.6%	0%	-	2.8%	90.0%	7.3%	0%	-	2.3%	95.7%	2.0%	0%	-	-	
<b>% Total</b>	0.6%	3.6%	2.0%	0%	6.2%	1.0%	5.0%	2.3%	0%	8.4%	1.2%	37.5%	3.0%	0%	41.6%	1.0%	41.9%	0.9%	0%	43.8%	-	
<b>PHF</b>	0.333	0.781	0.700	-	0.827	0.583	0.673	0.800	-	0.690	0.667	0.813	0.656	-	0.812	0.583	0.887	0.500	-	0.874	0.842	
<b>Lights</b>	3	24	14	0	41	7	35	16	0	58	8	260	21	0	289	7	289	5	0	301	689	
<b>% Lights</b>	75.0%	96.0%	100%	0%	95.3%	100%	100%	100%	0%	100%	100%	100%	0%	100%	100%	100%	99.3%	83.3%	0%	99.0%	99.3%	
<b>Articulated Trucks</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>% Articulated Trucks</b>	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Buses and Single-Unit Trucks</b>	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3	5	
<b>% Buses and Single-Unit Trucks</b>	25.0%	4.0%	0%	0%	4.7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.7%	16.7%	0%	1.0%	0.7%	

\* L: Left, R: Right, T: Thru, U: U-Turn

TMC - 59th & State Line Rd - TMC

Tue Mar 21, 2023

PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047709, Location: 39.021072, -94.607669



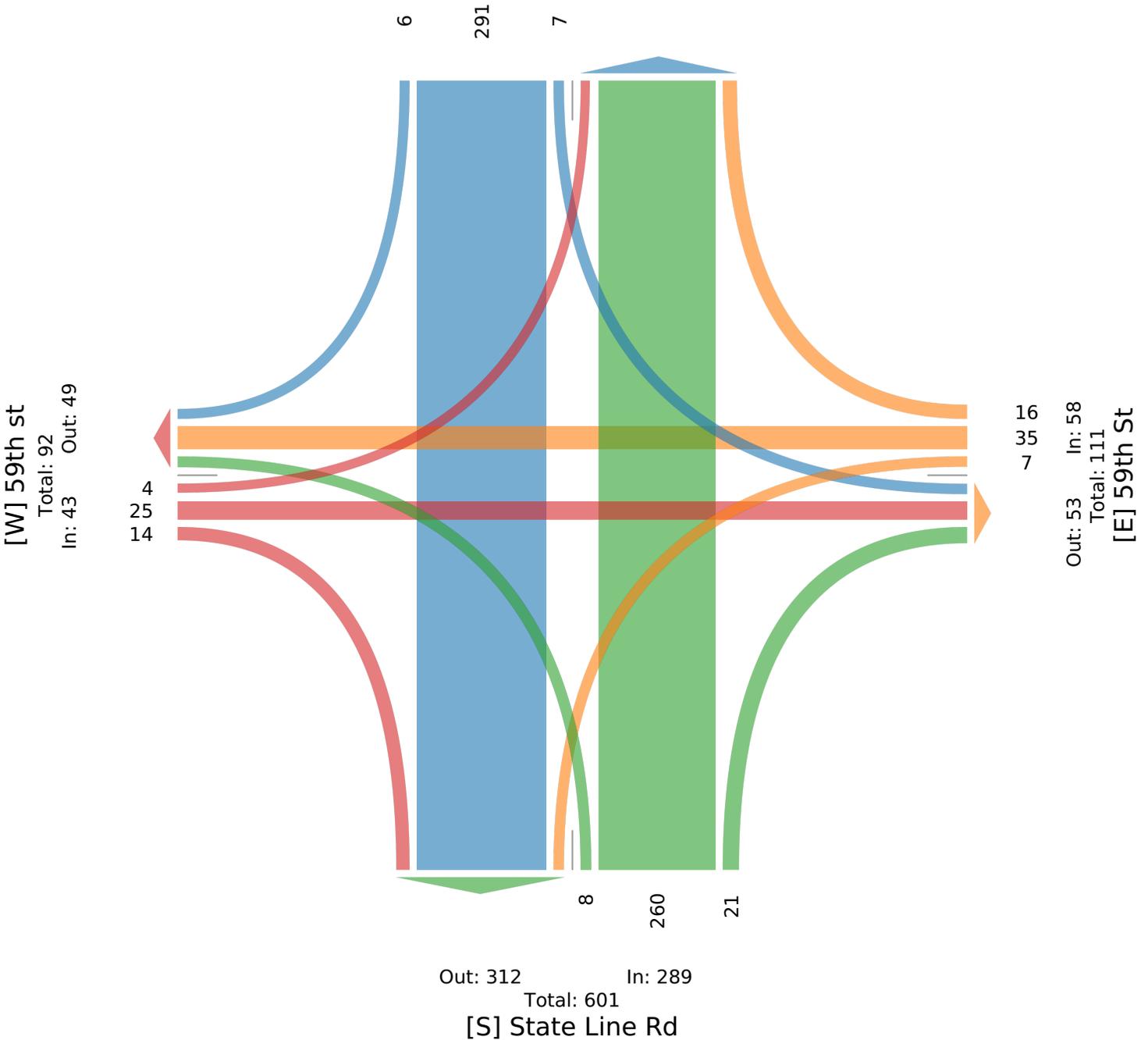
Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] State Line Rd

Total: 584

In: 304

Out: 280



TMC - 55th & State Line Rd - TMC

Tue Mar 21, 2023

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047710, Location: 39.028351, -94.60757



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	55th St Eastbound					55th St Westbound					State Line Rd Northbound					State Line Rd Southbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2023-03-21 7:00AM	1	1	2	0	4	0	9	23	0	32	2	71	4	0	77	0	15	0	0	15	128
7:15AM	0	4	0	0	4	2	8	28	0	38	5	89	5	0	99	3	19	0	0	22	163
7:30AM	1	5	0	0	6	0	13	23	0	36	2	110	6	0	118	1	34	0	0	35	195
7:45AM	0	13	2	0	15	3	2	49	0	54	0	129	19	0	148	6	31	0	0	37	254
Hourly Total	2	23	4	0	29	5	32	123	0	160	9	399	34	0	442	10	99	0	0	109	740
8:00AM	1	10	2	0	13	6	5	44	0	55	1	122	7	0	130	6	25	0	0	31	229
8:15AM	1	3	0	0	4	5	2	26	0	33	0	111	10	0	121	2	35	0	0	37	195
8:30AM	0	3	2	0	5	1	2	35	0	38	1	85	5	0	91	5	28	0	0	33	167
8:45AM	1	13	10	0	24	2	3	33	0	38	2	90	3	0	95	6	25	0	0	31	188
Hourly Total	3	29	14	0	46	14	12	138	0	164	4	408	25	0	437	19	113	0	0	132	779
4:00PM	0	2	4	0	6	7	11	38	0	56	1	65	8	0	74	7	42	0	0	49	185
4:15PM	2	0	0	0	2	12	6	29	0	47	0	62	10	0	72	6	52	0	0	58	179
4:30PM	0	2	1	0	3	5	6	30	0	41	2	78	3	0	83	6	63	0	0	69	196
4:45PM	0	5	0	0	5	6	5	43	0	54	2	96	7	0	105	10	74	0	0	84	248
Hourly Total	2	9	5	0	16	30	28	140	0	198	5	301	28	0	334	29	231	0	0	260	808
5:00PM	1	4	6	0	11	5	5	41	0	51	1	75	6	0	82	13	60	0	0	73	217
5:15PM	0	3	1	0	4	6	8	37	0	51	0	66	13	0	79	6	77	0	0	83	217
5:30PM	0	4	1	0	5	5	3	36	0	44	2	80	6	0	88	6	53	1	0	60	197
5:45PM	0	2	1	0	3	7	9	37	0	53	1	78	5	0	84	1	50	1	0	52	192
Hourly Total	1	13	9	0	23	23	25	151	0	199	4	299	30	0	333	26	240	2	0	268	823
<b>Total</b>	<b>8</b>	<b>74</b>	<b>32</b>	<b>0</b>	<b>114</b>	<b>72</b>	<b>97</b>	<b>552</b>	<b>0</b>	<b>721</b>	<b>22</b>	<b>1407</b>	<b>117</b>	<b>0</b>	<b>1546</b>	<b>84</b>	<b>683</b>	<b>2</b>	<b>0</b>	<b>769</b>	<b>3150</b>
<b>% Approach</b>	7.0%	64.9%	28.1%	0%	-	10.0%	13.5%	76.6%	0%	-	1.4%	91.0%	7.6%	0%	-	10.9%	88.8%	0.3%	0%	-	-
<b>% Total</b>	0.3%	2.3%	1.0%	0%	3.6%	2.3%	3.1%	17.5%	0%	22.9%	0.7%	44.7%	3.7%	0%	49.1%	2.7%	21.7%	0.1%	0%	24.4%	-
<b>Lights</b>	8	72	30	0	110	72	94	549	0	715	22	1400	116	0	1538	84	680	2	0	766	3129
<b>% Lights</b>	100%	97.3%	93.8%	0%	96.5%	100%	96.9%	99.5%	0%	99.2%	100%	99.5%	99.1%	0%	99.5%	100%	99.6%	100%	0%	99.6%	99.3%
<b>Articulated Trucks</b>	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
<b>% Articulated Trucks</b>	0%	0%	0%	0%	0%	0%	0%	0.2%	0%	0.1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Buses and Single-Unit Trucks</b>	0	2	2	0	4	0	3	2	0	5	0	7	1	0	8	0	3	0	0	3	20
<b>% Buses and Single-Unit Trucks</b>	0%	2.7%	6.3%	0%	3.5%	0%	3.1%	0.4%	0%	0.7%	0%	0.5%	0.9%	0%	0.5%	0%	0.4%	0%	0%	0.4%	0.6%

\*L: Left, R: Right, T: Thru, U: U-Turn

TMC - 55th & State Line Rd - TMC

Tue Mar 21, 2023

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047710, Location: 39.028351, -94.60757



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] State Line Rd

Total: 2736

In: 769

Out: 1967

2 683 84

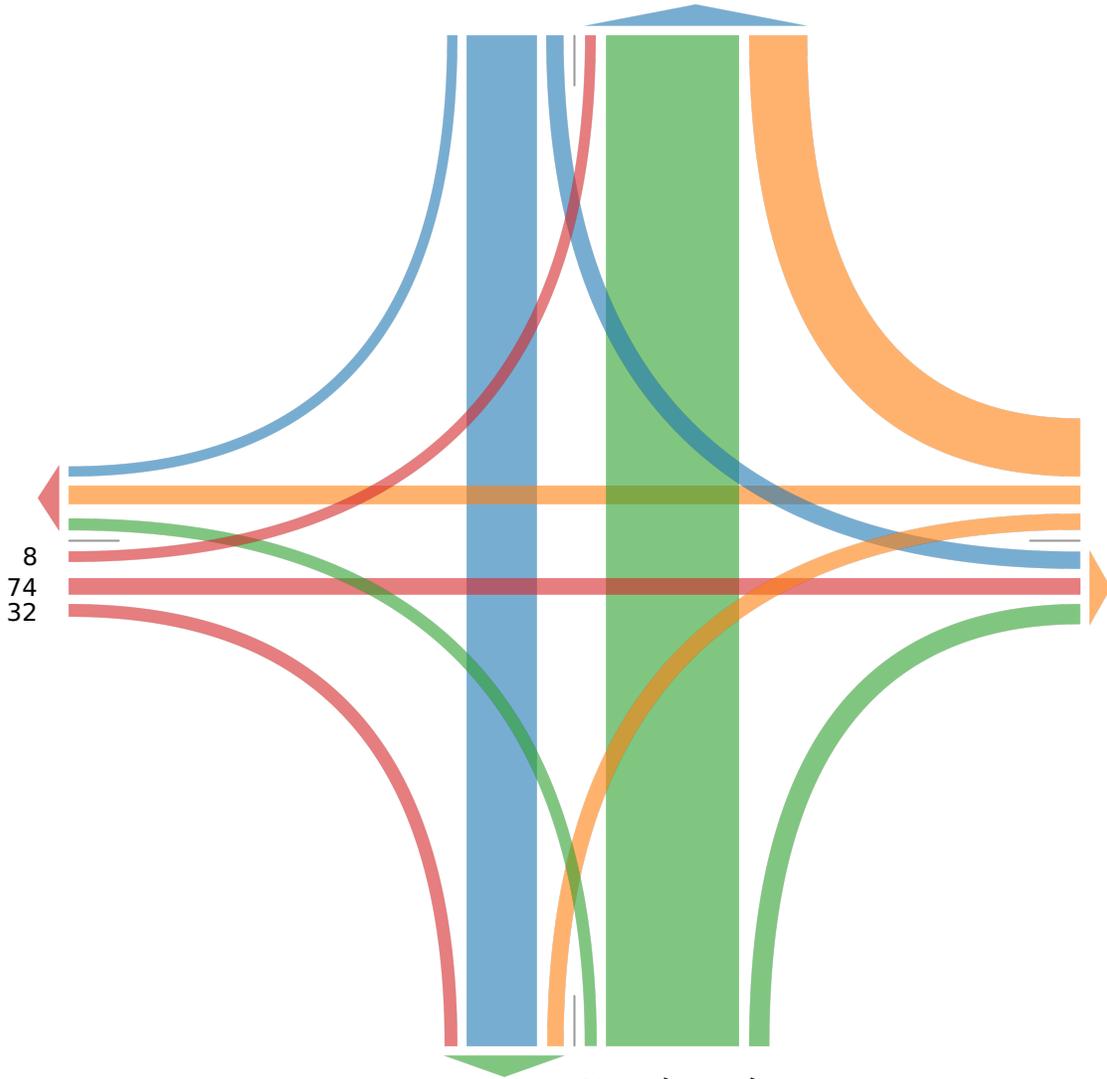
[W] 55th St  
Total: 235  
In: 114 Out: 121

8  
74  
32

552  
97  
72  
Out: 275 In: 721  
Total: 996  
[E] 55th St

Out: 787 In: 1546  
Total: 2333  
[S] State Line Rd

22 1407 117



TMC - 55th & State Line Rd - TMC

Tue Mar 21, 2023

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047710, Location: 39.028351, -94.60757



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	55th St Eastbound					55th St Westbound					State Line Rd Northbound					State Line Rd Southbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2023-03-21 7:30AM	1	5	0	0	<b>6</b>	0	13	23	0	<b>36</b>	2	110	6	0	<b>118</b>	1	34	0	0	<b>35</b>	<b>195</b>
7:45AM	0	13	2	0	<b>15</b>	3	2	49	0	<b>54</b>	0	129	19	0	<b>148</b>	6	31	0	0	<b>37</b>	<b>254</b>
8:00AM	1	10	2	0	<b>13</b>	6	5	44	0	<b>55</b>	1	122	7	0	<b>130</b>	6	25	0	0	<b>31</b>	<b>229</b>
8:15AM	1	3	0	0	<b>4</b>	5	2	26	0	<b>33</b>	0	111	10	0	<b>121</b>	2	35	0	0	<b>37</b>	<b>195</b>
<b>Total</b>	<b>3</b>	<b>31</b>	<b>4</b>	<b>0</b>	<b>38</b>	<b>14</b>	<b>22</b>	<b>142</b>	<b>0</b>	<b>178</b>	<b>3</b>	<b>472</b>	<b>42</b>	<b>0</b>	<b>517</b>	<b>15</b>	<b>125</b>	<b>0</b>	<b>0</b>	<b>140</b>	<b>873</b>
<b>% Approach</b>	7.9%	81.6%	10.5%	0%	-	7.9%	12.4%	79.8%	0%	-	0.6%	91.3%	8.1%	0%	-	10.7%	89.3%	0%	0%	-	-
<b>% Total</b>	0.3%	3.6%	0.5%	0%	<b>4.4%</b>	1.6%	2.5%	16.3%	0%	<b>20.4%</b>	0.3%	54.1%	4.8%	0%	<b>59.2%</b>	1.7%	14.3%	0%	0%	<b>16.0%</b>	-
<b>PHF</b>	0.750	0.596	0.500	-	<b>0.633</b>	0.583	0.423	0.724	-	<b>0.809</b>	0.375	0.915	0.553	-	<b>0.873</b>	0.625	0.893	-	-	<b>0.946</b>	0.859
<b>Lights</b>	3	30	4	0	<b>37</b>	14	20	141	0	<b>175</b>	3	471	42	0	<b>516</b>	15	124	0	0	<b>139</b>	867
<b>% Lights</b>	100%	96.8%	100%	0%	<b>97.4%</b>	100%	90.9%	99.3%	0%	<b>98.3%</b>	100%	99.8%	100%	0%	<b>99.8%</b>	100%	99.2%	0%	0%	<b>99.3%</b>	99.3%
<b>Articulated Trucks</b>	0	0	0	0	<b>0</b>	0	0	1	0	<b>1</b>	0	0	0	0	<b>0</b>	0	0	0	0	<b>0</b>	1
<b>% Articulated Trucks</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0.7%	0%	<b>0.6%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0.1%
<b>Buses and Single-Unit Trucks</b>	0	1	0	0	<b>1</b>	0	2	0	0	<b>2</b>	0	1	0	0	<b>1</b>	0	1	0	0	<b>1</b>	5
<b>% Buses and Single-Unit Trucks</b>	0%	3.2%	0%	0%	<b>2.6%</b>	0%	9.1%	0%	0%	<b>1.1%</b>	0%	0.2%	0%	0%	<b>0.2%</b>	0%	0.8%	0%	0%	<b>0.7%</b>	0.6%

\* L: Left, R: Right, T: Thru, U: U-Turn

TMC - 55th & State Line Rd - TMC

Tue Mar 21, 2023

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047710, Location: 39.028351, -94.60757



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] State Line Rd

Total: 757

In: 140 Out: 617

125  
15

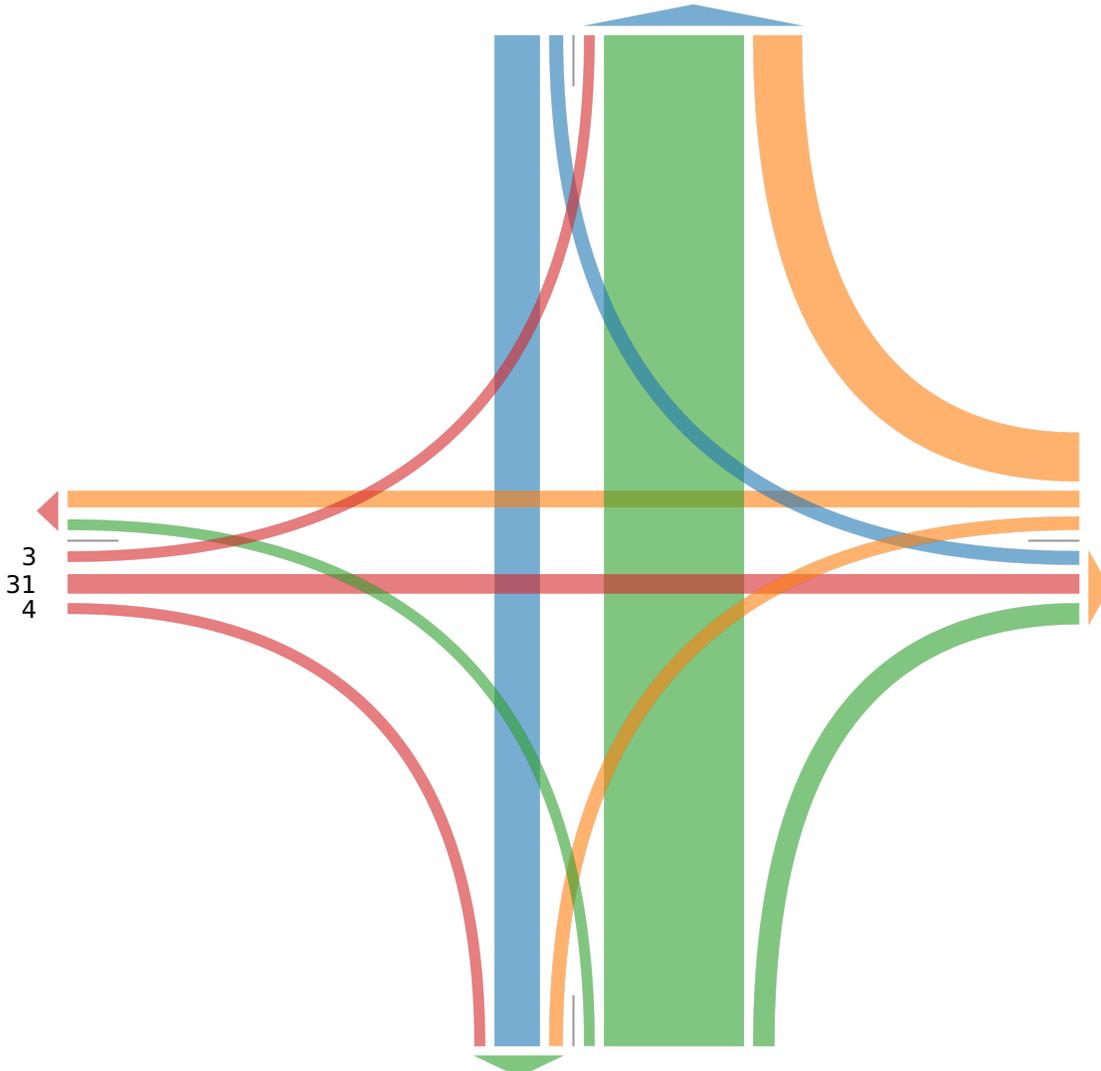
[W] 55th St  
Total: 63  
In: 38 Out: 25

3  
31  
4

142  
22  
14  
Out: 88 In: 178  
Total: 266  
[E] 55th St

Out: 143 In: 517  
Total: 660  
[S] State Line Rd

3  
472  
42



TMC - 55th & State Line Rd - TMC

Tue Mar 21, 2023

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

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047710, Location: 39.028351, -94.60757



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	55th St Eastbound					55th St Westbound					State Line Rd Northbound					State Line Rd Southbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2023-03-21 4:45PM	0	5	0	0	5	6	5	43	0	54	2	96	7	0	105	10	74	0	0	84	248
5:00PM	1	4	6	0	11	5	5	41	0	51	1	75	6	0	82	13	60	0	0	73	217
5:15PM	0	3	1	0	4	6	8	37	0	51	0	66	13	0	79	6	77	0	0	83	217
5:30PM	0	4	1	0	5	5	3	36	0	44	2	80	6	0	88	6	53	1	0	60	197
<b>Total</b>	1	16	8	0	25	22	21	157	0	200	5	317	32	0	354	35	264	1	0	300	879
<b>% Approach</b>	4.0%	64.0%	32.0%	0%	-	11.0%	10.5%	78.5%	0%	-	1.4%	89.5%	9.0%	0%	-	11.7%	88.0%	0.3%	0%	-	-
<b>% Total</b>	0.1%	1.8%	0.9%	0%	2.8%	2.5%	2.4%	17.9%	0%	22.8%	0.6%	36.1%	3.6%	0%	40.3%	4.0%	30.0%	0.1%	0%	34.1%	-
<b>PHF</b>	0.250	0.800	0.333	-	0.568	0.917	0.656	0.913	-	0.926	0.625	0.826	0.615	-	0.843	0.673	0.857	0.250	-	0.893	0.886
<b>Lights</b>	1	16	8	0	25	22	21	155	0	198	5	316	32	0	353	35	263	1	0	299	875
<b>% Lights</b>	100%	100%	100%	0%	100%	100%	100%	98.7%	0%	99.0%	100%	99.7%	100%	0%	99.7%	100%	99.6%	100%	0%	99.7%	99.5%
<b>Articulated Trucks</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>% Articulated Trucks</b>	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Buses and Single-Unit Trucks</b>	0	0	0	0	0	0	0	2	0	2	0	1	0	0	1	0	1	0	0	1	4
<b>% Buses and Single-Unit Trucks</b>	0%	0%	0%	0%	0%	0%	0%	1.3%	0%	1.0%	0%	0.3%	0%	0%	0.3%	0%	0.4%	0%	0%	0.3%	0.5%

\* L: Left, R: Right, T: Thru, U: U-Turn

TMC - 55th & State Line Rd - TMC

Tue Mar 21, 2023

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

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047710, Location: 39.028351, -94.60757



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

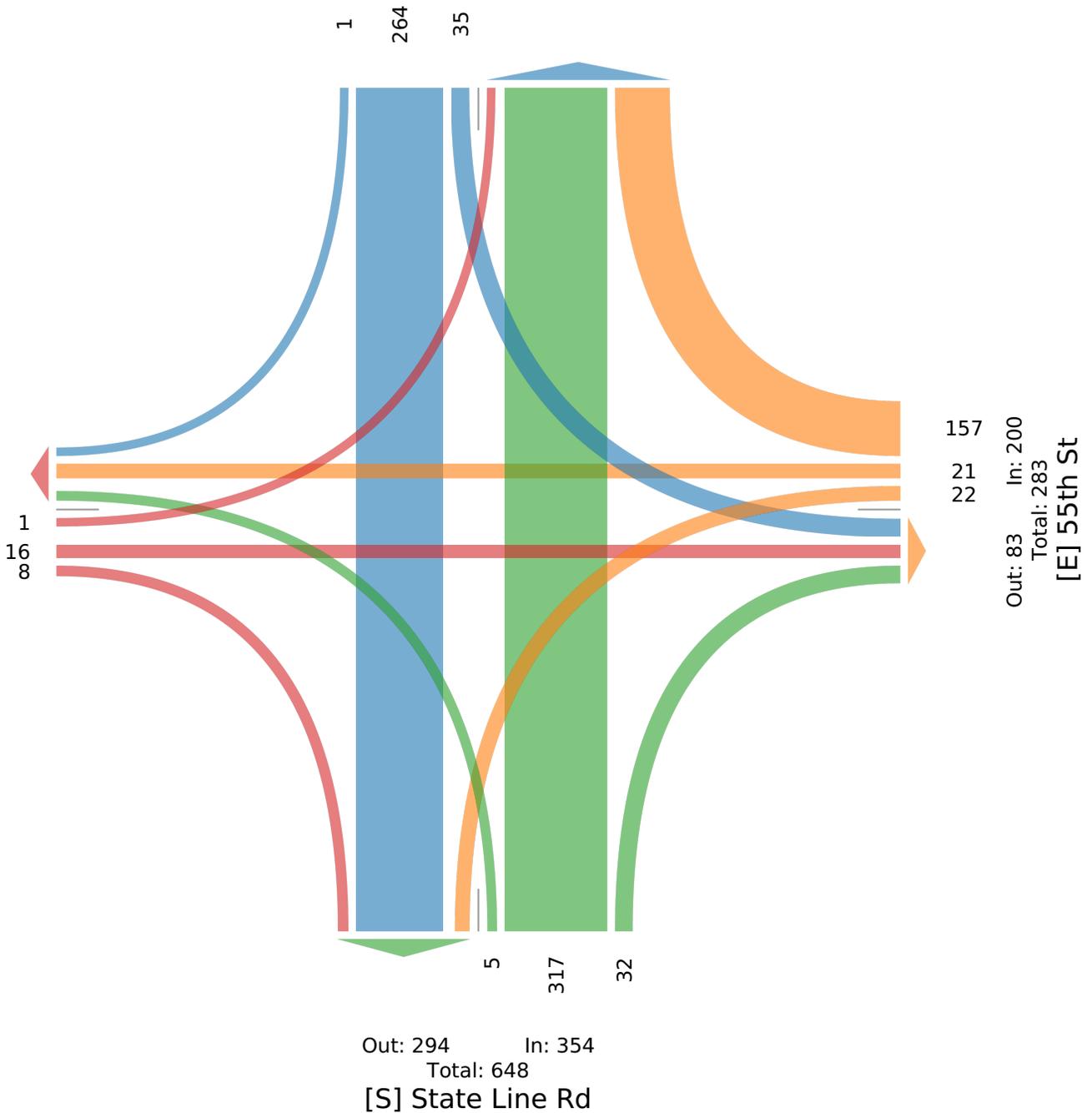
[N] State Line Rd

Total: 775

In: 300

Out: 475

[W] 55th St  
Total: 52  
In: 25 Out: 27



TMC - State Line Rd & Shawnee Mission Pkwy - TMC

Tue Mar 21, 2023

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047711, Location: 39.034173, -94.607459



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Shawnee Mission Pkwy Eastbound					Shawnee Mission Pkwy Westbound					State Line Rd Northbound					State Line Rd Southbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2023-03-21 7:00AM	5	162	9	0	176	0	80	4	0	84	51	32	5	0	88	11	10	2	0	23	371
7:15AM	11	206	20	0	237	1	107	3	0	111	52	60	7	0	119	6	10	8	0	24	491
7:30AM	12	272	26	0	310	1	122	8	0	131	73	54	5	0	132	19	22	7	0	48	621
7:45AM	20	346	17	0	383	0	137	4	0	141	92	76	7	0	175	10	24	10	0	44	743
Hourly Total	48	986	72	0	1106	2	446	19	0	467	268	222	24	0	514	46	66	27	0	139	2226
8:00AM	9	344	19	0	372	0	145	7	0	152	106	58	8	0	172	7	18	7	0	32	728
8:15AM	17	325	19	0	361	0	135	3	0	138	65	63	11	0	139	7	17	6	0	30	668
8:30AM	17	274	22	0	313	1	123	4	0	128	53	61	6	0	120	3	12	11	0	26	587
8:45AM	20	312	19	0	351	1	109	2	0	112	65	68	5	0	138	3	15	3	0	21	622
Hourly Total	63	1255	79	0	1397	2	512	16	0	530	289	250	30	0	569	20	62	27	0	109	2605
4:00PM	6	213	29	0	248	0	217	2	0	219	65	33	5	0	103	11	24	13	0	48	618
4:15PM	11	221	29	0	261	0	231	1	0	232	49	46	5	0	100	17	39	8	0	64	657
4:30PM	15	218	41	0	274	0	274	4	0	278	57	50	5	0	112	17	27	13	0	57	721
4:45PM	13	247	38	0	298	1	295	4	0	300	73	59	8	0	140	16	53	15	0	84	822
Hourly Total	45	899	137	0	1081	1	1017	11	0	1029	244	188	23	0	455	61	143	49	0	253	2818
5:00PM	13	227	32	0	272	0	305	2	0	307	63	49	7	0	119	20	45	11	0	76	774
5:15PM	17	255	34	0	306	0	311	6	0	317	57	51	2	0	110	16	47	14	0	77	810
5:30PM	14	231	24	0	269	0	264	1	0	265	54	53	9	0	116	14	38	15	0	67	717
5:45PM	24	208	27	0	259	0	213	2	0	215	70	40	5	0	115	11	29	11	0	51	640
Hourly Total	68	921	117	0	1106	0	1093	11	0	1104	244	193	23	0	460	61	159	51	0	271	2941
<b>Total</b>	224	4061	405	0	4690	5	3068	57	0	3130	1045	853	100	0	1998	188	430	154	0	772	10590
<b>% Approach</b>	4.8%	86.6%	8.6%	0%	-	0.2%	98.0%	1.8%	0%	-	52.3%	42.7%	5.0%	0%	-	24.4%	55.7%	19.9%	0%	-	-
<b>% Total</b>	2.1%	38.3%	3.8%	0%	44.3%	0%	29.0%	0.5%	0%	29.6%	9.9%	8.1%	0.9%	0%	18.9%	1.8%	4.1%	1.5%	0%	7.3%	-
<b>Lights</b>	222	4036	403	0	4661	5	3048	55	0	3108	1040	848	98	0	1986	188	429	150	0	767	10522
<b>% Lights</b>	99.1%	99.4%	99.5%	0%	99.4%	100%	99.3%	96.5%	0%	99.3%	99.5%	99.4%	98.0%	0%	99.4%	100%	99.8%	97.4%	0%	99.4%	99.4%
<b>Articulated Trucks</b>	0	2	0	0	2	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	4
<b>% Articulated Trucks</b>	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.1%	0%	1.0%	0%	0.1%	0%	0%	0%	0%	0%	0%
<b>Buses and Single-Unit Trucks</b>	2	23	2	0	27	0	20	2	0	22	4	5	1	0	10	0	1	4	0	5	64
<b>% Buses and Single-Unit Trucks</b>	0.9%	0.6%	0.5%	0%	0.6%	0%	0.7%	3.5%	0%	0.7%	0.4%	0.6%	1.0%	0%	0.5%	0%	0.2%	2.6%	0%	0.6%	0.6%

\*L: Left, R: Right, T: Thru, U: U-Turn

TMC - State Line Rd & Shawnee Mission Pkwy - TMC  
 Tue Mar 21, 2023  
 Full Length (7 AM-9 AM, 4 PM-6 PM)  
 All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)  
 All Movements  
 ID: 1047711, Location: 39.034173, -94.607459

[N] State Line Rd

Total: 1906  
 In: 772 Out: 1134

154  
 430  
 188

[W] Shawnee Mission Pkwy

Total: 8957  
 In: 4690 Out: 4267

224  
 4061  
 405

57  
 3068  
 5  
 Out: 4349 In: 3130  
 Total: 7479  
 [E] Shawnee Mission Pkwy

Out: 840 In: 1998  
 Total: 2838  
 [S] State Line Rd

1045  
 853  
 100



TMC - State Line Rd & Shawnee Mission Pkwy - TMC  
 Tue Mar 21, 2023  
 AM Peak (7:30 AM - 8:30 AM)  
 All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)  
 All Movements  
 ID: 1047711, Location: 39.034173, -94.607459



Leg Direction	Shawnee Mission Pkwy Eastbound					Shawnee Mission Pkwy Westbound					State Line Rd Northbound					State Line Rd Southbound					Int	
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App		
2023-03-21 7:30AM	12	272	26	0	310	1	122	8	0	131	73	54	5	0	132	19	22	7	0	48	621	
7:45AM	20	346	17	0	383	0	137	4	0	141	92	76	7	0	175	10	24	10	0	44	743	
8:00AM	9	344	19	0	372	0	145	7	0	152	106	58	8	0	172	7	18	7	0	32	728	
8:15AM	17	325	19	0	361	0	135	3	0	138	65	63	11	0	139	7	17	6	0	30	668	
<b>Total</b>	58	1287	81	0	1426	1	539	22	0	562	336	251	31	0	618	43	81	30	0	154	2760	
<b>% Approach</b>	4.1%	90.3%	5.7%	0%	-	0.2%	95.9%	3.9%	0%	-	54.4%	40.6%	5.0%	0%	-	27.9%	52.6%	19.5%	0%	-	-	
<b>% Total</b>	2.1%	46.6%	2.9%	0%	51.7%	0%	19.5%	0.8%	0%	20.4%	12.2%	9.1%	1.1%	0%	22.4%	1.6%	2.9%	1.1%	0%	5.6%	-	
<b>PHF</b>	0.725	0.930	0.779	-	0.931	0.250	0.929	0.688	-	0.924	0.792	0.826	0.705	-	0.883	0.566	0.844	0.750	-	0.802	0.929	
<b>Lights</b>	57	1280	79	0	1416	1	532	21	0	554	335	250	31	0	616	43	81	29	0	153	2739	
<b>% Lights</b>	98.3%	99.5%	97.5%	0%	99.3%	100%	98.7%	95.5%	0%	98.6%	99.7%	99.6%	100%	0%	99.7%	100%	100%	96.7%	0%	99.4%	99.2%	
<b>Articulated Trucks</b>	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2
<b>% Articulated Trucks</b>	0%	0.1%	0%	0%	0.1%	0%	0%	0%	0%	0%	0.3%	0%	0%	0%	0.2%	0%	0%	0%	0%	0%	0%	0.1%
<b>Buses and Single-Unit Trucks</b>	1	6	2	0	9	0	7	1	0	8	0	1	0	0	1	0	0	1	0	1	19	
<b>% Buses and Single-Unit Trucks</b>	1.7%	0.5%	2.5%	0%	0.6%	0%	1.3%	4.5%	0%	1.4%	0%	0.4%	0%	0%	0.2%	0%	0%	3.3%	0%	0.6%	0.7%	

\* L: Left, R: Right, T: Thru, U: U-Turn

TMC - State Line Rd & Shawnee Mission Pkwy - TMC  
 Tue Mar 21, 2023  
 AM Peak (7:30 AM - 8:30 AM)  
 All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)  
 All Movements  
 ID: 1047711, Location: 39.034173, -94.607459

[N] State Line Rd

Total: 485  
 In: 154 Out: 331

30 81 43

[W] Shawnee Mission Pkwy

Total: 2331  
 In: 1426 Out: 905

58  
 1287  
 81

22  
 539  
 1

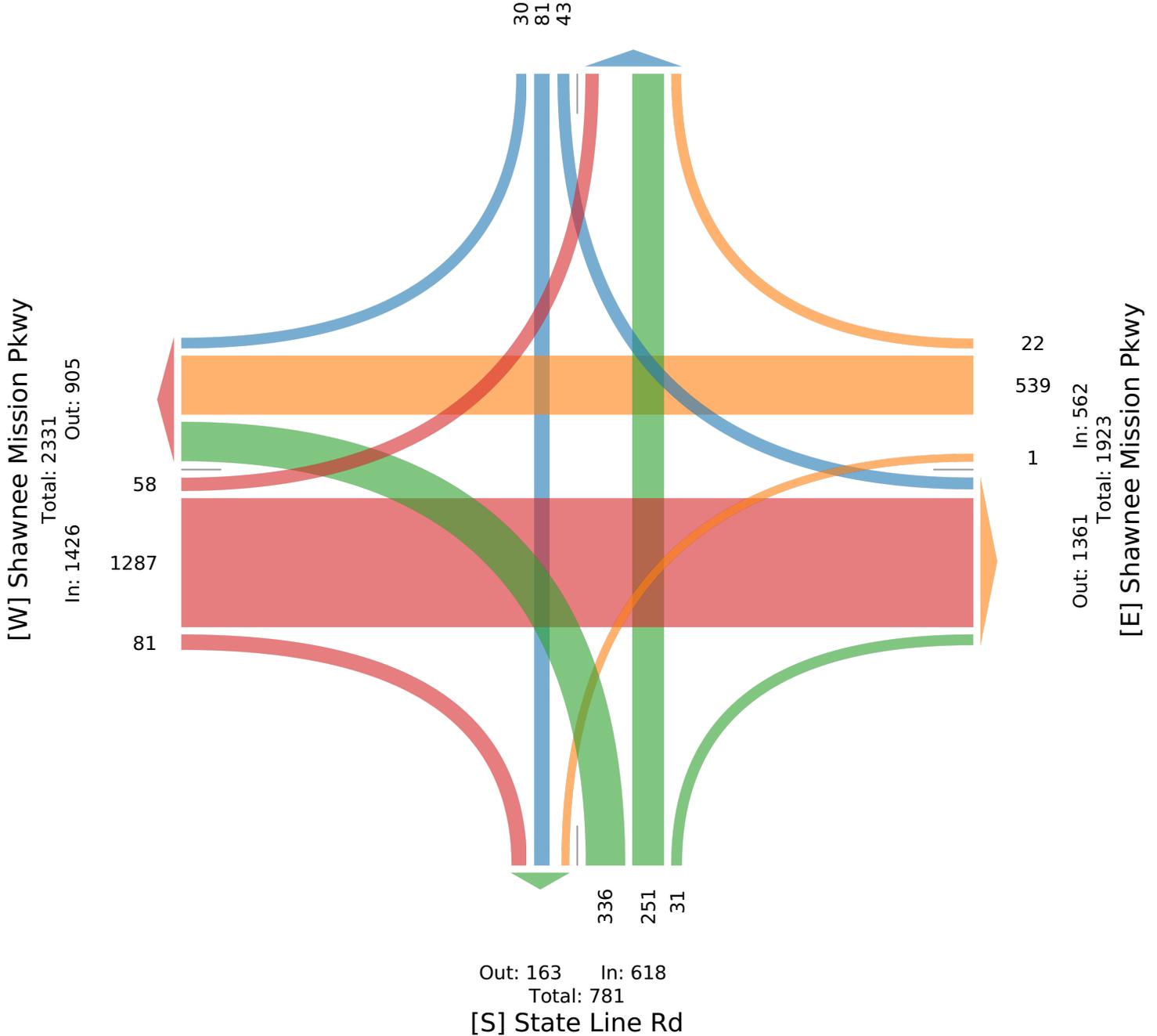
Out: 1361 In: 562  
 Total: 1923

[E] Shawnee Mission Pkwy

Out: 163 In: 618  
 Total: 781

[S] State Line Rd

336  
 251  
 31



TMC - State Line Rd & Shawnee Mission Pkwy - TMC  
 Tue Mar 21, 2023  
 PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour  
 All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)  
 All Movements  
 ID: 1047711, Location: 39.034173, -94.607459



Provided by: Gewalt Hamilton Associates Inc.  
 625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Shawnee Mission Pkwy Eastbound					Shawnee Mission Pkwy Westbound					State Line Rd Northbound					State Line Rd Southbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2023-03-21 4:30PM	15	218	41	0	<b>274</b>	0	274	4	0	<b>278</b>	57	50	5	0	<b>112</b>	17	27	13	0	<b>57</b>	<b>721</b>
4:45PM	13	247	38	0	<b>298</b>	1	295	4	0	<b>300</b>	73	59	8	0	<b>140</b>	16	53	15	0	<b>84</b>	<b>822</b>
5:00PM	13	227	32	0	<b>272</b>	0	305	2	0	<b>307</b>	63	49	7	0	<b>119</b>	20	45	11	0	<b>76</b>	<b>774</b>
5:15PM	17	255	34	0	<b>306</b>	0	311	6	0	<b>317</b>	57	51	2	0	<b>110</b>	16	47	14	0	<b>77</b>	<b>810</b>
<b>Total</b>	58	947	145	0	<b>1150</b>	1	1185	16	0	<b>1202</b>	250	209	22	0	<b>481</b>	69	172	53	0	<b>294</b>	<b>3127</b>
<b>% Approach</b>	5.0%	82.3%	12.6%	0%	-	0.1%	98.6%	1.3%	0%	-	52.0%	43.5%	4.6%	0%	-	23.5%	58.5%	18.0%	0%	-	-
<b>% Total</b>	1.9%	30.3%	4.6%	0%	<b>36.8%</b>	0%	37.9%	0.5%	0%	<b>38.4%</b>	8.0%	6.7%	0.7%	0%	<b>15.4%</b>	2.2%	5.5%	1.7%	0%	<b>9.4%</b>	-
<b>PHF</b>	0.853	0.928	0.884	-	<b>0.940</b>	0.250	0.953	0.667	-	<b>0.948</b>	0.856	0.886	0.688	-	<b>0.859</b>	0.863	0.811	0.883	-	<b>0.875</b>	0.951
<b>Lights</b>	58	945	145	0	<b>1148</b>	1	1180	16	0	<b>1197</b>	250	206	22	0	<b>478</b>	69	171	52	0	<b>292</b>	3115
<b>% Lights</b>	100%	99.8%	100%	0%	<b>99.8%</b>	100%	99.6%	100%	0%	<b>99.6%</b>	100%	98.6%	100%	0%	<b>99.4%</b>	100%	99.4%	98.1%	0%	<b>99.3%</b>	99.6%
<b>Articulated Trucks</b>	0	0	0	0	<b>0</b>	0	0	0	0	<b>0</b>	0	0	0	0	<b>0</b>	0	0	0	0	<b>0</b>	0
<b>% Articulated Trucks</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0%
<b>Buses and Single-Unit Trucks</b>	0	2	0	0	<b>2</b>	0	5	0	0	<b>5</b>	0	3	0	0	<b>3</b>	0	1	1	0	<b>2</b>	12
<b>% Buses and Single-Unit Trucks</b>	0%	0.2%	0%	0%	<b>0.2%</b>	0%	0.4%	0%	0%	<b>0.4%</b>	0%	1.4%	0%	0%	<b>0.6%</b>	0%	0.6%	1.9%	0%	<b>0.7%</b>	0.4%

\* L: Left, R: Right, T: Thru, U: U-Turn

TMC - State Line Rd & Shawnee Mission Pkwy - TMC  
 Tue Mar 21, 2023  
 PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour  
 All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)  
 All Movements  
 ID: 1047711, Location: 39.034173, -94.607459

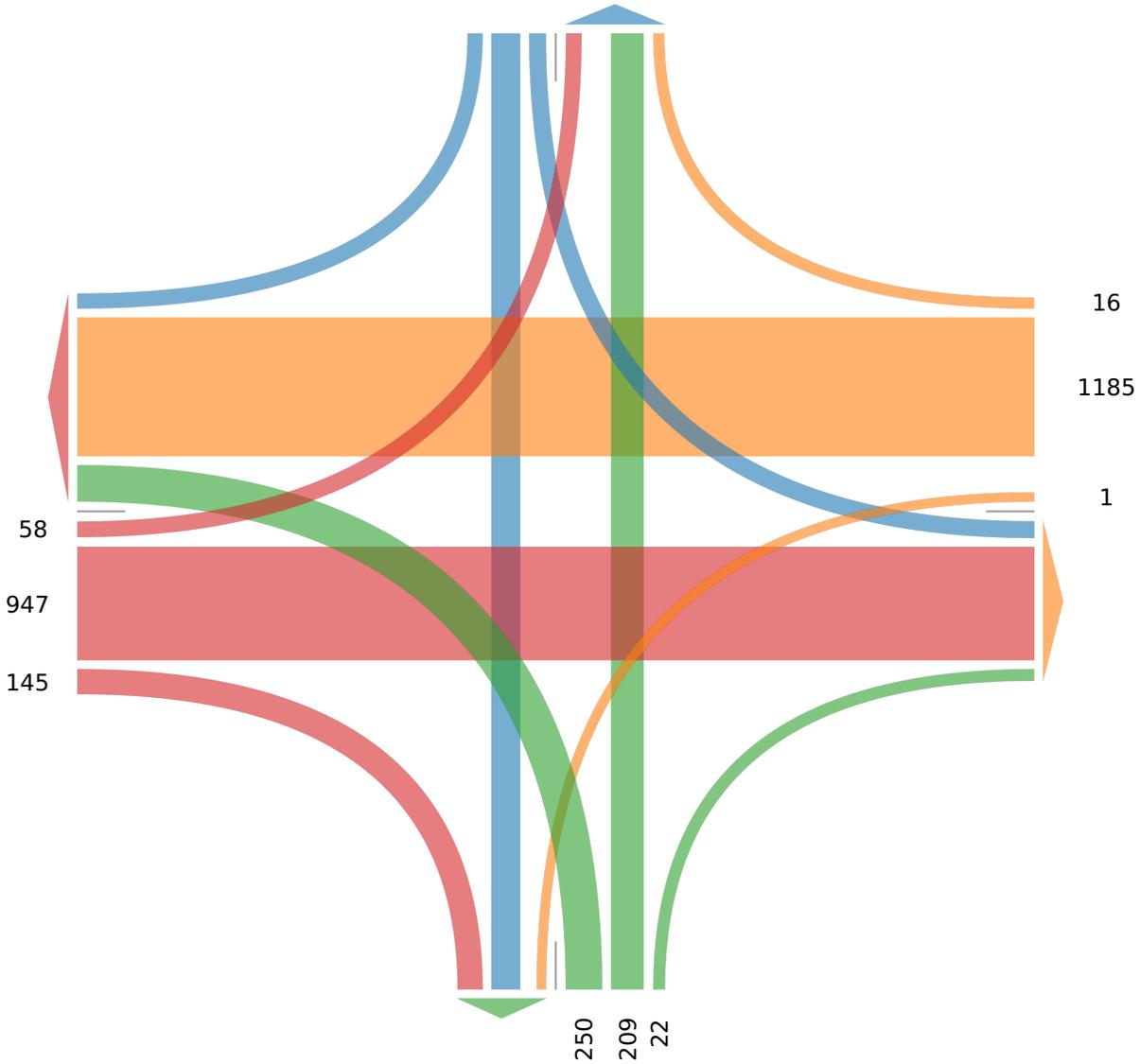
[N] State Line Rd

Total: 577  
 In: 294 Out: 283

53  
 172  
 69

[W] Shawnee Mission Pkwy

Total: 2638  
 In: 1150 Out: 1488



[E] Shawnee Mission Pkwy  
 In: 1202  
 Out: 1038  
 Total: 2240

Out: 318 In: 481  
 Total: 799  
 [S] State Line Rd

TMC - Belinder Ave & State Park Rd - TMC

Tue Mar 21, 2023

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047712, Location: 39.025323, -94.61677



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Belinder Rd Westbound				State Park Rd Northbound				State Park Rd Southbound				Int
	L	R	U	App	T	R	U	App	L	T	U	App	
2023-03-21 7:00AM	0	0	0	0	6	1	0	7	0	6	0	6	13
7:15AM	2	0	0	2	4	5	0	9	0	16	0	16	27
7:30AM	5	1	0	6	5	7	0	12	1	17	0	18	36
7:45AM	4	2	0	6	17	12	0	29	7	17	0	24	59
Hourly Total	11	3	0	14	32	25	0	57	8	56	0	64	135
8:00AM	3	2	0	5	21	13	0	34	4	17	0	21	60
8:15AM	3	1	0	4	18	6	0	24	6	20	0	26	54
8:30AM	2	0	0	2	8	5	0	13	1	10	0	11	26
8:45AM	2	1	0	3	9	3	0	12	1	8	0	9	24
Hourly Total	10	4	0	14	56	27	0	83	12	55	0	67	164
4:00PM	4	0	0	4	7	4	0	11	1	13	0	14	29
4:15PM	9	0	0	9	12	6	0	18	2	16	0	18	45
4:30PM	3	2	0	5	11	4	0	15	3	16	0	19	39
4:45PM	5	2	0	7	12	3	0	15	4	17	0	21	43
Hourly Total	21	4	0	25	42	17	0	59	10	62	0	72	156
5:00PM	4	2	0	6	14	7	0	21	3	18	0	21	48
5:15PM	6	1	0	7	15	2	0	17	1	24	0	25	49
5:30PM	2	1	0	3	8	6	0	14	2	8	0	10	27
5:45PM	3	0	0	3	17	4	0	21	0	5	0	5	29
Hourly Total	15	4	0	19	54	19	0	73	6	55	0	61	153
<b>Total</b>	57	15	0	72	184	88	0	272	36	228	0	264	608
<b>% Approach</b>	79.2%	20.8%	0%	-	67.6%	32.4%	0%	-	13.6%	86.4%	0%	-	-
<b>% Total</b>	9.4%	2.5%	0%	11.8%	30.3%	14.5%	0%	44.7%	5.9%	37.5%	0%	43.4%	-
<b>Lights</b>	57	15	0	72	183	88	0	271	34	226	0	260	603
<b>% Lights</b>	100%	100%	0%	100%	99.5%	100%	0%	99.6%	94.4%	99.1%	0%	98.5%	99.2%
<b>Articulated Trucks</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>% Articulated Trucks</b>	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Buses and Single-Unit Trucks</b>	0	0	0	0	1	0	0	1	2	2	0	4	5
<b>% Buses and Single-Unit Trucks</b>	0%	0%	0%	0%	0.5%	0%	0%	0.4%	5.6%	0.9%	0%	1.5%	0.8%

\*L: Left, R: Right, T: Thru, U: U-Turn

TMC - Belinder Ave & State Park Rd - TMC

Tue Mar 21, 2023

Full Length (7 AM-9 AM, 4 PM-6 PM)

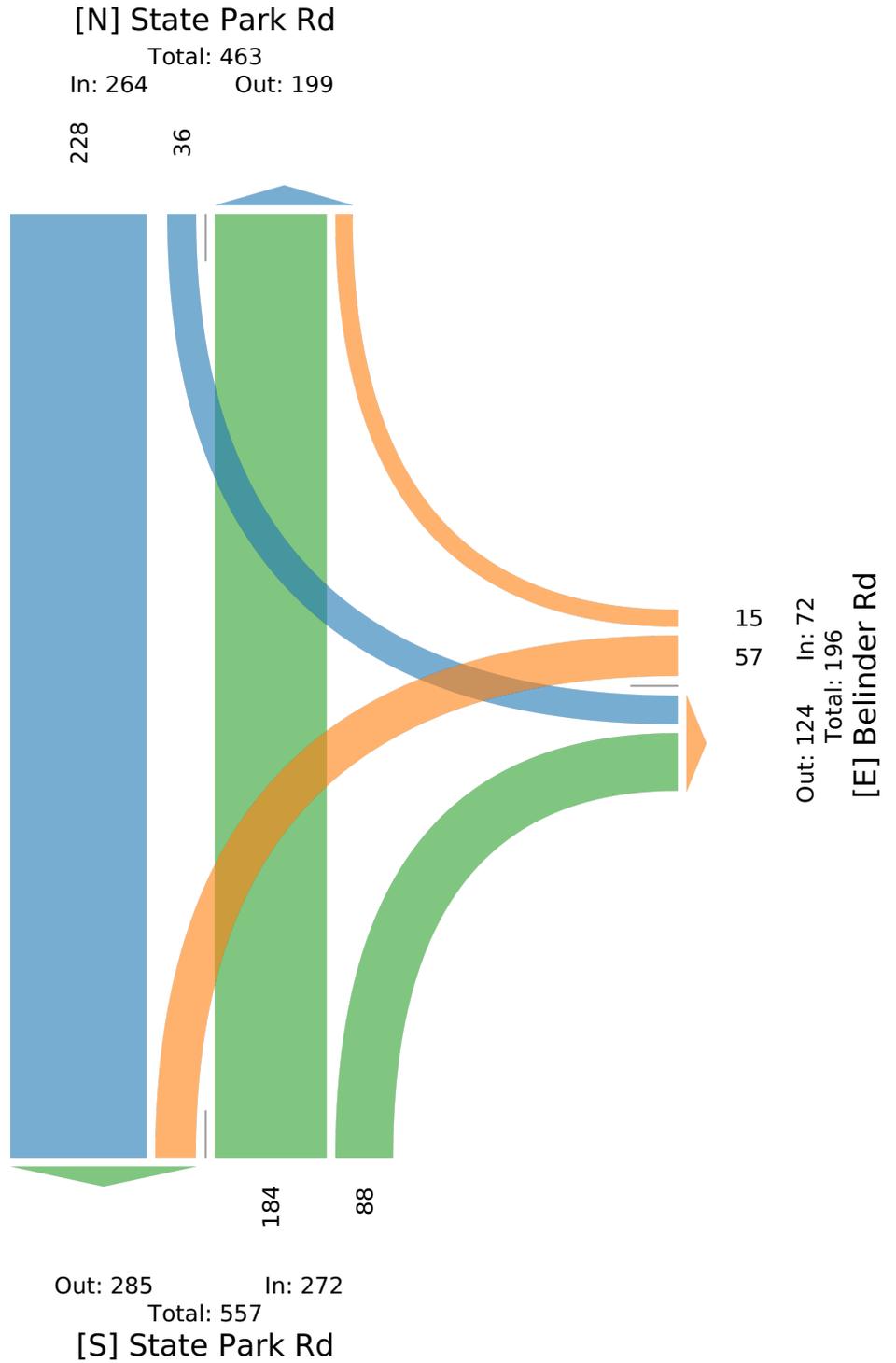
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047712, Location: 39.025323, -94.61677



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



TMC - Belinder Ave & State Park Rd - TMC

Tue Mar 21, 2023

AM Peak (7:30 AM - 8:30 AM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047712, Location: 39.025323, -94.61677



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Belinder Rd Westbound				State Park Rd Northbound				State Park Rd Southbound				
Time	L	R	U	App	T	R	U	App	L	T	U	App	Int
2023-03-21 7:30AM	5	1	0	6	5	7	0	12	1	17	0	18	36
7:45AM	4	2	0	6	17	12	0	29	7	17	0	24	59
8:00AM	3	2	0	5	21	13	0	34	4	17	0	21	60
8:15AM	3	1	0	4	18	6	0	24	6	20	0	26	54
<b>Total</b>	15	6	0	21	61	38	0	99	18	71	0	89	209
<b>% Approach</b>	71.4%	28.6%	0%	-	61.6%	38.4%	0%	-	20.2%	79.8%	0%	-	-
<b>% Total</b>	7.2%	2.9%	0%	10.0%	29.2%	18.2%	0%	47.4%	8.6%	34.0%	0%	42.6%	-
<b>PHF</b>	0.750	0.750	-	0.875	0.726	0.731	-	0.728	0.643	0.888	-	0.856	0.871
<b>Lights</b>	15	6	0	21	60	38	0	98	17	69	0	86	205
<b>% Lights</b>	100%	100%	0%	100%	98.4%	100%	0%	99.0%	94.4%	97.2%	0%	96.6%	98.1%
<b>Articulated Trucks</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>% Articulated Trucks</b>	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Buses and Single-Unit Trucks</b>	0	0	0	0	1	0	0	1	1	2	0	3	4
<b>% Buses and Single-Unit Trucks</b>	0%	0%	0%	0%	1.6%	0%	0%	1.0%	5.6%	2.8%	0%	3.4%	1.9%

\* L: Left, R: Right, T: Thru, U: U-Turn

TMC - Belinder Ave & State Park Rd - TMC

Tue Mar 21, 2023

AM Peak (7:30 AM - 8:30 AM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047712, Location: 39.025323, -94.61677



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] State Park Rd

Total: 156

In: 89

Out: 67

71

18



6  
15

Out: 56 In: 21  
Total: 77

[E] Belinder Rd

Out: 86

In: 99

Total: 185

[S] State Park Rd

TMC - Belinder Ave & State Park Rd - TMC

Tue Mar 21, 2023

PM Peak (4:30 PM - 5:30 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047712, Location: 39.025323, -94.61677



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Belinder Rd Westbound				State Park Rd Northbound				State Park Rd Southbound				Int
	L	R	U	App	T	R	U	App	L	T	U	App	
2023-03-21 4:30PM	3	2	0	5	11	4	0	15	3	16	0	19	39
4:45PM	5	2	0	7	12	3	0	15	4	17	0	21	43
5:00PM	4	2	0	6	14	7	0	21	3	18	0	21	48
5:15PM	6	1	0	7	15	2	0	17	1	24	0	25	49
<b>Total</b>	18	7	0	25	52	16	0	68	11	75	0	86	179
<b>% Approach</b>	72.0%	28.0%	0%	-	76.5%	23.5%	0%	-	12.8%	87.2%	0%	-	-
<b>% Total</b>	10.1%	3.9%	0%	14.0%	29.1%	8.9%	0%	38.0%	6.1%	41.9%	0%	48.0%	-
<b>PHF</b>	0.750	0.875	-	0.893	0.867	0.571	-	0.810	0.688	0.781	-	0.860	0.913
<b>Lights</b>	18	7	0	25	52	16	0	68	11	75	0	86	179
<b>% Lights</b>	100%	100%	0%	100%	100%	100%	0%	100%	100%	100%	0%	100%	100%
<b>Articulated Trucks</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>% Articulated Trucks</b>	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Buses and Single-Unit Trucks</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>% Buses and Single-Unit Trucks</b>	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

\* L: Left, R: Right, T: Thru, U: U-Turn

TMC - Belinder Ave & State Park Rd - TMC

Tue Mar 21, 2023

PM Peak (4:30 PM - 5:30 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047712, Location: 39.025323, -94.61677



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] State Park Rd

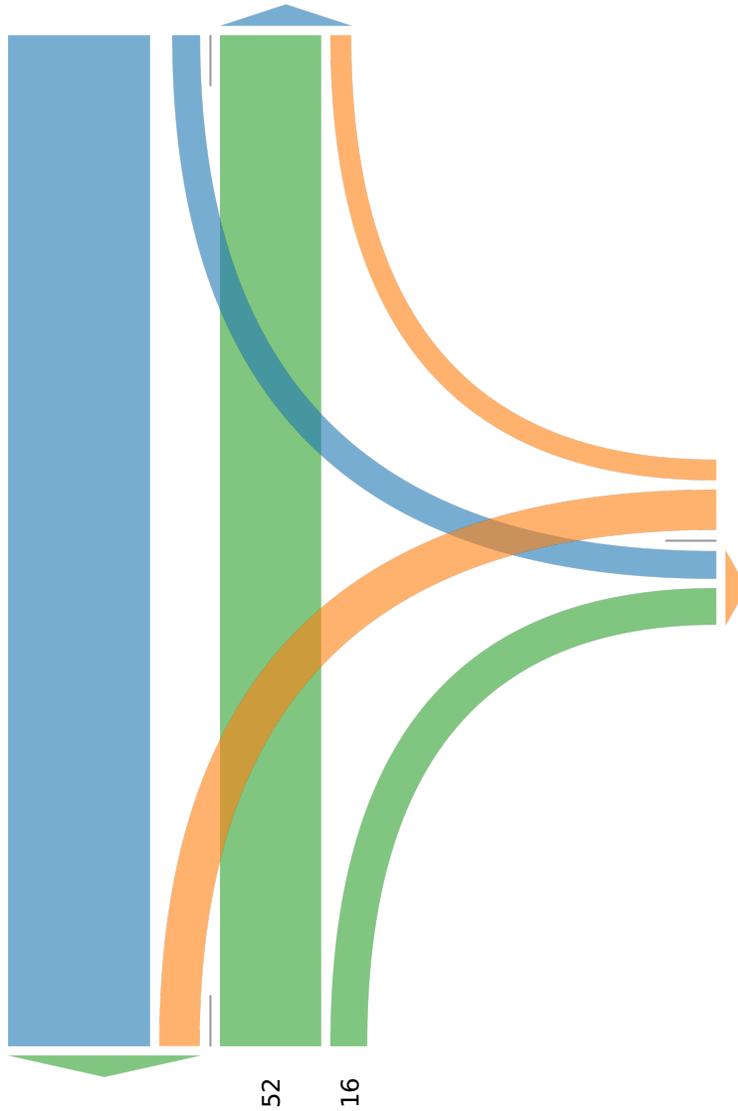
Total: 145

In: 86

Out: 59

75

11



7  
18

Out: 27 In: 25

Total: 52

[E] Belinder Rd

Out: 93

In: 68

Total: 161

[S] State Park Rd

Shawnee Mission Pkwy & Belinder Ave - TMC

Tue Mar 21, 2023

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047713, Location: 39.03331, -94.616556



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Shawnee Mission Pkwy Eastbound					Shawnee Mission Pkwy Westbound					Belinder Rd Northbound					Belinder Rd Southbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2023-03-21 7:00AM	10	214	0	0	224	0	135	9	0	144	1	0	1	0	2	9	0	10	0	19	389
7:15AM	18	317	0	0	335	1	163	9	0	173	1	1	3	0	5	14	1	26	0	41	554
7:30AM	45	390	1	0	436	1	208	12	0	221	6	7	1	0	14	12	5	23	0	40	711
7:45AM	43	467	2	0	512	0	230	12	0	242	5	12	2	0	19	14	4	16	0	34	807
Hourly Total	116	1388	3	0	1507	2	736	42	0	780	13	20	7	0	40	49	10	75	0	134	2461
8:00AM	40	429	0	0	469	0	250	18	0	268	4	16	4	0	24	26	6	39	0	71	832
8:15AM	21	401	2	0	424	0	223	13	0	236	7	4	3	0	14	20	3	26	0	49	723
8:30AM	23	376	0	0	399	1	190	13	0	204	4	6	0	0	10	14	2	16	0	32	645
8:45AM	23	384	1	0	408	0	199	9	0	208	2	2	0	0	4	17	2	22	0	41	661
Hourly Total	107	1590	3	0	1700	1	862	53	0	916	17	28	7	0	52	77	13	103	0	193	2861
4:00PM	10	217	1	0	228	0	357	9	0	366	1	4	1	0	6	23	6	25	0	54	654
4:15PM	11	211	0	0	222	1	399	7	0	407	3	4	4	0	11	22	8	24	0	54	694
4:30PM	18	225	1	0	244	2	427	13	0	442	4	3	0	0	7	18	3	22	0	43	736
4:45PM	26	244	1	0	271	4	497	14	0	515	3	3	1	0	7	22	5	29	0	56	849
Hourly Total	65	897	3	0	965	7	1680	43	0	1730	11	14	6	0	31	85	22	100	0	207	2933
5:00PM	16	255	0	0	271	1	449	6	0	456	6	5	0	0	11	13	5	22	0	40	778
5:15PM	25	257	1	0	283	2	472	4	0	478	3	3	1	0	7	23	4	20	0	47	815
5:30PM	15	255	0	0	270	1	431	8	0	440	0	8	3	0	11	21	4	20	0	45	766
5:45PM	15	214	0	0	229	1	341	8	0	350	3	3	1	0	7	19	2	20	0	41	627
Hourly Total	71	981	1	0	1053	5	1693	26	0	1724	12	19	5	0	36	76	15	82	0	173	2986
<b>Total</b>	<b>359</b>	<b>4856</b>	<b>10</b>	<b>0</b>	<b>5225</b>	<b>15</b>	<b>4971</b>	<b>164</b>	<b>0</b>	<b>5150</b>	<b>53</b>	<b>81</b>	<b>25</b>	<b>0</b>	<b>159</b>	<b>287</b>	<b>60</b>	<b>360</b>	<b>0</b>	<b>707</b>	<b>11241</b>
<b>% Approach</b>	6.9%	92.9%	0.2%	0%	-	0.3%	96.5%	3.2%	0%	-	33.3%	50.9%	15.7%	0%	-	40.6%	8.5%	50.9%	0%	-	-
<b>% Total</b>	3.2%	43.2%	0.1%	0%	<b>46.5%</b>	0.1%	44.2%	1.5%	0%	<b>45.8%</b>	0.5%	0.7%	0.2%	0%	<b>1.4%</b>	2.6%	0.5%	3.2%	0%	<b>6.3%</b>	-
<b>Lights</b>	352	4815	10	0	5177	15	4929	154	0	5098	52	81	24	0	157	283	59	350	0	692	11124
<b>% Lights</b>	98.1%	99.2%	100%	0%	<b>99.1%</b>	100%	99.2%	93.9%	0%	<b>99.0%</b>	98.1%	100%	96.0%	0%	<b>98.7%</b>	98.6%	98.3%	97.2%	0%	<b>97.9%</b>	99.0%
<b>Articulated Trucks</b>	0	4	0	0	4	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	6
<b>% Articulated Trucks</b>	0%	0.1%	0%	0%	<b>0.1%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0.1%
<b>Buses and Single-Unit Trucks</b>	7	37	0	0	44	0	40	10	0	50	1	0	1	0	2	4	1	10	0	15	111
<b>% Buses and Single-Unit Trucks</b>	1.9%	0.8%	0%	0%	<b>0.8%</b>	0%	0.8%	6.1%	0%	<b>1.0%</b>	1.9%	0%	4.0%	0%	<b>1.3%</b>	1.4%	1.7%	2.8%	0%	<b>2.1%</b>	1.0%

\*L: Left, R: Right, T: Thru, U: U-Turn

Shawnee Mission Pkwy & Belinder Ave - TMC

Tue Mar 21, 2023

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047713, Location: 39.03331, -94.616556



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Belinder Rd

Total: 1311

In: 707 Out: 604

360  
60  
287

[W] Shawnee Mission Pkwy

Total: 10609

In: 5225

Out: 5384

359

4856

10

164

4971

15

In: 5150

Out: 5168

Total: 10318

[E] Shawnee Mission Pkwy

Out: 85 In: 159

Total: 244

[S] Belinder Rd

53  
81  
25

Shawnee Mission Pkwy & Belinder Ave - TMC

Tue Mar 21, 2023

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047713, Location: 39.03331, -94.616556



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Shawnee Mission Pkwy Eastbound					Shawnee Mission Pkwy Westbound					Belinder Rd Northbound					Belinder Rd Southbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2023-03-21 7:30AM	45	390	1	0	<b>436</b>	1	208	12	0	<b>221</b>	6	7	1	0	<b>14</b>	12	5	23	0	<b>40</b>	<b>711</b>
7:45AM	43	467	2	0	<b>512</b>	0	230	12	0	<b>242</b>	5	12	2	0	<b>19</b>	14	4	16	0	<b>34</b>	<b>807</b>
8:00AM	40	429	0	0	<b>469</b>	0	250	18	0	<b>268</b>	4	16	4	0	<b>24</b>	26	6	39	0	<b>71</b>	<b>832</b>
8:15AM	21	401	2	0	<b>424</b>	0	223	13	0	<b>236</b>	7	4	3	0	<b>14</b>	20	3	26	0	<b>49</b>	<b>723</b>
<b>Total</b>	<b>149</b>	<b>1687</b>	<b>5</b>	<b>0</b>	<b>1841</b>	<b>1</b>	<b>911</b>	<b>55</b>	<b>0</b>	<b>967</b>	<b>22</b>	<b>39</b>	<b>10</b>	<b>0</b>	<b>71</b>	<b>72</b>	<b>18</b>	<b>104</b>	<b>0</b>	<b>194</b>	<b>3073</b>
<b>% Approach</b>	8.1%	91.6%	0.3%	0%	-	0.1%	94.2%	5.7%	0%	-	31.0%	54.9%	14.1%	0%	-	37.1%	9.3%	53.6%	0%	-	-
<b>% Total</b>	4.8%	54.9%	0.2%	0%	<b>59.9%</b>	0%	29.6%	1.8%	0%	<b>31.5%</b>	0.7%	1.3%	0.3%	0%	<b>2.3%</b>	2.3%	0.6%	3.4%	0%	<b>6.3%</b>	-
<b>PHF</b>	0.828	0.903	0.625	-	<b>0.899</b>	0.250	0.911	0.764	-	<b>0.902</b>	0.786	0.609	0.625	-	<b>0.740</b>	0.692	0.750	0.667	-	<b>0.683</b>	0.923
<b>Lights</b>	142	1672	5	0	<b>1819</b>	1	892	52	0	<b>945</b>	22	39	9	0	<b>70</b>	71	17	98	0	<b>186</b>	3020
<b>% Lights</b>	95.3%	99.1%	100%	0%	<b>98.8%</b>	100%	97.9%	94.5%	0%	<b>97.7%</b>	100%	100%	90.0%	0%	<b>98.6%</b>	98.6%	94.4%	94.2%	0%	<b>95.9%</b>	98.3%
<b>Articulated Trucks</b>	0	2	0	0	<b>2</b>	0	1	0	0	<b>1</b>	0	0	0	0	<b>0</b>	0	0	0	0	<b>0</b>	3
<b>% Articulated Trucks</b>	0%	0.1%	0%	0%	<b>0.1%</b>	0%	0.1%	0%	0%	<b>0.1%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0.1%
<b>Buses and Single-Unit Trucks</b>	7	13	0	0	<b>20</b>	0	18	3	0	<b>21</b>	0	0	1	0	<b>1</b>	1	1	6	0	<b>8</b>	50
<b>% Buses and Single-Unit Trucks</b>	4.7%	0.8%	0%	0%	<b>1.1%</b>	0%	2.0%	5.5%	0%	<b>2.2%</b>	0%	0%	10.0%	0%	<b>1.4%</b>	1.4%	5.6%	5.8%	0%	<b>4.1%</b>	1.6%

\* L: Left, R: Right, T: Thru, U: U-Turn

**Shawnee Mission Pkwy & Belinder Ave - TMC**

Tue Mar 21, 2023

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047713, Location: 39.03331, -94.616556



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

**[N] Belinder Rd**

Total: 437

In: 194 Out: 243

104  
18  
72

**[W] Shawnee Mission Pkwy**

Total: 2878  
In: 1841 Out: 1037

149  
1687  
5

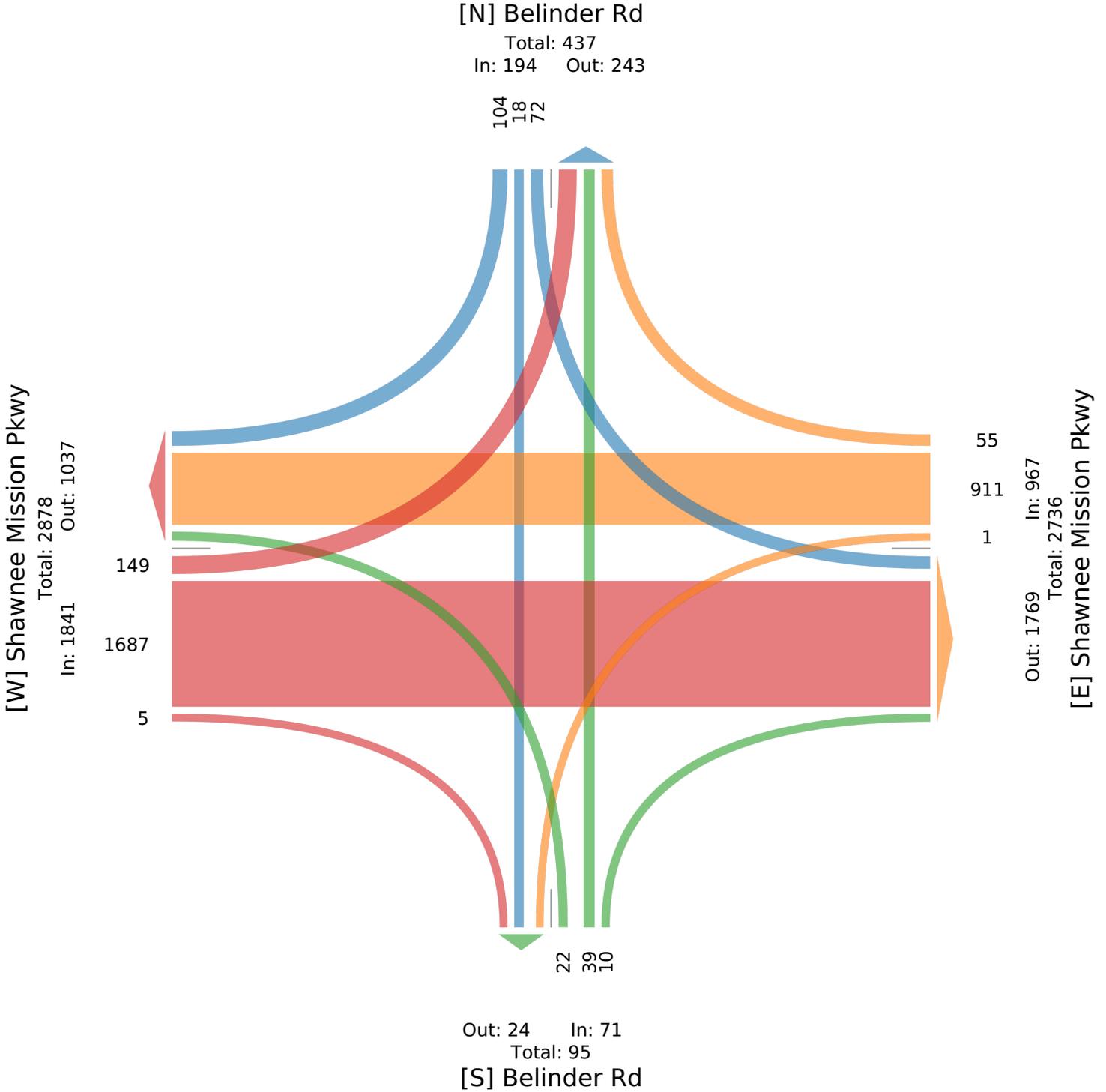
55  
911  
1  
Out: 1769 In: 967  
Total: 2736

**[E] Shawnee Mission Pkwy**

Out: 24 In: 71  
Total: 95

**[S] Belinder Rd**

22  
39  
10



Shawnee Mission Pkwy & Belinder Ave - TMC  
 Tue Mar 21, 2023  
 PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour  
 All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)  
 All Movements  
 ID: 1047713, Location: 39.03331, -94.616556



Provided by: Gewalt Hamilton Associates Inc.  
 625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Shawnee Mission Pkwy Eastbound					Shawnee Mission Pkwy Westbound					Belinder Rd Northbound					Belinder Rd Southbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2023-03-21 4:45PM	26	244	1	0	271	4	497	14	0	515	3	3	1	0	7	22	5	29	0	56	849
5:00PM	16	255	0	0	271	1	449	6	0	456	6	5	0	0	11	13	5	22	0	40	778
5:15PM	25	257	1	0	283	2	472	4	0	478	3	3	1	0	7	23	4	20	0	47	815
5:30PM	15	255	0	0	270	1	431	8	0	440	0	8	3	0	11	21	4	20	0	45	766
<b>Total</b>	82	1011	2	0	1095	8	1849	32	0	1889	12	19	5	0	36	79	18	91	0	188	3208
<b>% Approach</b>	7.5%	92.3%	0.2%	0%	-	0.4%	97.9%	1.7%	0%	-	33.3%	52.8%	13.9%	0%	-	42.0%	9.6%	48.4%	0%	-	-
<b>% Total</b>	2.6%	31.5%	0.1%	0%	34.1%	0.2%	57.6%	1.0%	0%	58.9%	0.4%	0.6%	0.2%	0%	1.1%	2.5%	0.6%	2.8%	0%	5.9%	-
<b>PHF</b>	0.788	0.983	0.500	-	0.967	0.500	0.930	0.571	-	0.917	0.500	0.594	0.417	-	0.818	0.859	0.900	0.784	-	0.839	0.945
<b>Lights</b>	82	1006	2	0	1090	8	1845	29	0	1882	12	19	5	0	36	79	18	90	0	187	3195
<b>% Lights</b>	100%	99.5%	100%	0%	99.5%	100%	99.8%	90.6%	0%	99.6%	100%	100%	100%	0%	100%	100%	100%	98.9%	0%	99.5%	99.6%
<b>Articulated Trucks</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>% Articulated Trucks</b>	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Buses and Single-Unit Trucks</b>	0	5	0	0	5	0	4	3	0	7	0	0	0	0	0	0	0	1	0	1	13
<b>% Buses and Single-Unit Trucks</b>	0%	0.5%	0%	0%	0.5%	0%	0.2%	9.4%	0%	0.4%	0%	0%	0%	0%	0%	0%	0%	1.1%	0%	0.5%	0.4%

\* L: Left, R: Right, T: Thru, U: U-Turn

**Shawnee Mission Pkwy & Belinder Ave - TMC**

Tue Mar 21, 2023

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

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047713, Location: 39.03331, -94.616556



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

**[N] Belinder Rd**

Total: 321

In: 188 Out: 133

91  
18  
79

**[W] Shawnee Mission Pkwy**

Total: 3047  
In: 1095 Out: 1952

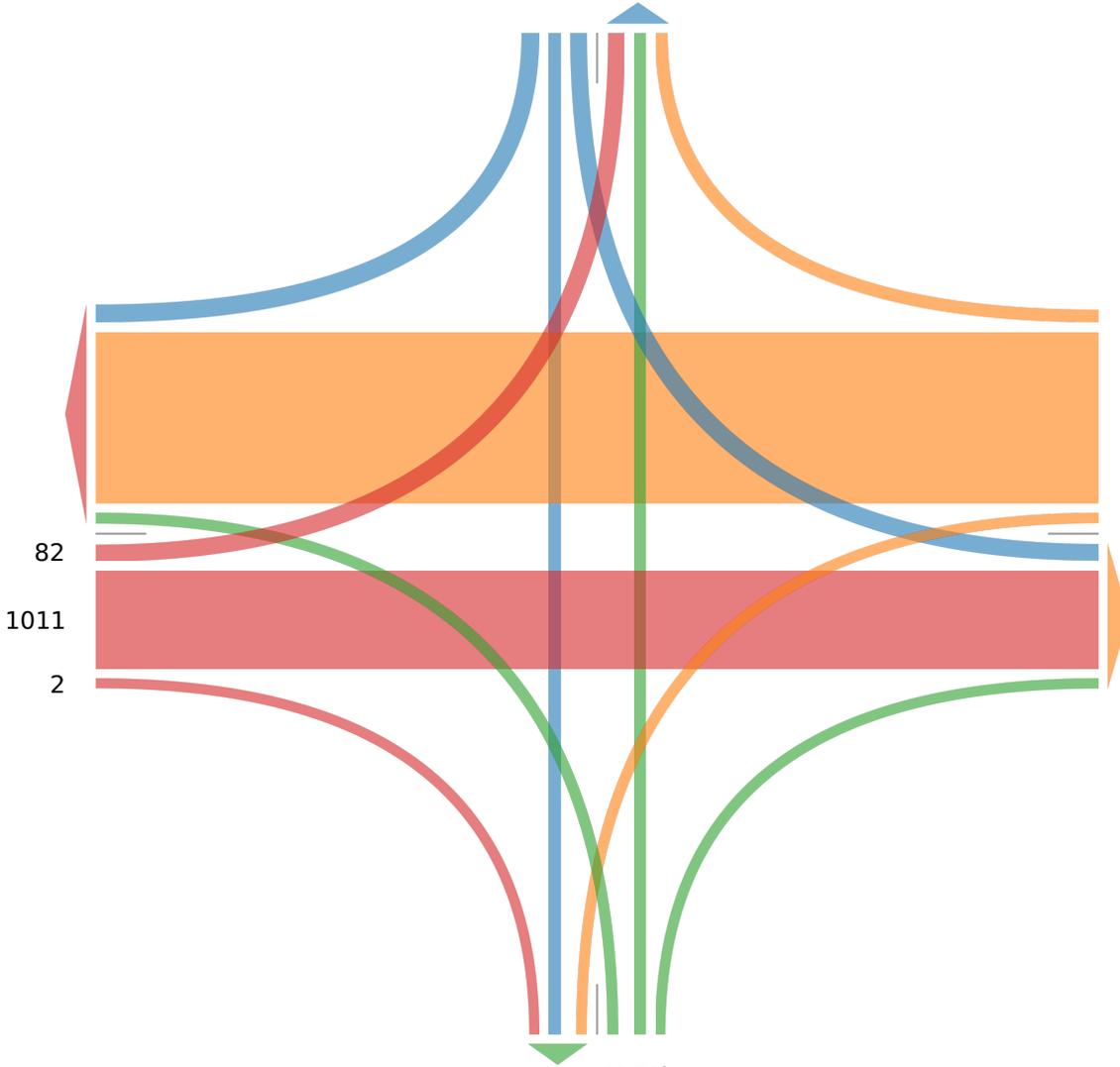
82  
1011  
2

Out: 28 In: 36  
Total: 64

**[S] Belinder Rd**

12  
19  
5

32  
1849  
8  
Out: 1095 In: 1889  
Total: 2984  
**[E] Shawnee Mission Pkwy**



**Shawnee Mission Pkwy & Mission Rd - TMC**

Tue Mar 21, 2023

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047714, Location: 39.029629, -94.625941



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Shawnee Mission Pkwy Eastbound					Shawnee Mission Pkwy Westbound					Mission Rd Northbound					Mission Rd Southbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2023-03-21 7:00AM	5	195	4	0	<b>204</b>	19	123	2	0	<b>144</b>	2	7	36	0	<b>45</b>	4	14	4	0	<b>22</b>	<b>415</b>
7:15AM	11	290	2	0	<b>303</b>	27	173	1	0	<b>201</b>	4	19	47	0	<b>70</b>	16	28	7	0	<b>51</b>	<b>625</b>
7:30AM	7	371	9	0	<b>387</b>	15	209	7	0	<b>231</b>	12	16	64	0	<b>92</b>	27	18	16	0	<b>61</b>	<b>771</b>
7:45AM	19	443	5	0	<b>467</b>	26	236	10	0	<b>272</b>	9	43	82	0	<b>134</b>	44	24	17	0	<b>85</b>	<b>958</b>
Hourly Total	42	1299	20	0	<b>1361</b>	87	741	20	0	<b>848</b>	27	85	229	0	<b>341</b>	91	84	44	0	<b>219</b>	<b>2769</b>
8:00AM	18	381	4	0	<b>403</b>	30	227	18	0	<b>275</b>	9	53	71	0	<b>133</b>	27	32	31	0	<b>90</b>	<b>901</b>
8:15AM	18	363	5	0	<b>386</b>	35	216	10	0	<b>261</b>	11	35	58	0	<b>104</b>	15	24	30	0	<b>69</b>	<b>820</b>
8:30AM	7	331	2	0	<b>340</b>	34	183	4	0	<b>221</b>	9	22	68	0	<b>99</b>	19	32	9	0	<b>60</b>	<b>720</b>
8:45AM	10	357	6	0	<b>373</b>	20	205	2	0	<b>227</b>	11	14	48	0	<b>73</b>	13	13	5	0	<b>31</b>	<b>704</b>
Hourly Total	53	1432	17	0	<b>1502</b>	119	831	34	0	<b>984</b>	40	124	245	0	<b>409</b>	74	101	75	0	<b>250</b>	<b>3145</b>
4:00PM	10	180	4	0	<b>194</b>	38	337	8	0	<b>383</b>	8	26	35	0	<b>69</b>	17	23	17	0	<b>57</b>	<b>703</b>
4:15PM	9	237	5	0	<b>251</b>	52	382	4	0	<b>438</b>	11	25	34	0	<b>70</b>	5	27	11	0	<b>43</b>	<b>802</b>
4:30PM	13	206	3	0	<b>222</b>	44	388	3	0	<b>435</b>	8	24	36	0	<b>68</b>	8	34	22	0	<b>64</b>	<b>789</b>
4:45PM	14	261	9	0	<b>284</b>	61	447	8	0	<b>516</b>	7	22	29	0	<b>58</b>	7	38	16	0	<b>61</b>	<b>919</b>
Hourly Total	46	884	21	0	<b>951</b>	195	1554	23	0	<b>1772</b>	34	97	134	0	<b>265</b>	37	122	66	0	<b>225</b>	<b>3213</b>
5:00PM	14	262	7	0	<b>283</b>	52	419	0	0	<b>471</b>	10	22	30	0	<b>62</b>	15	41	12	0	<b>68</b>	<b>884</b>
5:15PM	8	252	7	0	<b>267</b>	62	460	9	0	<b>531</b>	15	28	45	0	<b>88</b>	10	38	20	0	<b>68</b>	<b>954</b>
5:30PM	7	253	8	0	<b>268</b>	55	423	7	0	<b>485</b>	10	24	45	0	<b>79</b>	15	31	20	0	<b>66</b>	<b>898</b>
5:45PM	8	196	9	0	<b>213</b>	54	303	4	0	<b>361</b>	11	22	23	0	<b>56</b>	10	38	19	0	<b>67</b>	<b>697</b>
Hourly Total	37	963	31	0	<b>1031</b>	223	1605	20	0	<b>1848</b>	46	96	143	0	<b>285</b>	50	148	71	0	<b>269</b>	<b>3433</b>
<b>Total</b>	<b>178</b>	<b>4578</b>	<b>89</b>	<b>0</b>	<b>4845</b>	<b>624</b>	<b>4731</b>	<b>97</b>	<b>0</b>	<b>5452</b>	<b>147</b>	<b>402</b>	<b>751</b>	<b>0</b>	<b>1300</b>	<b>252</b>	<b>455</b>	<b>256</b>	<b>0</b>	<b>963</b>	<b>12560</b>
<b>% Approach</b>	3.7%	94.5%	1.8%	0%	-	11.4%	86.8%	1.8%	0%	-	11.3%	30.9%	57.8%	0%	-	26.2%	47.2%	26.6%	0%	-	-
<b>% Total</b>	1.4%	36.4%	0.7%	0%	<b>38.6%</b>	5.0%	37.7%	0.8%	0%	<b>43.4%</b>	1.2%	3.2%	6.0%	0%	<b>10.4%</b>	2.0%	3.6%	2.0%	0%	<b>7.7%</b>	-
<b>Lights</b>	175	4534	89	0	<b>4798</b>	619	4683	97	0	<b>5399</b>	147	398	747	0	<b>1292</b>	250	451	250	0	<b>951</b>	12440
<b>% Lights</b>	98.3%	99.0%	100%	0%	<b>99.0%</b>	99.2%	99.0%	100%	0%	<b>99.0%</b>	100%	99.0%	99.5%	0%	<b>99.4%</b>	99.2%	99.1%	97.7%	0%	<b>98.8%</b>	99.0%
<b>Articulated Trucks</b>	0	5	0	0	<b>5</b>	0	5	0	0	<b>5</b>	0	1	0	0	<b>1</b>	0	1	0	0	<b>1</b>	12
<b>% Articulated Trucks</b>	0%	0.1%	0%	0%	<b>0.1%</b>	0%	0.1%	0%	0%	<b>0.1%</b>	0%	0.2%	0%	0%	<b>0.1%</b>	0%	0.2%	0%	0%	<b>0.1%</b>	0.1%
<b>Buses and Single-Unit Trucks</b>	3	39	0	0	<b>42</b>	5	43	0	0	<b>48</b>	0	3	4	0	<b>7</b>	2	3	6	0	<b>11</b>	108
<b>% Buses and Single-Unit Trucks</b>	1.7%	0.9%	0%	0%	<b>0.9%</b>	0.8%	0.9%	0%	0%	<b>0.9%</b>	0%	0.7%	0.5%	0%	<b>0.5%</b>	0.8%	0.7%	2.3%	0%	<b>1.1%</b>	0.9%

\*L: Left, R: Right, T: Thru, U: U-Turn

**Shawnee Mission Pkwy & Mission Rd - TMC**

Tue Mar 21, 2023

Full Length (7 AM-9 AM, 4 PM-6 PM)

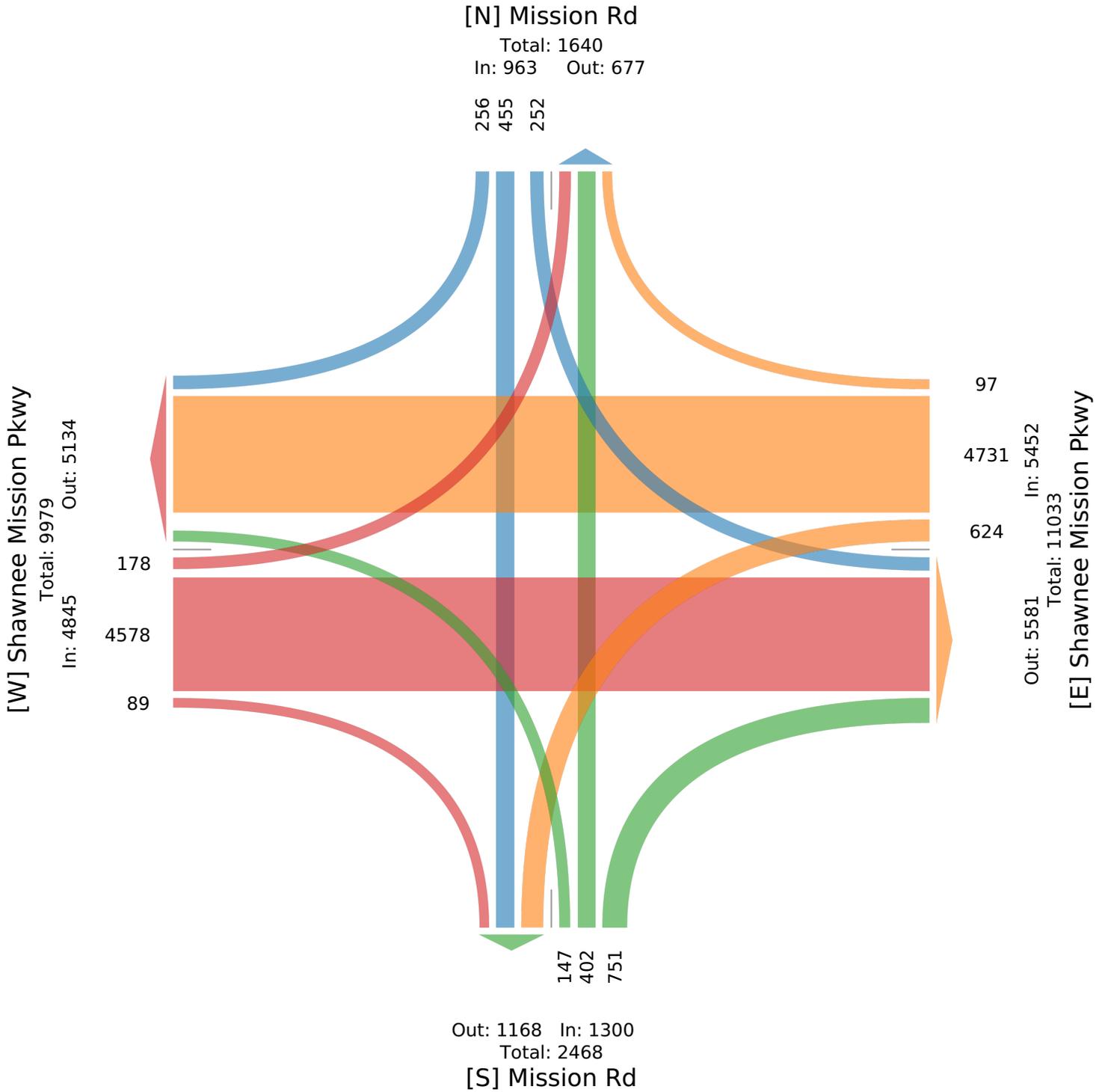
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047714, Location: 39.029629, -94.625941



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Shawnee Mission Pkwy & Mission Rd - TMC

Tue Mar 21, 2023

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047714, Location: 39.029629, -94.625941



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Shawnee Mission Pkwy Eastbound					Shawnee Mission Pkwy Westbound					Mission Rd Northbound					Mission Rd Southbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2023-03-21 7:30AM	7	371	9	0	<b>387</b>	15	209	7	0	<b>231</b>	12	16	64	0	<b>92</b>	27	18	16	0	<b>61</b>	<b>771</b>
7:45AM	19	443	5	0	<b>467</b>	26	236	10	0	<b>272</b>	9	43	82	0	<b>134</b>	44	24	17	0	<b>85</b>	<b>958</b>
8:00AM	18	381	4	0	<b>403</b>	30	227	18	0	<b>275</b>	9	53	71	0	<b>133</b>	27	32	31	0	<b>90</b>	<b>901</b>
8:15AM	18	363	5	0	<b>386</b>	35	216	10	0	<b>261</b>	11	35	58	0	<b>104</b>	15	24	30	0	<b>69</b>	<b>820</b>
<b>Total</b>	<b>62</b>	<b>1558</b>	<b>23</b>	<b>0</b>	<b>1643</b>	<b>106</b>	<b>888</b>	<b>45</b>	<b>0</b>	<b>1039</b>	<b>41</b>	<b>147</b>	<b>275</b>	<b>0</b>	<b>463</b>	<b>113</b>	<b>98</b>	<b>94</b>	<b>0</b>	<b>305</b>	<b>3450</b>
<b>% Approach</b>	3.8%	94.8%	1.4%	0%	-	10.2%	85.5%	4.3%	0%	-	8.9%	31.7%	59.4%	0%	-	37.0%	32.1%	30.8%	0%	-	-
<b>% Total</b>	1.8%	45.2%	0.7%	0%	<b>47.6%</b>	3.1%	25.7%	1.3%	0%	<b>30.1%</b>	1.2%	4.3%	8.0%	0%	<b>13.4%</b>	3.3%	2.8%	2.7%	0%	<b>8.8%</b>	-
<b>PHF</b>	0.816	0.879	0.639	-	<b>0.880</b>	0.757	0.941	0.625	-	<b>0.945</b>	0.854	0.693	0.838	-	<b>0.864</b>	0.642	0.766	0.758	-	<b>0.847</b>	0.900
<b>Lights</b>	61	1535	23	0	<b>1619</b>	104	863	45	0	<b>1012</b>	41	147	274	0	<b>462</b>	113	96	93	0	<b>302</b>	3395
<b>% Lights</b>	98.4%	98.5%	100%	0%	<b>98.5%</b>	98.1%	97.2%	100%	0%	<b>97.4%</b>	100%	100%	99.6%	0%	<b>99.8%</b>	100%	98.0%	98.9%	0%	<b>99.0%</b>	98.4%
<b>Articulated Trucks</b>	0	2	0	0	<b>2</b>	0	2	0	0	<b>2</b>	0	0	0	0	<b>0</b>	0	0	0	0	<b>0</b>	4
<b>% Articulated Trucks</b>	0%	0.1%	0%	0%	<b>0.1%</b>	0%	0.2%	0%	0%	<b>0.2%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0.1%
<b>Buses and Single-Unit Trucks</b>	1	21	0	0	<b>22</b>	2	23	0	0	<b>25</b>	0	0	1	0	<b>1</b>	0	2	1	0	<b>3</b>	51
<b>% Buses and Single-Unit Trucks</b>	1.6%	1.3%	0%	0%	<b>1.3%</b>	1.9%	2.6%	0%	0%	<b>2.4%</b>	0%	0%	0.4%	0%	<b>0.2%</b>	0%	2.0%	1.1%	0%	<b>1.0%</b>	1.5%

\* L: Left, R: Right, T: Thru, U: U-Turn

**Shawnee Mission Pkwy & Mission Rd - TMC**

Tue Mar 21, 2023

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047714, Location: 39.029629, -94.625941



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

**[N] Mission Rd**

Total: 559

In: 305 Out: 254

94  
98  
113

**[W] Shawnee Mission Pkwy**

Total: 2666  
In: 1643 Out: 1023

62  
1558  
23

45  
888  
106

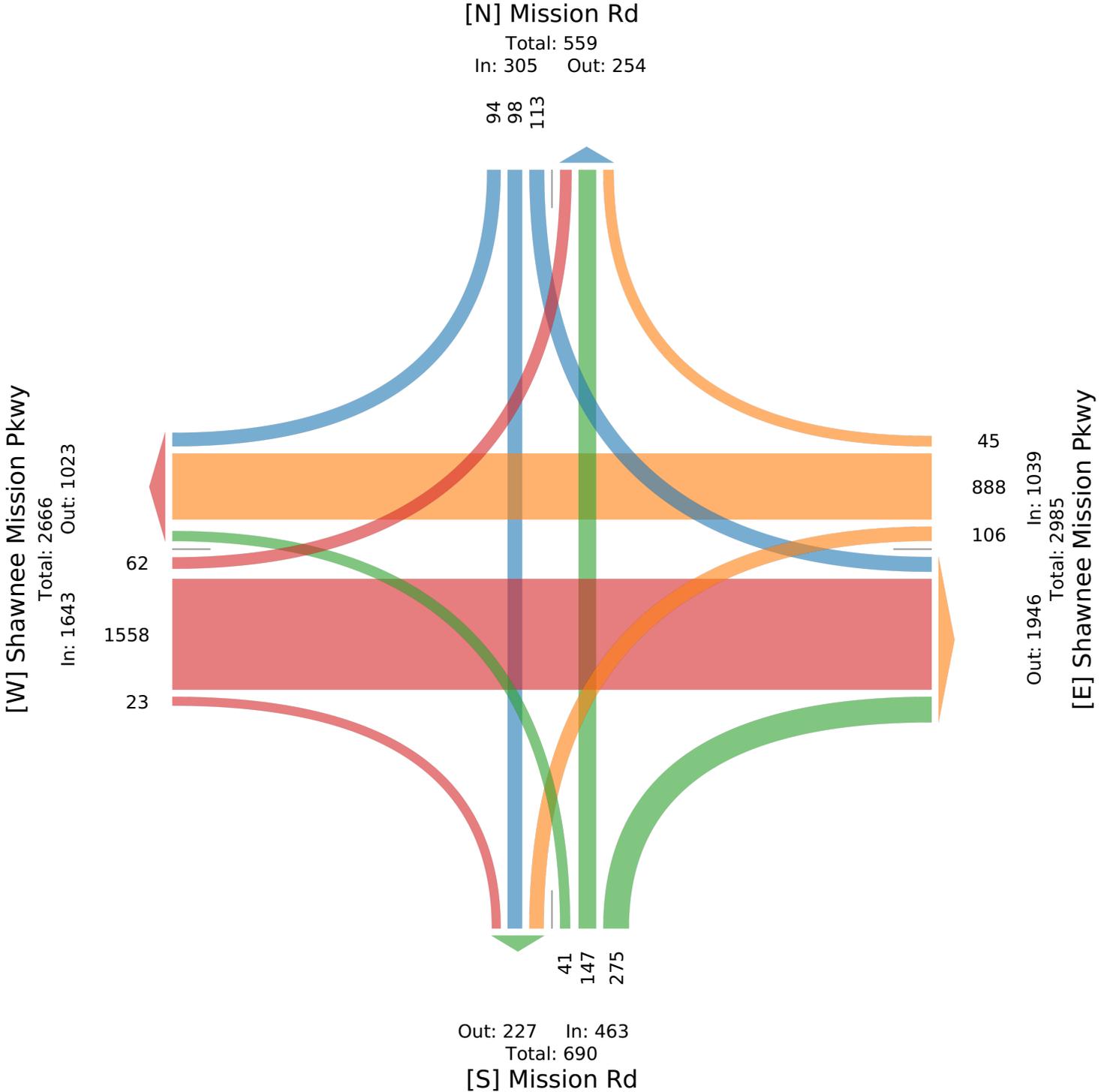
Out: 1946 In: 1039  
Total: 2985

**[E] Shawnee Mission Pkwy**

41  
147  
275

Out: 227 In: 463  
Total: 690

**[S] Mission Rd**



**Shawnee Mission Pkwy & Mission Rd - TMC**

Tue Mar 21, 2023

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

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047714, Location: 39.029629, -94.625941



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Shawnee Mission Pkwy Eastbound					Shawnee Mission Pkwy Westbound					Mission Rd Northbound					Mission Rd Southbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2023-03-21 4:45PM	14	261	9	0	<b>284</b>	61	447	8	0	<b>516</b>	7	22	29	0	<b>58</b>	7	38	16	0	<b>61</b>	<b>919</b>
5:00PM	14	262	7	0	<b>283</b>	52	419	0	0	<b>471</b>	10	22	30	0	<b>62</b>	15	41	12	0	<b>68</b>	<b>884</b>
5:15PM	8	252	7	0	<b>267</b>	62	460	9	0	<b>531</b>	15	28	45	0	<b>88</b>	10	38	20	0	<b>68</b>	<b>954</b>
5:30PM	7	253	8	0	<b>268</b>	55	423	7	0	<b>485</b>	10	24	45	0	<b>79</b>	15	31	20	0	<b>66</b>	<b>898</b>
<b>Total</b>	<b>43</b>	<b>1028</b>	<b>31</b>	<b>0</b>	<b>1102</b>	<b>230</b>	<b>1749</b>	<b>24</b>	<b>0</b>	<b>2003</b>	<b>42</b>	<b>96</b>	<b>149</b>	<b>0</b>	<b>287</b>	<b>47</b>	<b>148</b>	<b>68</b>	<b>0</b>	<b>263</b>	<b>3655</b>
<b>% Approach</b>	3.9%	93.3%	2.8%	0%	-	11.5%	87.3%	1.2%	0%	-	14.6%	33.4%	51.9%	0%	-	17.9%	56.3%	25.9%	0%	-	-
<b>% Total</b>	1.2%	28.1%	0.8%	0%	<b>30.2%</b>	6.3%	47.9%	0.7%	0%	<b>54.8%</b>	1.1%	2.6%	4.1%	0%	<b>7.9%</b>	1.3%	4.0%	1.9%	0%	<b>7.2%</b>	-
<b>PHF</b>	0.768	0.981	0.861	-	<b>0.970</b>	0.927	0.951	0.667	-	<b>0.943</b>	0.700	0.857	0.828	-	<b>0.815</b>	0.783	0.902	0.850	-	<b>0.967</b>	0.958
<b>Lights</b>	43	1023	31	0	<b>1097</b>	230	1745	24	0	<b>1999</b>	42	96	149	0	<b>287</b>	47	148	67	0	<b>262</b>	3645
<b>% Lights</b>	100%	99.5%	100%	0%	<b>99.5%</b>	100%	99.8%	100%	0%	<b>99.8%</b>	100%	100%	100%	0%	<b>100%</b>	100%	100%	98.5%	0%	<b>99.6%</b>	99.7%
<b>Articulated Trucks</b>	0	1	0	0	<b>1</b>	0	0	0	0	<b>0</b>	0	0	0	0	<b>0</b>	0	0	0	0	<b>0</b>	1
<b>% Articulated Trucks</b>	0%	0.1%	0%	0%	<b>0.1%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0%
<b>Buses and Single-Unit Trucks</b>	0	4	0	0	<b>4</b>	0	4	0	0	<b>4</b>	0	0	0	0	<b>0</b>	0	0	1	0	<b>1</b>	9
<b>% Buses and Single-Unit Trucks</b>	0%	0.4%	0%	0%	<b>0.4%</b>	0%	0.2%	0%	0%	<b>0.2%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	1.5%	0%	<b>0.4%</b>	0.2%

\* L: Left, R: Right, T: Thru, U: U-Turn

Shawnee Mission Pkwy & Mission Rd - TMC

Tue Mar 21, 2023

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

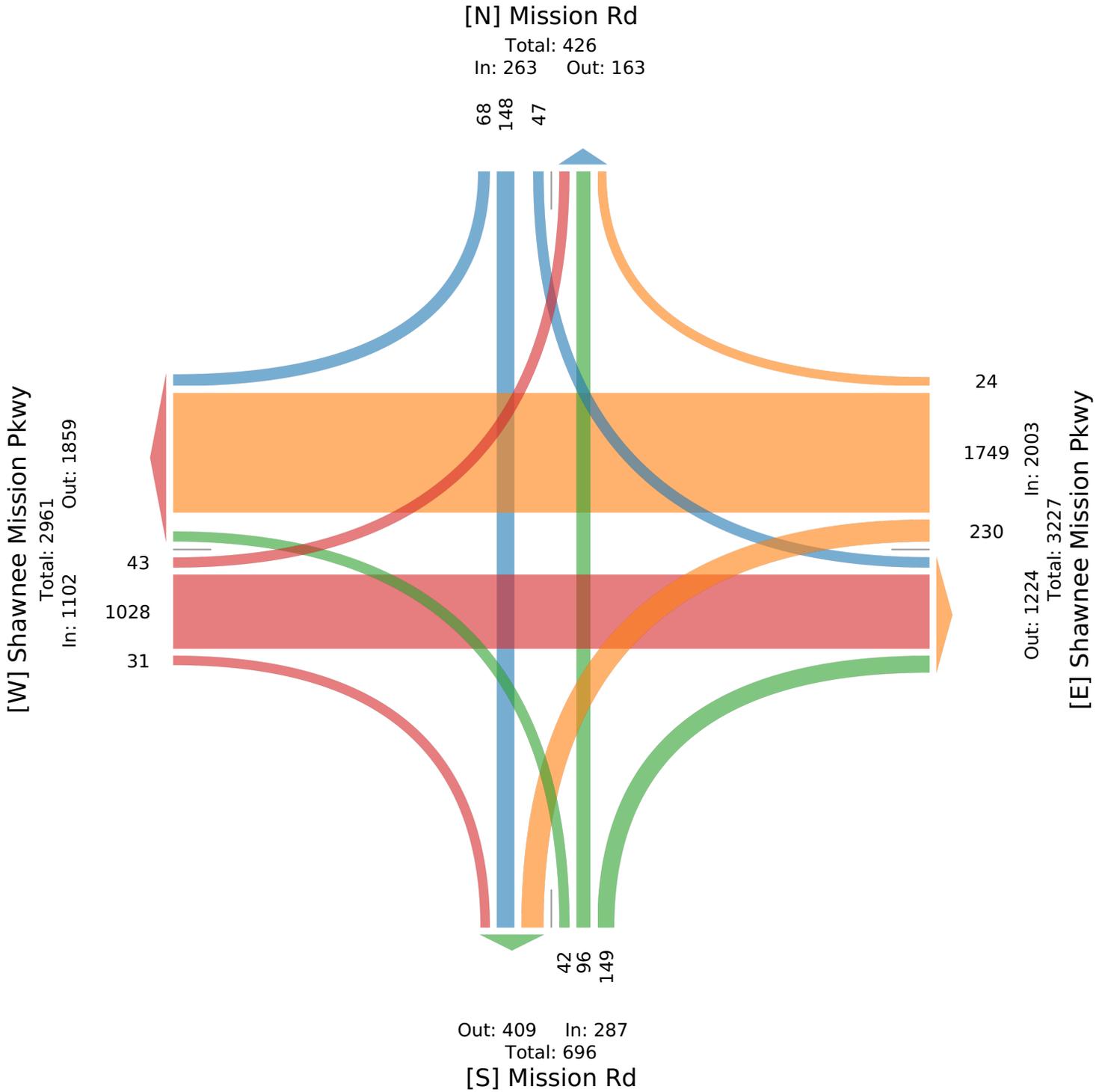
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1047714, Location: 39.029629, -94.625941



Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



# Appendix C: Daily Traffic Volume Counts

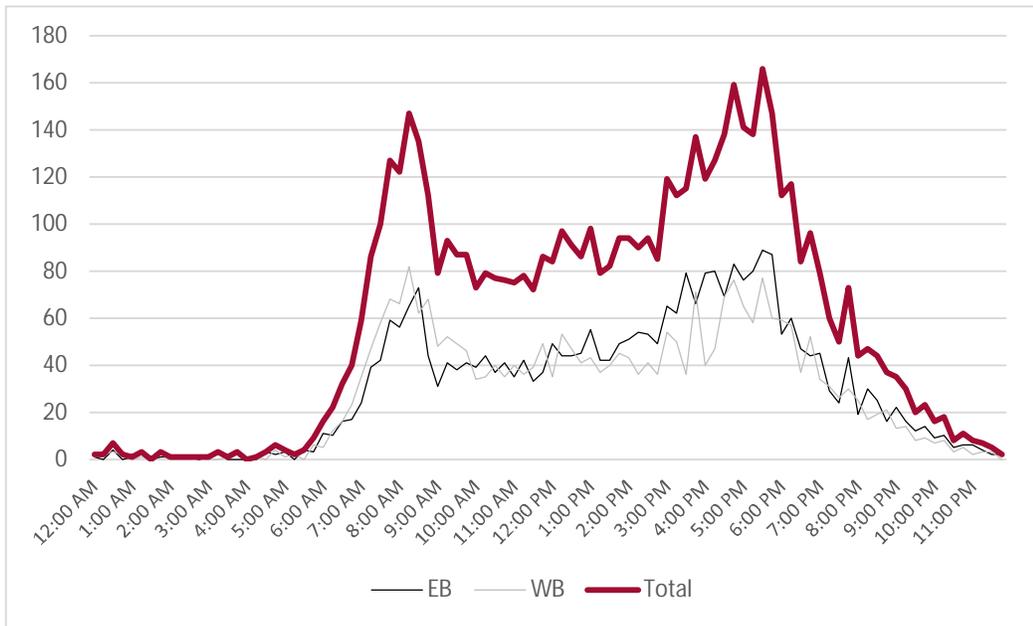


## Belinder Avenue Low Water Crossing Traffic Study Mission Hills, Kansas

Location: 63rd Street, East of Reinhardt Drive  
Date: Tuesday, March 28, 2023

Time	EB	WB	Total	Time	EB	WB	Total	Time	EB	WB	Total	Time	EB	WB	Total	Time	EB	WB	Total
12:00 AM	1	1	2	5:00 AM	3	1	4	10:00 AM	39	34	73	3:00 PM	65	54	119	8:00 PM	19	25	44
12:15 AM	0	2	2	5:15 AM	0	2	2	10:15 AM	44	35	79	3:15 PM	62	50	112	8:15 PM	30	17	47
12:30 AM	4	3	7	5:30 AM	4	0	4	10:30 AM	37	40	77	3:30 PM	79	36	115	8:30 PM	25	19	44
12:45 AM	0	2	2	5:45 AM	3	6	9	10:45 AM	41	35	76	3:45 PM	66	71	137	8:45 PM	16	21	37
1:00 AM	1	0	1	6:00 AM	11	5	16	11:00 AM	35	40	75	4:00 PM	79	40	119	9:00 PM	22	13	35
1:15 AM	2	1	3	6:15 AM	10	12	22	11:15 AM	42	36	78	4:15 PM	80	47	127	9:15 PM	16	14	30
1:30 AM	0	0	0	6:30 AM	16	16	32	11:30 AM	33	39	72	4:30 PM	69	69	138	9:30 PM	12	8	20
1:45 AM	1	2	3	6:45 AM	17	23	40	11:45 AM	37	49	86	4:45 PM	83	76	159	9:45 PM	14	9	23
2:00 AM	1	0	1	7:00 AM	24	35	59	12:00 PM	49	35	84	5:00 PM	76	65	141	10:00 PM	9	7	16
2:15 AM	1	0	1	7:15 AM	39	47	86	12:15 PM	44	53	97	5:15 PM	80	58	138	10:15 PM	10	8	18
2:30 AM	1	0	1	7:30 AM	42	58	100	12:30 PM	44	47	91	5:30 PM	89	77	166	10:30 PM	5	3	8
2:45 AM	0	1	1	7:45 AM	59	68	127	12:45 PM	45	41	86	5:45 PM	87	60	147	10:45 PM	6	5	11
3:00 AM	1	0	1	8:00 AM	56	66	122	1:00 PM	55	43	98	6:00 PM	53	59	112	11:00 PM	6	2	8
3:15 AM	3	0	3	8:15 AM	65	82	147	1:15 PM	42	37	79	6:15 PM	60	57	117	11:15 PM	4	3	7
3:30 AM	0	1	1	8:30 AM	73	62	135	1:30 PM	42	40	82	6:30 PM	47	37	84	11:30 PM	2	3	5
3:45 AM	0	3	3	8:45 AM	44	68	112	1:45 PM	49	45	94	6:45 PM	44	52	96	11:45 PM	2	0	2
4:00 AM	0	0	0	9:00 AM	31	48	79	2:00 PM	51	43	94	7:00 PM	45	34	79				
4:15 AM	0	1	1	9:15 AM	41	52	93	2:15 PM	54	36	90	7:15 PM	29	31	60				
4:30 AM	3	0	3	9:30 AM	38	49	87	2:30 PM	53	41	94	7:30 PM	24	26	50				
4:45 AM	2	4	6	9:45 AM	41	46	87	2:45 PM	49	36	85	7:45 PM	43	30	73				

Hourly	EB	WB	Total
12:00 AM	5	8	13
1:00 AM	4	3	7
2:00 AM	3	1	4
3:00 AM	4	4	8
4:00 AM	5	5	10
5:00 AM	10	9	19
6:00 AM	54	56	110
7:00 AM	164	208	372
8:00 AM	238	278	516
9:00 AM	151	195	346
10:00 AM	161	144	305
11:00 AM	147	164	311
12:00 PM	182	176	358
1:00 PM	188	165	353
2:00 PM	207	156	363
3:00 PM	272	211	483
4:00 PM	311	232	543
5:00 PM	332	260	592
6:00 PM	204	205	409
7:00 PM	141	121	262
8:00 PM	90	82	172
9:00 PM	64	44	108
10:00 PM	30	23	53
11:00 PM	14	8	22



**AM Peak**    531                      **Mid-day Peak**    372                      **PM Peak**    604  
                   7:45 AM                                      12:15 PM                                      4:45 PM

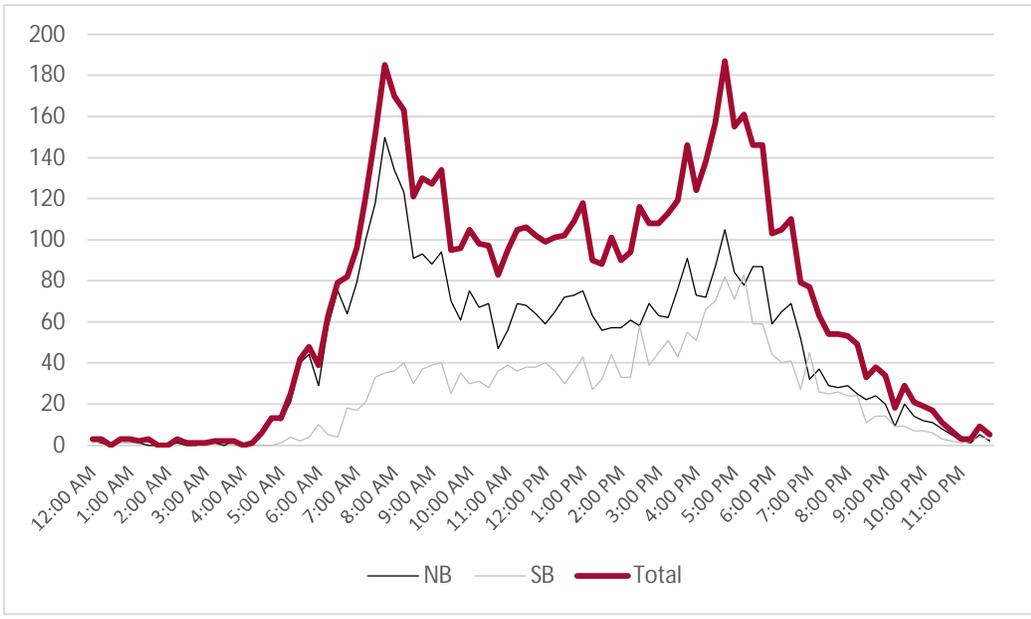
2,981    Eastbound  
2,758    Westbound  
**5,739**    Total of Both Directions

## Belinder Avenue Low Water Crossing Traffic Study Mission Hills, Kansas

Location: State Line Road, South of 55th Street  
Date: Tuesday, March 28, 2023

Time	NB	SB	Total	Time	NB	SB	Total	Time	NB	SB	Total	Time	NB	SB	Total	Time	NB	SB	Total
12:00 AM	2	1	3	5:00 AM	12	1	13	10:00 AM	75	30	105	3:00 PM	63	45	108	8:00 PM	29	24	53
12:15 AM	1	2	3	5:15 AM	21	4	25	10:15 AM	67	31	98	3:15 PM	62	51	113	8:15 PM	25	24	49
12:30 AM	0	0	0	5:30 AM	40	2	42	10:30 AM	69	28	97	3:30 PM	76	43	119	8:30 PM	22	11	33
12:45 AM	2	1	3	5:45 AM	44	4	48	10:45 AM	47	36	83	3:45 PM	91	55	146	8:45 PM	24	14	38
1:00 AM	2	1	3	6:00 AM	29	10	39	11:00 AM	56	39	95	4:00 PM	73	51	124	9:00 PM	20	14	34
1:15 AM	1	1	2	6:15 AM	58	5	63	11:15 AM	69	36	105	4:15 PM	72	66	138	9:15 PM	9	9	18
1:30 AM	0	3	3	6:30 AM	75	4	79	11:30 AM	68	38	106	4:30 PM	87	70	157	9:30 PM	20	9	29
1:45 AM	0	0	0	6:45 AM	64	18	82	11:45 AM	64	38	102	4:45 PM	105	82	187	9:45 PM	14	7	21
2:00 AM	0	0	0	7:00 AM	79	17	96	12:00 PM	59	40	99	5:00 PM	84	71	155	10:00 PM	12	7	19
2:15 AM	1	2	3	7:15 AM	100	21	121	12:15 PM	65	36	101	5:15 PM	78	83	161	10:15 PM	11	6	17
2:30 AM	0	1	1	7:30 AM	118	33	151	12:30 PM	72	30	102	5:30 PM	87	59	146	10:30 PM	8	3	11
2:45 AM	0	1	1	7:45 AM	150	35	185	12:45 PM	73	36	109	5:45 PM	87	59	146	10:45 PM	5	2	7
3:00 AM	1	0	1	8:00 AM	134	36	170	1:00 PM	75	43	118	6:00 PM	59	44	103	11:00 PM	2	1	3
3:15 AM	1	1	2	8:15 AM	123	40	163	1:15 PM	63	27	90	6:15 PM	65	40	105	11:15 PM	1	2	3
3:30 AM	0	2	2	8:30 AM	91	30	121	1:30 PM	56	32	88	6:30 PM	69	41	110	11:30 PM	5	4	9
3:45 AM	2	0	2	8:45 AM	93	37	130	1:45 PM	57	44	101	6:45 PM	52	27	79	11:45 PM	2	3	5
4:00 AM	0	0	0	9:00 AM	88	39	127	2:00 PM	57	33	90	7:00 PM	32	45	77				
4:15 AM	1	0	1	9:15 AM	94	40	134	2:15 PM	61	33	94	7:15 PM	37	26	63				
4:30 AM	6	0	6	9:30 AM	70	25	95	2:30 PM	58	58	116	7:30 PM	29	25	54				
4:45 AM	13	0	13	9:45 AM	61	35	96	2:45 PM	69	39	108	7:45 PM	28	26	54				

Hourly	NB	SB	Total
12:00 AM	5	4	9
1:00 AM	3	5	8
2:00 AM	1	4	5
3:00 AM	4	3	7
4:00 AM	20	0	20
5:00 AM	117	11	128
6:00 AM	226	37	263
7:00 AM	447	106	553
8:00 AM	441	143	584
9:00 AM	313	139	452
10:00 AM	258	125	383
11:00 AM	257	151	408
12:00 PM	269	142	411
1:00 PM	251	146	397
2:00 PM	245	163	408
3:00 PM	292	194	486
4:00 PM	337	269	606
5:00 PM	336	272	608
6:00 PM	245	152	397
7:00 PM	126	122	248
8:00 PM	100	73	173
9:00 PM	63	39	102
10:00 PM	36	18	54
11:00 PM	10	10	20



**AM Peak** 669  
7:30 AM

**Mid-day Peak** 430  
12:15 PM

**PM Peak** 660  
4:30 PM

---

4,402 Northbound  
2,328 Southbound  
**6,730 Total of Both Directions**



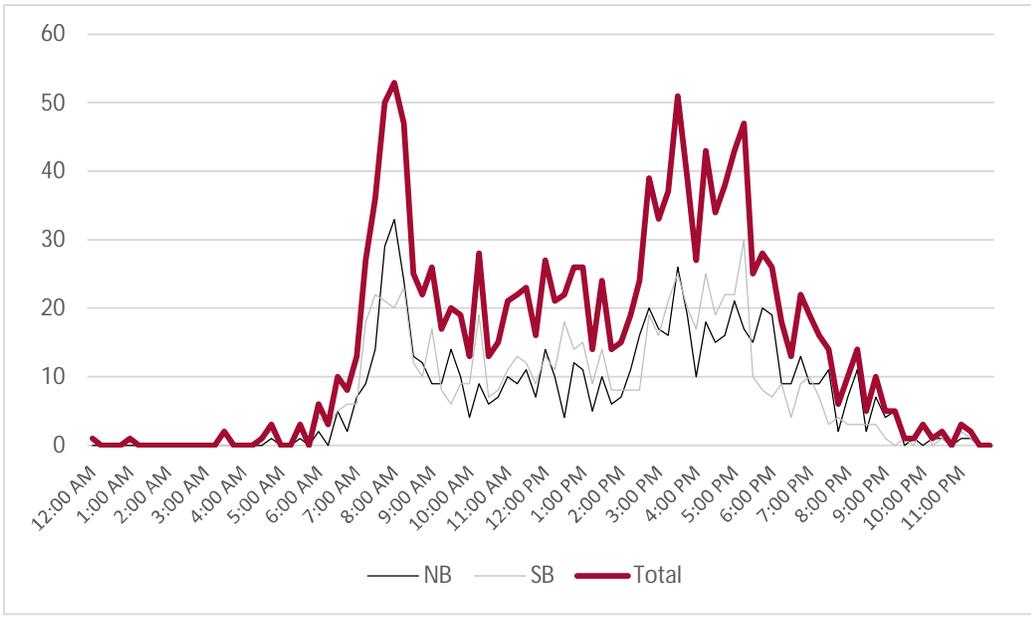
# Belinder Avenue Low Water Crossing Traffic Study

## Mission Hills, Kansas

Location: Belinder Avenue, south of State Park Road  
 Date: Tuesday, March 28, 2023

Time	NB	SB	Total	Time	NB	SB	Total	Time	NB	SB	Total	Time	NB	SB	Total	Time	NB	SB	Total
12:00 AM	0	1	1	5:00 AM	0	0	0	10:00 AM	4	9	13	3:00 PM	17	16	33	8:00 PM	7	3	10
12:15 AM	0	0	0	5:15 AM	0	0	0	10:15 AM	9	19	28	3:15 PM	16	21	37	8:15 PM	11	3	14
12:30 AM	0	0	0	5:30 AM	1	2	3	10:30 AM	6	7	13	3:30 PM	26	25	51	8:30 PM	2	3	5
12:45 AM	0	0	0	5:45 AM	0	0	0	10:45 AM	7	8	15	3:45 PM	19	20	39	8:45 PM	7	3	10
1:00 AM	0	1	1	6:00 AM	2	4	6	11:00 AM	10	11	21	4:00 PM	10	17	27	9:00 PM	4	1	5
1:15 AM	0	0	0	6:15 AM	0	3	3	11:15 AM	9	13	22	4:15 PM	18	25	43	9:15 PM	5	0	5
1:30 AM	0	0	0	6:30 AM	5	5	10	11:30 AM	11	12	23	4:30 PM	15	19	34	9:30 PM	0	1	1
1:45 AM	0	0	0	6:45 AM	2	6	8	11:45 AM	7	9	16	4:45 PM	16	22	38	9:45 PM	1	0	1
2:00 AM	0	0	0	7:00 AM	7	6	13	12:00 PM	14	13	27	5:00 PM	21	22	43	10:00 PM	0	3	3
2:15 AM	0	0	0	7:15 AM	9	18	27	12:15 PM	10	11	21	5:15 PM	17	30	47	10:15 PM	1	0	1
2:30 AM	0	0	0	7:30 AM	14	22	36	12:30 PM	4	18	22	5:30 PM	15	10	25	10:30 PM	1	1	2
2:45 AM	0	0	0	7:45 AM	29	21	50	12:45 PM	12	14	26	5:45 PM	20	8	28	10:45 PM	0	0	0
3:00 AM	0	0	0	8:00 AM	33	20	53	1:00 PM	11	15	26	6:00 PM	19	7	26	11:00 PM	1	2	3
3:15 AM	0	0	0	8:15 AM	24	23	47	1:15 PM	5	9	14	6:15 PM	9	9	18	11:15 PM	1	1	2
3:30 AM	2	0	2	8:30 AM	13	12	25	1:30 PM	10	14	24	6:30 PM	9	4	13	11:30 PM	0	0	0
3:45 AM	0	0	0	8:45 AM	12	10	22	1:45 PM	6	8	14	6:45 PM	13	9	22	11:45 PM	0	0	0
4:00 AM	0	0	0	9:00 AM	9	17	26	2:00 PM	7	8	15	7:00 PM	9	10	19				
4:15 AM	0	0	0	9:15 AM	9	8	17	2:15 PM	11	8	19	7:15 PM	9	7	16				
4:30 AM	0	1	1	9:30 AM	14	6	20	2:30 PM	16	8	24	7:30 PM	11	3	14				
4:45 AM	1	2	3	9:45 AM	10	9	19	2:45 PM	20	19	39	7:45 PM	2	4	6				

Hourly	NB	SB	Total
12:00 AM	0	1	1
1:00 AM	0	1	1
2:00 AM	0	0	0
3:00 AM	2	0	2
4:00 AM	1	3	4
5:00 AM	1	2	3
6:00 AM	9	18	27
7:00 AM	59	67	126
8:00 AM	82	65	147
9:00 AM	42	40	82
10:00 AM	26	43	69
11:00 AM	37	45	82
12:00 PM	40	56	96
1:00 PM	32	46	78
2:00 PM	54	43	97
3:00 PM	78	82	160
4:00 PM	59	83	142
5:00 PM	73	70	143
6:00 PM	50	29	79
7:00 PM	31	24	55
8:00 PM	27	12	39
9:00 PM	10	2	12
10:00 PM	2	4	6
11:00 PM	2	3	5



**AM Peak** 186  
7:30 AM

**Mid-day Peak** 96  
12:00 PM

**PM Peak** 162  
4:30 PM

---

717 Northbound  
739 Southbound

---

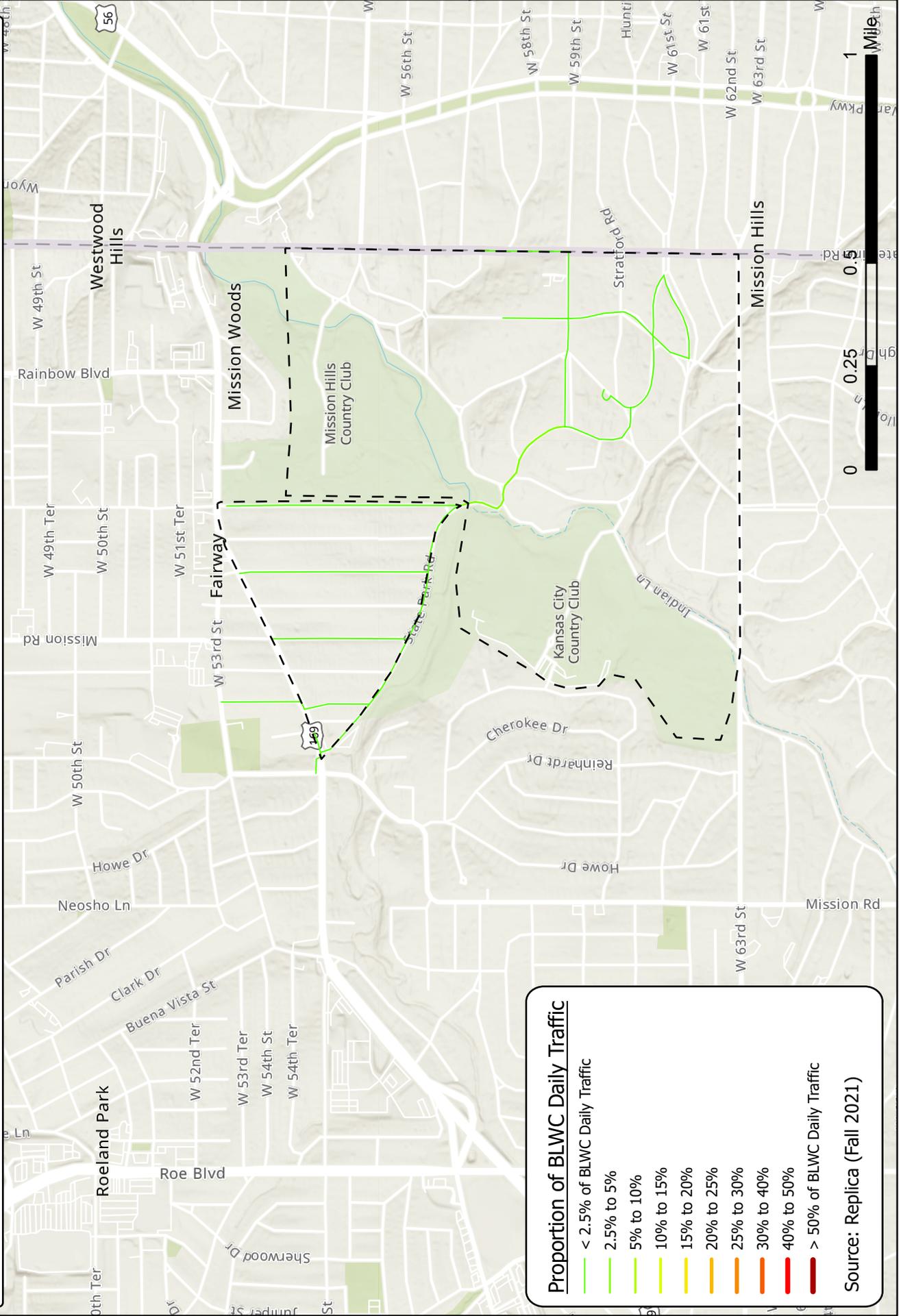
**1,456 Total of Both Directions**



# Appendix D: Replica Model Outputs

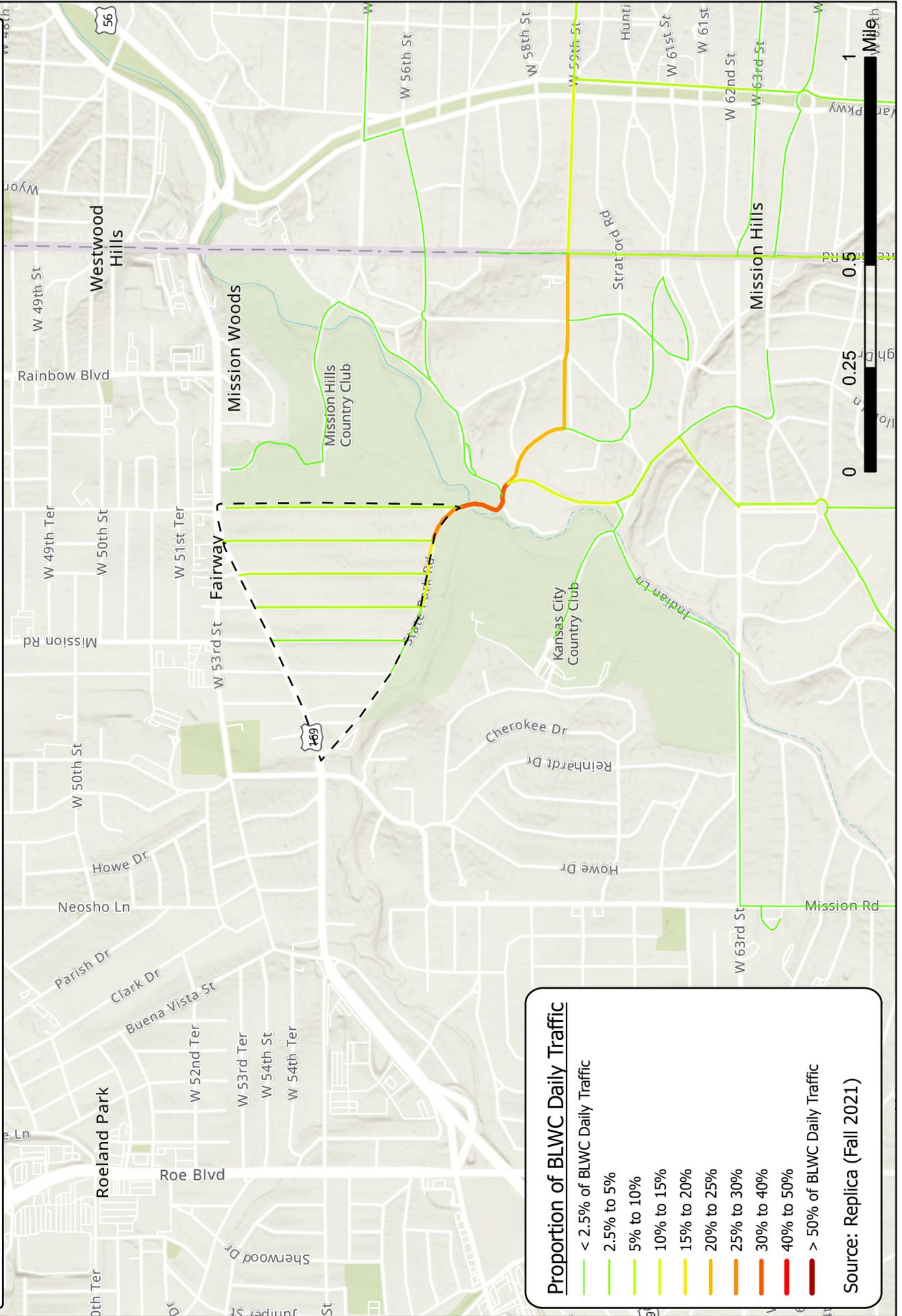


# BLWC Traffic: Trips Starting and Ending in Local Neighborhoods





# BLWC Traffic: Trips Ending in Neighborhood to North





# Appendix E: Synchro Capacity Analysis Reports

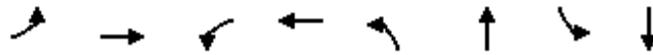


Queues

Existing (2023) Traffic Volumes

1: Mission Road & 63rd Street

AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	51	267	49	168	45	375	28	274
v/c Ratio	0.10	0.51	0.11	0.32	0.09	0.58	0.07	0.42
Control Delay	12.1	20.8	12.2	18.6	10.5	19.5	10.5	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.1	20.8	12.2	18.6	10.5	19.5	10.5	16.9
Queue Length 50th (ft)	6	54	6	32	8	80	5	54
Queue Length 95th (ft)	35	174	34	111	27	226	19	160
Internal Link Dist (ft)		1018		3863		697		3913
Turn Bay Length (ft)	60		100		60		70	
Base Capacity (vph)	507	1173	447	1189	493	1405	434	1400
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.23	0.11	0.14	0.09	0.27	0.06	0.20

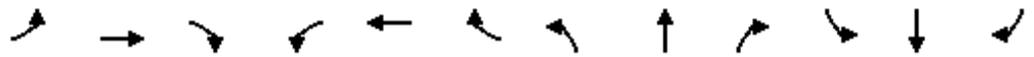
Intersection Summary

# HCM 6th Signalized Intersection Summary

# Existing (2023) Traffic Volumes

## 1: Mission Road & 63rd Street

AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	188	60	46	131	25	42	328	20	26	234	20
Future Volume (veh/h)	47	188	60	46	131	25	42	328	20	26	234	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	1856	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	51	202	65	49	141	27	45	353	22	28	252	22
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	3	2	2	2	2	2	2	2	2	2
Cap, veh/h	450	303	97	371	338	65	431	506	32	351	466	41
Arrive On Green	0.05	0.22	0.22	0.05	0.22	0.22	0.05	0.29	0.29	0.03	0.27	0.27
Sat Flow, veh/h	1781	1356	436	1781	1526	292	1781	1742	109	1781	1696	148
Grp Volume(v), veh/h	51	0	267	49	0	168	45	0	375	28	0	274
Grp Sat Flow(s),veh/h/ln	1781	0	1792	1781	0	1818	1781	0	1851	1781	0	1844
Q Serve(g_s), s	0.9	0.0	5.4	0.8	0.0	3.2	0.7	0.0	7.2	0.4	0.0	5.1
Cycle Q Clear(g_c), s	0.9	0.0	5.4	0.8	0.0	3.2	0.7	0.0	7.2	0.4	0.0	5.1
Prop In Lane	1.00		0.24	1.00		0.16	1.00		0.06	1.00		0.08
Lane Grp Cap(c), veh/h	450	0	400	371	0	403	431	0	538	351	0	507
V/C Ratio(X)	0.11	0.00	0.67	0.13	0.00	0.42	0.10	0.00	0.70	0.08	0.00	0.54
Avail Cap(c_a), veh/h	621	0	1165	545	0	1182	611	0	1666	558	0	1660
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(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.9	0.0	14.2	11.2	0.0	13.3	9.7	0.0	12.6	10.3	0.0	12.4
Incr Delay (d2), s/veh	0.1	0.0	1.9	0.2	0.0	0.7	0.1	0.0	1.6	0.1	0.0	0.9
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(95%),veh/ln	0.5	0.0	3.7	0.5	0.0	2.1	0.4	0.0	4.7	0.3	0.0	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.0	0.0	16.1	11.4	0.0	14.0	9.8	0.0	14.3	10.4	0.0	13.3
LnGrp LOS	B	A	B	B	A	B	A	A	B	B	A	B
Approach Vol, veh/h		318			217			420			302	
Approach Delay, s/veh		15.3			13.4			13.8			13.0	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.3	15.6	6.1	12.9	6.0	15.0	6.2	12.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	6.0	36.0	6.0	26.0	6.0	36.0	6.0	26.0				
Max Q Clear Time (g_c+I1), s	2.4	9.2	2.8	7.4	2.7	7.1	2.9	5.2				
Green Ext Time (p_c), s	0.0	2.4	0.0	1.5	0.0	1.7	0.0	0.9				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				13.9								
HCM 6th LOS				B								

HCM 6th TWSC  
2: Overhill Road/Belinder Avenue & 63rd Street

Existing (2023) Traffic Volumes  
AM Peak Hour

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	1	212	19	7	151	1	37	9	22	2	12	2
Future Vol, veh/h	1	212	19	7	151	1	37	9	22	2	12	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	3	2	2	50	2	2
Mvmt Flow	1	228	20	8	162	1	40	10	24	2	13	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	163	0	0	248	0	0	426	419	238	436	429	163
Stage 1	-	-	-	-	-	-	240	240	-	179	179	-
Stage 2	-	-	-	-	-	-	186	179	-	257	250	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.13	6.52	6.22	7.6	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.52	-	6.6	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.52	-	6.6	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.527	4.018	3.318	3.95	4.018	3.318
Pot Cap-1 Maneuver	1416	-	-	1318	-	-	537	525	801	457	518	882
Stage 1	-	-	-	-	-	-	761	707	-	723	751	-
Stage 2	-	-	-	-	-	-	813	751	-	653	700	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1416	-	-	1318	-	-	523	521	801	435	514	882
Mov Cap-2 Maneuver	-	-	-	-	-	-	523	521	-	435	514	-
Stage 1	-	-	-	-	-	-	760	706	-	722	746	-
Stage 2	-	-	-	-	-	-	791	746	-	624	699	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.3			12			12		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	589	1416	-	-	1318	-	-	530
HCM Lane V/C Ratio	0.124	0.001	-	-	0.006	-	-	0.032
HCM Control Delay (s)	12	7.5	0	-	7.7	0	-	12
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.1

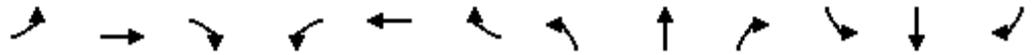
Queues  
3: State Line Road & 63rd Street

Existing (2023) Traffic Volumes  
AM Peak Hour

	→	←	↑	↓
Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	202	133	420	175
v/c Ratio	0.40	0.25	0.50	0.22
Control Delay	12.0	9.8	8.9	6.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.0	9.8	8.9	6.4
Queue Length 50th (ft)	22	13	41	15
Queue Length 95th (ft)	73	48	108	44
Internal Link Dist (ft)	2403	861	551	2082
Turn Bay Length (ft)				
Base Capacity (vph)	1592	1658	1831	1774
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.13	0.08	0.23	0.10
<b>Intersection Summary</b>				

HCM 6th Signalized Intersection Summary  
 3: State Line Road & 63rd Street

Existing (2023) Traffic Volumes  
 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	32	146	10	6	97	21	5	344	42	12	141	9
Future Volume (veh/h)	32	146	10	6	97	21	5	344	42	12	141	9
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	1752	1870	1870	1870	1870	1870	1870	1781	1870	1870
Adj Flow Rate, veh/h	34	157	11	6	104	23	5	370	45	13	152	10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	10	2	2	2	2	2	2	8	2	2
Cap, veh/h	241	315	21	185	311	67	173	666	80	201	676	42
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	203	1457	96	43	1439	310	7	1628	196	50	1653	103
Grp Volume(v), veh/h	202	0	0	133	0	0	420	0	0	175	0	0
Grp Sat Flow(s),veh/h/ln	1756	0	0	1792	0	0	1831	0	0	1806	0	0
Q Serve(g_s), s	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.1	0.0	0.0	1.3	0.0	0.0	3.7	0.0	0.0	1.3	0.0	0.0
Prop In Lane	0.17		0.05	0.05		0.17	0.01		0.11	0.07		0.06
Lane Grp Cap(c), veh/h	577	0	0	564	0	0	920	0	0	920	0	0
V/C Ratio(X)	0.35	0.00	0.00	0.24	0.00	0.00	0.46	0.00	0.00	0.19	0.00	0.00
Avail Cap(c_a), veh/h	2695	0	0	2753	0	0	4528	0	0	4350	0	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	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.4	0.0	0.0	7.1	0.0	0.0	4.8	0.0	0.0	4.1	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.2	0.0	0.0	0.4	0.0	0.0	0.1	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(95%),veh/ln	0.9	0.0	0.0	0.5	0.0	0.0	0.8	0.0	0.0	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.7	0.0	0.0	7.3	0.0	0.0	5.2	0.0	0.0	4.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		202			133			420				175
Approach Delay, s/veh		7.7			7.3			5.2				4.2
Approach LOS		A			A			A				A
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		12.7		8.6		12.7		8.6				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		51.0		31.0		51.0		31.0				
Max Q Clear Time (g_c+I1), s		5.7		4.1		3.3		3.3				
Green Ext Time (p_c), s		3.0		1.2		1.1		0.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				5.9								
HCM 6th LOS				A								

HCM 6th TWSC  
4: State Line Road & 59th Street

Existing (2023) Traffic Volumes  
AM Peak Hour

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	32	12	5	27	19	11	358	35	5	132	3
Future Vol, veh/h	3	32	12	5	27	19	11	358	35	5	132	3
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									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	3	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	34	13	5	29	20	12	385	38	5	142	3

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	607	601	144	605	583	404	145	0	0	423	0	0
Stage 1	154	154	-	428	428	-	-	-	-	-	-	-
Stage 2	453	447	-	177	155	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.53	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.53	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.53	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.027	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	408	413	903	410	424	647	1437	-	-	1136	-	-
Stage 1	848	768	-	605	585	-	-	-	-	-	-	-
Stage 2	586	572	-	825	769	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	370	406	903	374	417	647	1437	-	-	1136	-	-
Mov Cap-2 Maneuver	370	406	-	374	417	-	-	-	-	-	-	-
Stage 1	839	764	-	598	579	-	-	-	-	-	-	-
Stage 2	533	566	-	773	765	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.6		13.6		0.2		0.3	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1437	-	-	469	474	1136	-
HCM Lane V/C Ratio	0.008	-	-	0.108	0.116	0.005	-
HCM Control Delay (s)	7.5	0	-	13.6	13.6	8.2	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.4	0.4	0	-

Queues  
5: State Line Road & 55th Street

Existing (2023) Traffic Volumes  
AM Peak Hour

	→	←	↑	↓
Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	40	192	556	150
v/c Ratio	0.11	0.42	0.55	0.16
Control Delay	11.0	7.4	7.6	4.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.0	7.4	7.6	4.6
Queue Length 50th (ft)	4	4	45	10
Queue Length 95th (ft)	23	43	126	31
Internal Link Dist (ft)	303	501	2569	2061
Turn Bay Length (ft)				
Base Capacity (vph)	1321	1239	1840	1753
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.03	0.15	0.30	0.09
<b>Intersection Summary</b>				

HCM 6th Signalized Intersection Summary  
5: State Line Road & 55th Street

Existing (2023) Traffic Volumes  
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	3	31	4	14	22	142	3	472	42	15	125	0
Future Volume (veh/h)	3	31	4	14	22	142	3	472	42	15	125	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	1856	1856	1856	1767	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	33	4	15	24	153	3	508	45	16	134	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	3	3	3	9	2	2	2	2	2	2	2
Cap, veh/h	170	301	35	172	46	235	148	813	72	193	832	0
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.48	0.48	0.48	0.48	0.48	0.00
Sat Flow, veh/h	65	1551	180	71	238	1213	2	1691	149	64	1730	0
Grp Volume(v), veh/h	40	0	0	192	0	0	556	0	0	150	0	0
Grp Sat Flow(s),veh/h/ln	1796	0	0	1522	0	0	1842	0	0	1794	0	0
Q Serve(g_s), s	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.4	0.0	0.0	2.8	0.0	0.0	5.5	0.0	0.0	1.1	0.0	0.0
Prop In Lane	0.07		0.10	0.08		0.80	0.01		0.08	0.11		0.00
Lane Grp Cap(c), veh/h	505	0	0	453	0	0	1033	0	0	1025	0	0
V/C Ratio(X)	0.08	0.00	0.00	0.42	0.00	0.00	0.54	0.00	0.00	0.15	0.00	0.00
Avail Cap(c_a), veh/h	1948	0	0	1694	0	0	4413	0	0	4077	0	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(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.2	0.0	0.0	9.1	0.0	0.0	4.7	0.0	0.0	3.6	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.6	0.0	0.0	0.4	0.0	0.0	0.1	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(95%),veh/ln	0.2	0.0	0.0	1.3	0.0	0.0	1.2	0.0	0.0	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.2	0.0	0.0	9.8	0.0	0.0	5.2	0.0	0.0	3.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		40			192			556			150	
Approach Delay, s/veh		8.2			9.8			5.2			3.7	
Approach LOS		A			A			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.8		8.8		15.8		8.8				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		57.0		25.0		57.0		25.0				
Max Q Clear Time (g_c+I1), s		7.5		2.4		3.1		4.8				
Green Ext Time (p_c), s		4.3		0.1		1.0		1.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				6.0								
HCM 6th LOS				A								

Queues  
6: State Line Road & Shawnee Mission Parkway

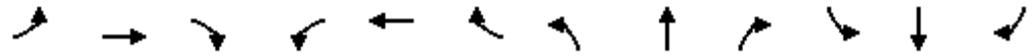
Existing (2023) Traffic Volumes  
AM Peak Hour



Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	62	1471	605	361	303	46	119
v/c Ratio	0.16	0.81	0.41	0.67	0.42	0.36	0.52
Control Delay	13.2	23.5	19.9	30.8	24.2	51.0	47.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.2	23.5	19.9	30.8	24.2	51.0	47.0
Queue Length 50th (ft)	19	383	137	166	130	27	63
Queue Length 95th (ft)	43	531	198	303	242	70	134
Internal Link Dist (ft)		1240	1383		2061		670
Turn Bay Length (ft)	140			240		140	
Base Capacity (vph)	376	2478	2018	573	973	233	399
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.59	0.30	0.63	0.31	0.20	0.30
<b>Intersection Summary</b>							

HCM 6th Signalized Intersection Summary  
6: State Line Road & Shawnee Mission Parkway

Existing (2023) Traffic Volumes  
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗			↖		↖	↗		↖	↗	
Traffic Volume (veh/h)	58	1287	81	1	539	22	336	251	31	43	81	30
Future Volume (veh/h)	58	1287	81	1	539	22	336	251	31	43	81	30
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	1841	1870	1870	1870	1870	1870	1856
Adj Flow Rate, veh/h	62	1384	87	1	580	24	361	270	33	46	87	32
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	4	2	2	2	2	2	3
Cap, veh/h	439	1815	114	48	1473	61	509	587	72	203	130	48
Arrive On Green	0.05	0.53	0.53	0.43	0.43	0.43	0.21	0.36	0.36	0.10	0.10	0.10
Sat Flow, veh/h	1781	3396	213	1	3403	140	1781	1635	200	1076	1304	480
Grp Volume(v), veh/h	62	722	749	319	0	286	361	0	303	46	0	119
Grp Sat Flow(s),veh/h/ln	1781	1777	1832	1868	0	1677	1781	0	1834	1076	0	1784
Q Serve(g_s), s	1.3	24.0	24.2	0.0	0.0	8.8	12.8	0.0	9.5	3.0	0.0	4.8
Cycle Q Clear(g_c), s	1.3	24.0	24.2	8.8	0.0	8.8	12.8	0.0	9.5	3.0	0.0	4.8
Prop In Lane	1.00		0.12	0.00		0.08	1.00		0.11	1.00		0.27
Lane Grp Cap(c), veh/h	439	949	979	856	0	726	509	0	659	203	0	177
V/C Ratio(X)	0.14	0.76	0.76	0.37	0.00	0.39	0.71	0.00	0.46	0.23	0.00	0.67
Avail Cap(c_a), veh/h	484	1512	1559	1395	0	1215	713	0	1171	379	0	470
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(l)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.3	13.7	13.8	14.6	0.0	14.6	21.4	0.0	18.5	31.9	0.0	32.7
Incr Delay (d2), s/veh	0.1	1.3	1.3	0.3	0.0	0.3	1.9	0.0	0.5	0.6	0.0	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.9	13.2	13.6	6.2	0.0	5.6	9.0	0.0	7.0	1.5	0.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.4	15.0	15.1	14.8	0.0	14.9	23.4	0.0	19.0	32.4	0.0	37.0
LnGrp LOS	B	B	B	B	A	B	C	A	B	C	A	D
Approach Vol, veh/h		1533			605			664				165
Approach Delay, s/veh		14.9			14.9			21.4				35.7
Approach LOS		B			B			C				D
Timer - Assigned Phs		2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s		31.0		44.2	19.6	11.5	7.6	36.6				
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s		48.0		64.0	24.2	19.8	5.5	54.5				
Max Q Clear Time (g_c+I1), s		11.5		26.2	14.8	6.8	3.3	10.8				
Green Ext Time (p_c), s		2.0		14.0	0.8	0.6	0.0	4.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				17.5								
HCM 6th LOS				B								

Intersection						
Int Delay, s/veh	1.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	15	6	61	38	18	71
Future Vol, veh/h	15	6	61	38	18	71
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	6	3
Mvmt Flow	16	6	66	41	19	76

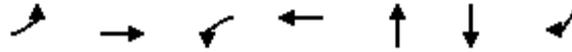
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	201	87	0	0	107	0
Stage 1	87	-	-	-	-	-
Stage 2	114	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.16	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.254	-
Pot Cap-1 Maneuver	788	971	-	-	1459	-
Stage 1	936	-	-	-	-	-
Stage 2	911	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	777	971	-	-	1459	-
Mov Cap-2 Maneuver	777	-	-	-	-	-
Stage 1	936	-	-	-	-	-
Stage 2	898	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	1.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	824	1459
HCM Lane V/C Ratio	-	-	0.027	0.013
HCM Control Delay (s)	-	-	9.5	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

Queues  
8: Belinder Avenue & Shawnee Mission Parkway

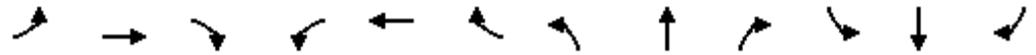
Existing (2023) Traffic Volumes  
AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	160	1819	1	1039	77	96	112
v/c Ratio	0.38	0.74	0.00	0.58	0.28	0.41	0.32
Control Delay	6.0	9.8	4.0	12.6	33.2	38.4	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.0	9.8	4.0	12.6	33.2	38.4	10.7
Queue Length 50th (ft)	16	183	0	144	25	35	0
Queue Length 95th (ft)	44	517	1	237	95	122	51
Internal Link Dist (ft)		2716		1247	2825	855	
Turn Bay Length (ft)	130		120				90
Base Capacity (vph)	460	3316	242	3227	538	468	578
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.55	0.00	0.32	0.14	0.21	0.19
<b>Intersection Summary</b>							

HCM 6th Signalized Intersection Summary  
 8: Belinder Avenue & Shawnee Mission Parkway

Existing (2023) Traffic Volumes  
 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	1687	5	1	911	55	22	39	10	72	18	104
Future Volume (veh/h)	149	1687	5	1	911	55	22	39	10	72	18	104
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	1826	1870	1870	1870	1870	1811	1870	1870	1752	1870	1811	1811
Adj Flow Rate, veh/h	160	1814	5	1	980	59	24	42	11	77	19	112
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	2	2	2	2	6	2	2	10	2	6	6
Cap, veh/h	493	2553	7	218	2149	129	102	109	23	232	43	171
Arrive On Green	0.07	0.70	0.70	0.00	0.63	0.63	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1739	3635	10	1781	3405	205	266	976	207	1181	385	1535
Grp Volume(v), veh/h	160	886	933	1	511	528	77	0	0	96	0	112
Grp Sat Flow(s),veh/h/ln	1739	1777	1869	1781	1777	1833	1449	0	0	1566	0	1535
Q Serve(g_s), s	1.7	19.3	19.3	0.0	9.7	9.7	0.3	0.0	0.0	0.0	0.0	4.5
Cycle Q Clear(g_c), s	1.7	19.3	19.3	0.0	9.7	9.7	3.6	0.0	0.0	3.4	0.0	4.5
Prop In Lane	1.00		0.01	1.00		0.11	0.31		0.14	0.80		1.00
Lane Grp Cap(c), veh/h	493	1248	1312	218	1121	1157	235	0	0	275	0	171
V/C Ratio(X)	0.32	0.71	0.71	0.00	0.46	0.46	0.33	0.00	0.00	0.35	0.00	0.65
Avail Cap(c_a), veh/h	644	2214	2328	366	2080	2146	583	0	0	578	0	508
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(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.0	5.7	5.7	6.0	6.2	6.2	26.9	0.0	0.0	27.1	0.0	27.7
Incr Delay (d2), s/veh	0.4	0.8	0.7	0.0	0.3	0.3	0.8	0.0	0.0	0.8	0.0	4.2
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(95%),veh/ln	0.6	7.7	8.0	0.0	4.7	4.9	2.0	0.0	0.0	2.5	0.0	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.4	6.5	6.5	6.1	6.5	6.5	27.7	0.0	0.0	27.9	0.0	31.8
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	C
Approach Vol, veh/h		1979			1040			77				208
Approach Delay, s/veh		6.3			6.5			27.7				30.0
Approach LOS		A			A			C				C
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		11.3	4.1	49.7		11.3	8.7	45.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		21.5	5.5	81.0		21.5	10.4	76.1				
Max Q Clear Time (g_c+I1), s		5.6	2.0	21.3		6.5	3.7	11.7				
Green Ext Time (p_c), s		0.3	0.0	24.4		0.8	0.2	8.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			8.4									
HCM 6th LOS			A									

Queues  
9: Mission Road & Shawnee Mission Parkway

Existing (2023) Traffic Volumes  
AM Peak Hour

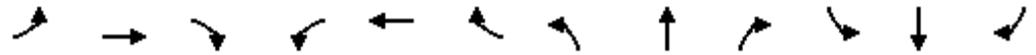


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	67	1700	114	1003	44	158	296	122	206
v/c Ratio	0.19	0.87	0.56	0.48	0.20	0.57	0.65	0.51	0.61
Control Delay	8.0	26.1	25.5	13.5	34.3	50.8	36.9	42.2	42.6
Queue Delay	0.0	0.0	0.2	6.2	0.0	0.0	0.0	0.0	0.0
Total Delay	8.0	26.1	25.7	19.7	34.3	50.8	36.9	42.2	42.6
Queue Length 50th (ft)	13	477	24	193	25	106	161	71	115
Queue Length 95th (ft)	34	701	90	287	55	175	255	124	196
Internal Link Dist (ft)		438		119		1367			964
Turn Bay Length (ft)	220		220		110		150	60	
Base Capacity (vph)	346	2236	227	2309	217	456	472	238	460
Starvation Cap Reductn	0	0	6	1241	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.76	0.52	0.94	0.20	0.35	0.63	0.51	0.45

Intersection Summary

HCM 6th Signalized Intersection Summary  
 9: Mission Road & Shawnee Mission Parkway

Existing (2023) Traffic Volumes  
 AM Peak Hour



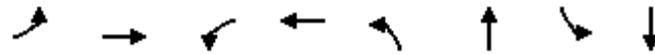
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	1558	23	106	888	45	41	147	275	113	98	94
Future Volume (veh/h)	62	1558	23	106	888	45	41	147	275	113	98	94
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1856	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	67	1675	25	114	955	48	44	158	296	122	105	101
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	3	2	2	2	2	2	2	2
Cap, veh/h	350	1939	29	191	1866	94	271	375	391	293	197	190
Arrive On Green	0.04	0.54	0.54	0.05	0.55	0.55	0.03	0.20	0.20	0.06	0.23	0.23
Sat Flow, veh/h	1781	3584	53	1781	3416	172	1781	1870	1585	1781	876	843
Grp Volume(v), veh/h	67	829	871	114	493	510	44	158	296	122	0	206
Grp Sat Flow(s),veh/h/ln	1781	1777	1861	1781	1763	1825	1781	1870	1585	1781	0	1719
Q Serve(g_s), s	1.7	42.0	42.3	3.0	18.4	18.4	2.0	7.7	18.1	5.7	0.0	11.0
Cycle Q Clear(g_c), s	1.7	42.0	42.3	3.0	18.4	18.4	2.0	7.7	18.1	5.7	0.0	11.0
Prop In Lane	1.00		0.03	1.00		0.09	1.00		1.00	1.00		0.49
Lane Grp Cap(c), veh/h	350	961	1006	191	963	997	271	375	391	293	0	387
V/C Ratio(X)	0.19	0.86	0.87	0.60	0.51	0.51	0.16	0.42	0.76	0.42	0.00	0.53
Avail Cap(c_a), veh/h	379	1087	1138	262	1129	1168	305	443	449	293	0	417
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(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.2	20.7	20.7	22.3	15.0	15.0	31.7	36.5	36.5	30.7	0.0	35.7
Incr Delay (d2), s/veh	0.3	6.7	6.6	3.0	0.4	0.4	0.3	0.8	6.3	0.9	0.0	1.1
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(95%),veh/ln	1.2	24.6	25.7	2.9	11.3	11.7	1.6	6.5	12.0	4.5	0.0	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.5	27.4	27.3	25.3	15.4	15.4	32.0	37.3	42.8	31.6	0.0	36.8
LnGrp LOS	B	C	C	C	B	B	C	D	D	C	A	D
Approach Vol, veh/h		1767			1117			498			328	
Approach Delay, s/veh		26.7			16.4			40.1			34.9	
Approach LOS		C			B			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.2	25.0	8.9	60.6	7.6	27.6	8.3	61.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	6.2	24.8	9.0	64.0	5.6	25.4	6.0	67.0				
Max Q Clear Time (g_c+I1), s	7.7	20.1	5.0	44.3	4.0	13.0	3.7	20.4				
Green Ext Time (p_c), s	0.0	0.9	0.1	12.3	0.0	0.9	0.0	7.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				26.1								
HCM 6th LOS				C								

## Queues

## Existing (2023) Traffic Volumes

## 1: Mission Road &amp; 63rd Street

PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	21	239	32	237	50	325	19	373
v/c Ratio	0.05	0.47	0.08	0.42	0.11	0.41	0.04	0.57
Control Delay	13.6	21.0	13.6	18.3	8.9	12.9	8.8	18.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.6	21.0	13.6	18.3	8.9	12.9	8.8	18.6
Queue Length 50th (ft)	4	52	7	52	5	39	2	78
Queue Length 95th (ft)	19	156	25	156	28	183	14	216
Internal Link Dist (ft)		1018		3863		697		3913
Turn Bay Length (ft)	60		100		60		70	
Base Capacity (vph)	440	1132	431	1143	470	1438	534	1437
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.21	0.07	0.21	0.11	0.23	0.04	0.26

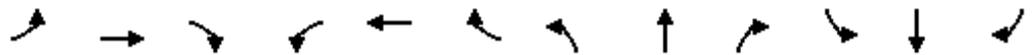
## Intersection Summary

# HCM 6th Signalized Intersection Summary

# Existing (2023) Traffic Volumes

## 1: Mission Road & 63rd Street

PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	186	43	31	195	33	48	284	28	18	330	28
Future Volume (veh/h)	20	186	43	31	195	33	48	284	28	18	330	28
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	1841
Adj Flow Rate, veh/h	21	194	45	32	203	34	50	296	29	19	344	29
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	4
Cap, veh/h	345	301	70	347	338	57	396	541	53	415	499	42
Arrive On Green	0.03	0.20	0.20	0.04	0.22	0.22	0.05	0.32	0.32	0.02	0.29	0.29
Sat Flow, veh/h	1781	1468	341	1781	1562	262	1781	1677	164	1781	1701	143
Grp Volume(v), veh/h	21	0	239	32	0	237	50	0	325	19	0	373
Grp Sat Flow(s),veh/h/ln	1781	0	1809	1781	0	1823	1781	0	1841	1781	0	1845
Q Serve(g_s), s	0.4	0.0	4.7	0.5	0.0	4.6	0.7	0.0	5.7	0.3	0.0	7.0
Cycle Q Clear(g_c), s	0.4	0.0	4.7	0.5	0.0	4.6	0.7	0.0	5.7	0.3	0.0	7.0
Prop In Lane	1.00		0.19	1.00		0.14	1.00		0.09	1.00		0.08
Lane Grp Cap(c), veh/h	345	0	370	347	0	394	396	0	595	415	0	541
V/C Ratio(X)	0.06	0.00	0.65	0.09	0.00	0.60	0.13	0.00	0.55	0.05	0.00	0.69
Avail Cap(c_a), veh/h	573	0	1115	555	0	1124	574	0	1796	647	0	1800
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.9	0.0	14.2	11.7	0.0	13.7	9.2	0.0	10.8	9.4	0.0	12.2
Incr Delay (d2), s/veh	0.1	0.0	1.9	0.1	0.0	1.5	0.1	0.0	0.8	0.0	0.0	1.6
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(95%),veh/ln	0.2	0.0	3.3	0.3	0.0	3.1	0.4	0.0	3.4	0.2	0.0	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.0	0.0	16.1	11.8	0.0	15.2	9.3	0.0	11.6	9.5	0.0	13.8
LnGrp LOS	B	A	B	B	A	B	A	A	B	A	A	B
Approach Vol, veh/h		260			269			375			392	
Approach Delay, s/veh		15.7			14.8			11.3			13.6	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.9	16.6	5.5	12.0	6.1	15.4	5.0	12.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	6.0	38.0	6.0	24.0	6.0	38.0	6.0	24.0				
Max Q Clear Time (g_c+I1), s	2.3	7.7	2.5	6.7	2.7	9.0	2.4	6.6				
Green Ext Time (p_c), s	0.0	2.1	0.0	1.3	0.0	2.4	0.0	1.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				13.6								
HCM 6th LOS				B								

HCM 6th TWSC  
2: Overhill Road/Belinder Avenue & 63rd Street

Existing (2023) Traffic Volumes  
PM Peak Hour

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	210	21	10	217	6	39	5	18	1	12	11
Future Vol, veh/h	2	210	21	10	217	6	39	5	18	1	12	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	9
Mvmt Flow	2	219	22	10	226	6	41	5	19	1	13	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	232	0	0	241	0	0	495	486	230	495	494	229
Stage 1	-	-	-	-	-	-	234	234	-	249	249	-
Stage 2	-	-	-	-	-	-	261	252	-	246	245	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.29
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.381
Pot Cap-1 Maneuver	1336	-	-	1326	-	-	485	481	809	485	476	793
Stage 1	-	-	-	-	-	-	769	711	-	755	701	-
Stage 2	-	-	-	-	-	-	744	698	-	758	703	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1336	-	-	1326	-	-	465	476	809	466	471	793
Mov Cap-2 Maneuver	-	-	-	-	-	-	465	476	-	466	471	-
Stage 1	-	-	-	-	-	-	767	710	-	753	695	-
Stage 2	-	-	-	-	-	-	714	692	-	734	702	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.3			12.7			11.5		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	532	1336	-	-	1326	-	-	578
HCM Lane V/C Ratio	0.121	0.002	-	-	0.008	-	-	0.043
HCM Control Delay (s)	12.7	7.7	0	-	7.7	0	-	11.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.1

Queues  
3: State Line Road & 63rd Street

Existing (2023) Traffic Volumes  
PM Peak Hour

	→	←	↑	↓
Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	202	209	290	323
v/c Ratio	0.35	0.35	0.31	0.34
Control Delay	9.9	9.6	7.2	7.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.9	9.6	7.2	7.5
Queue Length 50th (ft)	19	20	25	29
Queue Length 95th (ft)	62	63	69	78
Internal Link Dist (ft)	2403	861	551	2082
Turn Bay Length (ft)				
Base Capacity (vph)	1681	1734	1822	1812
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.12	0.12	0.16	0.18
<b>Intersection Summary</b>				

# HCM 6th Signalized Intersection Summary

## 3: State Line Road & 63rd Street

Existing (2023) Traffic Volumes  
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	33	151	11	16	163	21	7	248	24	13	281	15
Future Volume (veh/h)	33	151	11	16	163	21	7	248	24	13	281	15
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	1811	1870	1870	1870	1870	1870	1781	1870	1870
Adj Flow Rate, veh/h	34	157	11	17	170	22	7	258	25	14	293	16
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	6	2	2	2	2	2	8	2	2
Cap, veh/h	263	347	23	221	360	45	196	581	55	205	599	32
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	199	1463	96	87	1514	188	17	1654	158	35	1704	91
Grp Volume(v), veh/h	202	0	0	209	0	0	290	0	0	323	0	0
Grp Sat Flow(s),veh/h/ln	1758	0	0	1790	0	0	1829	0	0	1829	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.8	0.0	0.0	1.9	0.0	0.0	2.4	0.0	0.0	2.7	0.0	0.0
Prop In Lane	0.17		0.05	0.08		0.11	0.02		0.09	0.04		0.05
Lane Grp Cap(c), veh/h	634	0	0	625	0	0	832	0	0	836	0	0
V/C Ratio(X)	0.32	0.00	0.00	0.33	0.00	0.00	0.35	0.00	0.00	0.39	0.00	0.00
Avail Cap(c_a), veh/h	3274	0	0	3372	0	0	4566	0	0	4548	0	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	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.4	0.0	0.0	6.4	0.0	0.0	4.9	0.0	0.0	5.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.3	0.0	0.0	0.2	0.0	0.0	0.3	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(95%),veh/ln	0.7	0.0	0.0	0.6	0.0	0.0	0.5	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.6	0.0	0.0	6.7	0.0	0.0	5.1	0.0	0.0	5.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		202		209			290			323		
Approach Delay, s/veh		6.6		6.7			5.1			5.2		
Approach LOS		A		A			A			A		
Timer - Assigned Phs		2		4			6			8		
Phs Duration (G+Y+Rc), s		10.8		8.6			10.8			8.6		
Change Period (Y+Rc), s		4.0		4.0			4.0			4.0		
Max Green Setting (Gmax), s		47.0		35.0			47.0			35.0		
Max Q Clear Time (g_c+I1), s		4.4		3.8			4.7			3.9		
Green Ext Time (p_c), s		1.9		1.3			2.2			1.3		
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				5.8								
HCM 6th LOS				A								

HCM 6th TWSC  
4: State Line Road & 59th Street

Existing (2023) Traffic Volumes  
PM Peak Hour

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	5	22	12	6	35	18	7	272	19	9	275	5
Future Vol, veh/h	5	22	12	6	35	18	7	272	19	9	275	5
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									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	20	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	23	13	6	36	19	7	283	20	9	286	5

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	642	624	289	632	616	293	291	0	0	303	0	0
Stage 1	307	307	-	307	307	-	-	-	-	-	-	-
Stage 2	335	317	-	325	309	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.3	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.3	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.68	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	363	402	750	393	406	746	1271	-	-	1258	-	-
Stage 1	666	661	-	703	661	-	-	-	-	-	-	-
Stage 2	643	654	-	687	660	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	325	396	750	365	400	746	1271	-	-	1258	-	-
Mov Cap-2 Maneuver	325	396	-	365	400	-	-	-	-	-	-	-
Stage 1	661	655	-	698	656	-	-	-	-	-	-	-
Stage 2	588	649	-	646	654	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.8		14		0.2		0.2	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1271	-	-	449	461	1258	-
HCM Lane V/C Ratio	0.006	-	-	0.09	0.133	0.007	-
HCM Control Delay (s)	7.8	0	-	13.8	14	7.9	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.3	0.5	0	-

Queues  
5: State Line Road & 55th Street

Existing (2023) Traffic Volumes  
PM Peak Hour

	→	←	↑	↓
Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	26	209	368	312
v/c Ratio	0.06	0.41	0.42	0.37
Control Delay	7.1	5.7	7.0	6.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	7.1	5.7	7.0	6.8
Queue Length 50th (ft)	2	4	26	22
Queue Length 95th (ft)	11	33	70	61
Internal Link Dist (ft)	303	501	2569	2061
Turn Bay Length (ft)				
Base Capacity (vph)	1683	1545	1831	1744
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.02	0.14	0.20	0.18
<b>Intersection Summary</b>				

HCM 6th Signalized Intersection Summary  
5: State Line Road & 55th Street

Existing (2023) Traffic Volumes  
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	1	16	8	22	21	157	5	317	32	35	264	1
Future Volume (veh/h)	1	16	8	22	21	157	5	317	32	35	264	1
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	1	17	8	23	22	164	5	330	33	36	275	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	249	114	228	47	264	188	639	63	244	643	2
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	35	1186	543	121	224	1257	9	1662	165	104	1672	6
Grp Volume(v), veh/h	26	0	0	209	0	0	368	0	0	312	0	0
Grp Sat Flow(s),veh/h/ln	1764	0	0	1602	0	0	1835	0	0	1782	0	0
Q Serve(g_s), s	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	0.0	0.0	2.3	0.0	0.0	3.0	0.0	0.0	2.4	0.0	0.0
Prop In Lane	0.04		0.31	0.11		0.78	0.01		0.09	0.12		0.00
Lane Grp Cap(c), veh/h	559	0	0	539	0	0	891	0	0	889	0	0
V/C Ratio(X)	0.05	0.00	0.00	0.39	0.00	0.00	0.41	0.00	0.00	0.35	0.00	0.00
Avail Cap(c_a), veh/h	2926	0	0	2699	0	0	4907	0	0	4644	0	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	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.2	0.0	0.0	7.1	0.0	0.0	4.7	0.0	0.0	4.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.5	0.0	0.0	0.3	0.0	0.0	0.2	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(95%),veh/ln	0.1	0.0	0.0	0.8	0.0	0.0	0.5	0.0	0.0	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.3	0.0	0.0	7.5	0.0	0.0	5.0	0.0	0.0	4.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		26		209			368			312		
Approach Delay, s/veh		6.3		7.5			5.0			4.7		
Approach LOS		A		A			A			A		
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		11.6		8.1		11.6		8.1				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		51.0		31.0		51.0		31.0				
Max Q Clear Time (g_c+I1), s		5.0		2.2		4.4		4.3				
Green Ext Time (p_c), s		2.5		0.1		2.2		1.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				5.5								
HCM 6th LOS				A								

Queues  
6: State Line Road & Shawnee Mission Parkway

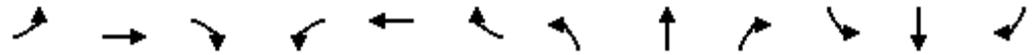
Existing (2023) Traffic Volumes  
PM Peak Hour



Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	59	1133	1239	257	248	69	248
v/c Ratio	0.34	0.63	0.82	0.63	0.34	0.32	0.71
Control Delay	17.6	18.5	30.3	31.4	24.2	43.2	50.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.6	18.5	30.3	31.4	24.2	43.2	50.4
Queue Length 50th (ft)	18	255	371	122	113	41	151
Queue Length 95th (ft)	42	366	515	210	197	89	256
Internal Link Dist (ft)		1240	1383		2061		670
Turn Bay Length (ft)	140			240		140	
Base Capacity (vph)	176	2368	2005	431	944	322	523
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.48	0.62	0.60	0.26	0.21	0.47
<b>Intersection Summary</b>							

HCM 6th Signalized Intersection Summary  
6: State Line Road & Shawnee Mission Parkway

Existing (2023) Traffic Volumes  
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↕			↕		↗	↕		↗	↕	
Traffic Volume (veh/h)	57	960	128	1	1175	13	247	212	26	66	183	55
Future Volume (veh/h)	57	960	128	1	1175	13	247	212	26	66	183	55
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	1000	133	1	1224	14	257	221	27	69	191	57
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	235	1692	225	45	1557	18	387	596	73	287	242	72
Arrive On Green	0.05	0.54	0.54	0.44	0.44	0.44	0.14	0.36	0.36	0.18	0.18	0.18
Sat Flow, veh/h	1781	3153	419	0	3524	40	1781	1635	200	1132	1383	413
Grp Volume(v), veh/h	59	563	570	650	0	589	257	0	248	69	0	248
Grp Sat Flow(s),veh/h/ln	1781	1777	1795	1869	0	1695	1781	0	1834	1132	0	1796
Q Serve(g_s), s	1.4	17.4	17.5	0.0	0.0	24.1	9.0	0.0	8.1	4.3	0.0	10.7
Cycle Q Clear(g_c), s	1.4	17.4	17.5	24.1	0.0	24.1	9.0	0.0	8.1	4.3	0.0	10.7
Prop In Lane	1.00		0.23	0.00		0.02	1.00		0.11	1.00		0.23
Lane Grp Cap(c), veh/h	235	953	963	870	0	749	387	0	669	287	0	315
V/C Ratio(X)	0.25	0.59	0.59	0.75	0.00	0.79	0.66	0.00	0.37	0.24	0.00	0.79
Avail Cap(c_a), veh/h	275	1414	1428	1311	0	1150	511	0	1075	459	0	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(l)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.8	12.7	12.8	19.4	0.0	19.4	21.9	0.0	18.9	29.4	0.0	32.0
Incr Delay (d2), s/veh	0.6	0.6	0.6	1.3	0.0	2.0	2.0	0.0	0.3	0.4	0.0	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.9	10.3	10.4	14.9	0.0	13.9	6.8	0.0	6.0	2.2	0.0	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.4	13.3	13.3	20.7	0.0	21.4	23.9	0.0	19.3	29.8	0.0	36.4
LnGrp LOS	B	B	B	C	A	C	C	A	B	C	A	D
Approach Vol, veh/h		1192			1239			505				317
Approach Delay, s/veh		13.4			21.0			21.6				35.0
Approach LOS		B			C			C				C
Timer - Assigned Phs		2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s		33.6		47.5	15.4	18.2	7.7	39.8				
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s		47.5		64.5	17.0	26.5	5.5	55.0				
Max Q Clear Time (g_c+I1), s		10.1		19.5	11.0	12.7	3.4	26.1				
Green Ext Time (p_c), s		1.6		9.5	0.4	1.5	0.0	9.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				19.7								
HCM 6th LOS				B								

Intersection						
Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	6	49	18	10	67
Future Vol, veh/h	17	6	49	18	10	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	6	51	19	10	70

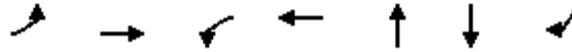
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	151	61	0	0	70	0
Stage 1	61	-	-	-	-	-
Stage 2	90	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	841	1004	-	-	1531	-
Stage 1	962	-	-	-	-	-
Stage 2	934	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	835	1004	-	-	1531	-
Mov Cap-2 Maneuver	835	-	-	-	-	-
Stage 1	962	-	-	-	-	-
Stage 2	927	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	873	1531
HCM Lane V/C Ratio	-	-	0.027	0.007
HCM Control Delay (s)	-	-	9.2	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

Queues  
8: Belinder Avenue & Shawnee Mission Parkway

Existing (2023) Traffic Volumes  
PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	85	1055	8	1959	38	101	95
v/c Ratio	0.38	0.39	0.02	0.81	0.18	0.52	0.33
Control Delay	14.9	4.8	3.0	15.7	40.0	53.9	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.9	4.8	3.0	15.7	40.0	53.9	13.0
Queue Length 50th (ft)	9	82	1	449	20	63	1
Queue Length 95th (ft)	56	208	5	664	55	128	49
Internal Link Dist (ft)		2716		1247	2825	855	
Turn Bay Length (ft)	130		120				90
Base Capacity (vph)	242	3008	440	2850	359	324	417
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.35	0.02	0.69	0.11	0.31	0.23
<b>Intersection Summary</b>							

HCM 6th Signalized Intersection Summary  
 8: Belinder Avenue & Shawnee Mission Parkway

Existing (2023) Traffic Volumes  
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↗↘		↗	↗↘			↕			↖	↖↗
Traffic Volume (veh/h)	82	1011	2	8	1849	32	12	19	5	79	18	91
Future Volume (veh/h)	82	1011	2	8	1849	32	12	19	5	79	18	91
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	1767	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	85	1053	2	8	1926	33	12	20	5	82	19	95
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	9	2	2	2	2	2	2
Cap, veh/h	259	2697	5	447	2498	43	75	92	17	196	29	160
Arrive On Green	0.05	0.74	0.74	0.01	0.70	0.70	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1781	3639	7	1781	3575	61	163	912	168	1142	284	1585
Grp Volume(v), veh/h	85	514	541	8	954	1005	37	0	0	101	0	95
Grp Sat Flow(s),veh/h/ln	1781	1777	1869	1781	1777	1859	1243	0	0	1426	0	1585
Q Serve(g_s), s	0.9	8.6	8.6	0.1	28.4	28.8	0.1	0.0	0.0	0.0	0.0	4.7
Cycle Q Clear(g_c), s	0.9	8.6	8.6	0.1	28.4	28.8	5.7	0.0	0.0	5.6	0.0	4.7
Prop In Lane	1.00		0.00	1.00		0.03	0.32		0.14	0.81		1.00
Lane Grp Cap(c), veh/h	259	1317	1385	447	1242	1299	184	0	0	224	0	160
V/C Ratio(X)	0.33	0.39	0.39	0.02	0.77	0.77	0.20	0.00	0.00	0.45	0.00	0.59
Avail Cap(c_a), veh/h	363	1796	1889	556	1726	1806	415	0	0	435	0	390
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(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.3	3.8	3.8	3.6	8.0	8.0	33.6	0.0	0.0	35.4	0.0	35.0
Incr Delay (d2), s/veh	0.7	0.2	0.2	0.0	1.4	1.4	0.5	0.0	0.0	1.4	0.0	3.5
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(95%),veh/ln	1.4	3.7	3.9	0.1	12.8	13.4	1.2	0.0	0.0	3.6	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.1	4.0	4.0	3.6	9.4	9.4	34.1	0.0	0.0	36.8	0.0	38.4
LnGrp LOS	B	A	A	A	A	A	C	A	A	D	A	D
Approach Vol, veh/h		1140			1967			37				196
Approach Delay, s/veh		4.6			9.4			34.1				37.6
Approach LOS		A			A			C				D
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		12.2	4.8	64.3		12.2	8.3	60.8				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		20.0	5.8	82.2		20.0	9.0	79.0				
Max Q Clear Time (g_c+I1), s		7.7	2.1	10.6		7.6	2.9	30.8				
Green Ext Time (p_c), s		0.1	0.0	8.5		0.6	0.1	26.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			9.7									
HCM 6th LOS			A									

Queues  
9: Mission Road & Shawnee Mission Parkway

Existing (2023) Traffic Volumes  
PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	45	1103	240	1847	44	100	155	49	225
v/c Ratio	0.25	0.62	0.64	0.86	0.22	0.31	0.25	0.17	0.70
Control Delay	12.4	21.3	18.0	24.2	36.1	45.4	9.8	34.9	53.5
Queue Delay	0.0	0.0	0.7	47.8	0.0	0.0	0.0	0.0	0.0
Total Delay	12.4	21.3	18.7	72.0	36.1	45.4	9.8	34.9	53.5
Queue Length 50th (ft)	10	273	59	573	26	67	22	29	151
Queue Length 95th (ft)	24	423	133	750	56	120	64	61	238
Internal Link Dist (ft)		438		119		1367			964
Turn Bay Length (ft)	220		220		110		150	60	
Base Capacity (vph)	180	2164	537	2414	202	449	777	293	441
Starvation Cap Reductn	0	0	100	833	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.51	0.55	1.17	0.22	0.22	0.20	0.17	0.51

Intersection Summary

HCM 6th Signalized Intersection Summary  
 9: Mission Road & Shawnee Mission Parkway

Existing (2023) Traffic Volumes  
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	1028	31	230	1749	24	42	96	149	47	148	68
Future Volume (veh/h)	43	1028	31	230	1749	24	42	96	149	47	148	68
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	45	1071	32	240	1822	25	44	100	155	49	154	71
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	1997	60	408	2186	30	172	282	363	258	185	85
Arrive On Green	0.04	0.57	0.57	0.08	0.61	0.61	0.04	0.15	0.15	0.04	0.15	0.15
Sat Flow, veh/h	1781	3523	105	1781	3589	49	1781	1870	1585	1781	1211	558
Grp Volume(v), veh/h	45	540	563	240	900	947	44	100	155	49	0	225
Grp Sat Flow(s),veh/h/ln	1781	1777	1851	1781	1777	1862	1781	1870	1585	1781	0	1770
Q Serve(g_s), s	1.0	18.2	18.2	5.0	38.7	39.0	2.0	4.6	8.0	2.2	0.0	11.9
Cycle Q Clear(g_c), s	1.0	18.2	18.2	5.0	38.7	39.0	2.0	4.6	8.0	2.2	0.0	11.9
Prop In Lane	1.00		0.06	1.00		0.03	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	191	1007	1049	408	1082	1134	172	282	363	258	0	270
V/C Ratio(X)	0.24	0.54	0.54	0.59	0.83	0.84	0.26	0.36	0.43	0.19	0.00	0.83
Avail Cap(c_a), veh/h	233	1007	1049	671	1292	1353	216	435	493	297	0	412
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	0.00	1.00
Uniform Delay (d), s/veh	15.5	13.0	13.0	10.2	14.9	15.0	33.4	36.7	31.7	32.7	0.0	39.6
Incr Delay (d2), s/veh	0.6	0.6	0.5	1.4	4.1	4.0	0.8	0.8	0.8	0.4	0.0	8.6
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(95%),veh/ln	0.7	11.0	11.4	3.2	20.9	21.9	1.6	3.9	5.6	1.8	0.0	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	13.5	13.5	11.6	19.0	19.0	34.2	37.5	32.5	33.1	0.0	48.2
LnGrp LOS	B	B	B	B	B	B	C	D	C	C	A	D
Approach Vol, veh/h		1148			2087			299			274	
Approach Delay, s/veh		13.6			18.2			34.4			45.5	
Approach LOS		B			B			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.7	18.5	11.6	58.6	7.5	18.7	7.5	62.6				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	5.8	22.4	21.8	54.0	5.8	22.4	5.8	70.0				
Max Q Clear Time (g_c+I1), s	4.2	10.0	7.0	20.2	4.0	13.9	3.0	41.0				
Green Ext Time (p_c), s	0.0	0.8	0.6	8.5	0.0	0.8	0.0	17.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			20.0									
HCM 6th LOS			C									

Queues

BLWC Closure-Existing (2023) Traffic Volumes

1: Mission Road & 63rd Street

AM Peak Hour

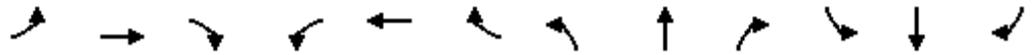


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	51	267	45	211	45	378	70	283
v/c Ratio	0.11	0.52	0.11	0.41	0.09	0.59	0.16	0.44
Control Delay	13.3	22.6	13.3	19.7	10.2	20.9	10.7	18.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.3	22.6	13.3	19.7	10.2	20.9	10.7	18.2
Queue Length 50th (ft)	11	79	9	56	8	117	13	81
Queue Length 95th (ft)	36	174	32	132	27	228	38	165
Internal Link Dist (ft)		1018		3863		697		3913
Turn Bay Length (ft)	60		100		60		70	
Base Capacity (vph)	457	1089	424	1081	493	1338	432	1333
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.25	0.11	0.20	0.09	0.28	0.16	0.21

Intersection Summary

HCM 6th Signalized Intersection Summary  
1: Mission Road & 63rd Street

BLWC Closure-Existing (2023) Traffic Volumes  
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	47	188	60	42	131	65	42	334	18	65	243	20
Future Volume (veh/h)	47	188	60	42	131	65	42	334	18	65	243	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	1856	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	51	202	65	45	141	70	45	359	19	70	261	22
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	3	2	2	2	2	2	2	2	2	2
Cap, veh/h	392	298	96	349	253	126	453	506	27	393	519	44
Arrive On Green	0.05	0.22	0.22	0.05	0.21	0.21	0.05	0.29	0.29	0.07	0.30	0.30
Sat Flow, veh/h	1781	1356	436	1781	1179	586	1781	1760	93	1781	1701	143
Grp Volume(v), veh/h	51	0	267	45	0	211	45	0	378	70	0	283
Grp Sat Flow(s),veh/h/ln	1781	0	1792	1781	0	1765	1781	0	1854	1781	0	1845
Q Serve(g_s), s	0.9	0.0	5.8	0.8	0.0	4.5	0.7	0.0	7.7	1.1	0.0	5.3
Cycle Q Clear(g_c), s	0.9	0.0	5.8	0.8	0.0	4.5	0.7	0.0	7.7	1.1	0.0	5.3
Prop In Lane	1.00		0.24	1.00		0.33	1.00		0.05	1.00		0.08
Lane Grp Cap(c), veh/h	392	0	394	349	0	379	453	0	532	393	0	562
V/C Ratio(X)	0.13	0.00	0.68	0.13	0.00	0.56	0.10	0.00	0.71	0.18	0.00	0.50
Avail Cap(c_a), veh/h	550	0	1102	515	0	1085	619	0	1578	528	0	1570
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.9	0.0	15.1	12.2	0.0	14.8	9.8	0.0	13.5	10.0	0.0	12.1
Incr Delay (d2), s/veh	0.1	0.0	2.1	0.2	0.0	1.3	0.1	0.0	1.8	0.2	0.0	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(95%),veh/ln	0.6	0.0	4.1	0.5	0.0	3.1	0.4	0.0	5.2	0.7	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.1	0.0	17.2	12.3	0.0	16.1	9.9	0.0	15.3	10.2	0.0	12.8
LnGrp LOS	B	A	B	B	A	B	A	A	B	B	A	B
Approach Vol, veh/h		318			256			423			353	
Approach Delay, s/veh		16.4			15.4			14.7			12.3	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.8	16.1	6.1	13.3	6.1	16.9	6.3	13.1				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	6.0	36.0	6.0	26.0	6.0	36.0	6.0	26.0				
Max Q Clear Time (g_c+I1), s	3.1	9.7	2.8	7.8	2.7	7.3	2.9	6.5				
Green Ext Time (p_c), s	0.0	2.4	0.0	1.5	0.0	1.8	0.0	1.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			14.6									
HCM 6th LOS			B									

HCM 6th TWSC  
2: Overhill Road/Belinder Avenue & 63rd Street

BLWC Closure-Existing (2023) Traffic Volumes

AM Peak Hour

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	215	22	7	155	1	47	7	22	2	8	15
Future Vol, veh/h	17	215	22	7	155	1	47	7	22	2	8	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	3	2	2	50	2	2
Mvmt Flow	18	231	24	8	167	1	51	8	24	2	9	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	168	0	0	255	0	0	475	463	243	479	475	168
Stage 1	-	-	-	-	-	-	279	279	-	184	184	-
Stage 2	-	-	-	-	-	-	196	184	-	295	291	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.13	6.52	6.22	7.6	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.52	-	6.6	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.52	-	6.6	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.527	4.018	3.318	3.95	4.018	3.318
Pot Cap-1 Maneuver	1410	-	-	1310	-	-	498	496	796	426	488	876
Stage 1	-	-	-	-	-	-	725	680	-	718	747	-
Stage 2	-	-	-	-	-	-	803	747	-	621	672	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1410	-	-	1310	-	-	474	485	796	402	477	876
Mov Cap-2 Maneuver	-	-	-	-	-	-	474	485	-	402	477	-
Stage 1	-	-	-	-	-	-	714	670	-	707	742	-
Stage 2	-	-	-	-	-	-	774	742	-	587	662	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			0.3			12.9			10.8		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	538	1410	-	-	1310	-	-	643
HCM Lane V/C Ratio	0.152	0.013	-	-	0.006	-	-	0.042
HCM Control Delay (s)	12.9	7.6	0	-	7.8	0	-	10.8
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.1

Queues  
3: State Line Road & 63rd Street

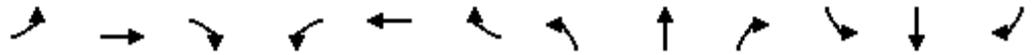
BLWC Closure-Existing (2023) Traffic Volumes  
AM Peak Hour



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	196	133	437	197
v/c Ratio	0.40	0.25	0.51	0.25
Control Delay	12.2	9.8	9.0	6.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.2	9.8	9.0	6.6
Queue Length 50th (ft)	22	13	42	17
Queue Length 95th (ft)	73	48	114	50
Internal Link Dist (ft)	2403	861	551	2082
Turn Bay Length (ft)				
Base Capacity (vph)	1568	1631	1831	1726
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.13	0.08	0.24	0.11
<b>Intersection Summary</b>				

HCM 6th Signalized Intersection Summary  
3: State Line Road & 63rd Street

BLWC Closure-Existing (2023) Traffic Volumes  
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	32	140	10	6	91	27	5	360	42	20	153	9
Future Volume (veh/h)	32	140	10	6	91	27	5	360	42	20	153	9
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	1752	1870	1870	1870	1870	1870	1870	1781	1870	1870
Adj Flow Rate, veh/h	34	151	11	6	98	29	5	387	45	22	165	10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	10	2	2	2	2	2	2	8	2	2
Cap, veh/h	240	304	21	183	284	82	171	687	79	219	673	38
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	211	1443	98	43	1347	388	6	1638	189	81	1605	90
Grp Volume(v), veh/h	196	0	0	133	0	0	437	0	0	197	0	0
Grp Sat Flow(s),veh/h/ln	1753	0	0	1778	0	0	1833	0	0	1776	0	0
Q Serve(g_s), s	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.1	0.0	0.0	1.4	0.0	0.0	3.9	0.0	0.0	1.5	0.0	0.0
Prop In Lane	0.17		0.06	0.05		0.22	0.01		0.10	0.11		0.05
Lane Grp Cap(c), veh/h	565	0	0	548	0	0	937	0	0	930	0	0
V/C Ratio(X)	0.35	0.00	0.00	0.24	0.00	0.00	0.47	0.00	0.00	0.21	0.00	0.00
Avail Cap(c_a), veh/h	2658	0	0	2702	0	0	4479	0	0	4183	0	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	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.5	0.0	0.0	7.3	0.0	0.0	4.8	0.0	0.0	4.1	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.2	0.0	0.0	0.4	0.0	0.0	0.1	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(95%),veh/ln	0.9	0.0	0.0	0.5	0.0	0.0	0.8	0.0	0.0	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.9	0.0	0.0	7.5	0.0	0.0	5.1	0.0	0.0	4.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		196			133			437				197
Approach Delay, s/veh		7.9			7.5			5.1				4.2
Approach LOS		A			A			A				A
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		13.1		8.5		13.1		8.5				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		51.0		31.0		51.0		31.0				
Max Q Clear Time (g_c+I1), s		5.9		4.1		3.5		3.4				
Green Ext Time (p_c), s		3.1		1.2		1.3		0.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				5.8								
HCM 6th LOS				A								

HCM 6th TWSC  
4: State Line Road & 59th Street

BLWC Closure-Existing (2023) Traffic Volumes  
AM Peak Hour

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	28	8	5	17	30	7	380	35	6	153	14
Future Vol, veh/h	12	28	8	5	17	30	7	380	35	6	153	14
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									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	3	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	30	9	5	18	32	8	409	38	6	165	15

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	654	648	173	648	636	428	180	0	0	447	0	0
Stage 1	185	185	-	444	444	-	-	-	-	-	-	-
Stage 2	469	463	-	204	192	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.53	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.53	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.53	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.027	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	380	388	871	383	395	627	1396	-	-	1113	-	-
Stage 1	817	745	-	593	575	-	-	-	-	-	-	-
Stage 2	575	562	-	798	742	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	344	383	871	353	389	627	1396	-	-	1113	-	-
Mov Cap-2 Maneuver	344	383	-	353	389	-	-	-	-	-	-	-
Stage 1	810	741	-	588	570	-	-	-	-	-	-	-
Stage 2	524	558	-	753	738	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	15		13.3		0.1		0.3	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1396	-	-	410	492	1113	-
HCM Lane V/C Ratio	0.005	-	-	0.126	0.114	0.006	-
HCM Control Delay (s)	7.6	0	-	15	13.3	8.3	0
HCM Lane LOS	A	A	-	C	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.4	0.4	0	-

Queues  
5: State Line Road & 55th Street

BLWC Closure-Existing (2023) Traffic Volumes  
AM Peak Hour



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	50	192	601	191
v/c Ratio	0.15	0.43	0.58	0.19
Control Delay	12.3	7.6	7.9	4.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.3	7.6	7.9	4.6
Queue Length 50th (ft)	6	4	51	12
Queue Length 95th (ft)	29	45	141	39
Internal Link Dist (ft)	303	501	2569	2061
Turn Bay Length (ft)				
Base Capacity (vph)	1215	1204	1842	1759
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.04	0.16	0.33	0.11
<b>Intersection Summary</b>				

HCM 6th Signalized Intersection Summary  
5: State Line Road & 55th Street

BLWC Closure-Existing (2023) Traffic Volumes  
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	12	31	4	14	19	146	3	514	42	16	158	4
Future Volume (veh/h)	12	31	4	14	19	146	3	514	42	16	158	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	1856	1856	1856	1767	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	33	4	15	20	157	3	553	45	17	170	4
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	3	3	3	9	2	2	2	2	2	2	2
Cap, veh/h	221	264	27	161	41	242	139	852	69	176	852	19
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.50	0.50	0.50	0.50	0.50	0.50
Sat Flow, veh/h	246	1352	139	68	208	1241	2	1704	138	53	1704	38
Grp Volume(v), veh/h	50	0	0	192	0	0	601	0	0	191	0	0
Grp Sat Flow(s),veh/h/ln	1738	0	0	1518	0	0	1844	0	0	1795	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.6	0.0	0.0	3.0	0.0	0.0	6.3	0.0	0.0	1.5	0.0	0.0
Prop In Lane	0.26		0.08	0.08		0.82	0.00		0.07	0.09		0.02
Lane Grp Cap(c), veh/h	512	0	0	444	0	0	1060	0	0	1047	0	0
V/C Ratio(X)	0.10	0.00	0.00	0.43	0.00	0.00	0.57	0.00	0.00	0.18	0.00	0.00
Avail Cap(c_a), veh/h	1726	0	0	1581	0	0	4135	0	0	3843	0	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(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.7	0.0	0.0	9.7	0.0	0.0	4.9	0.0	0.0	3.7	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.7	0.0	0.0	0.5	0.0	0.0	0.1	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(95%),veh/ln	0.3	0.0	0.0	1.4	0.0	0.0	1.5	0.0	0.0	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.8	0.0	0.0	10.4	0.0	0.0	5.3	0.0	0.0	3.7	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		50			192			601			191	
Approach Delay, s/veh		8.8			10.4			5.3			3.7	
Approach LOS		A			B			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		17.1		9.1		17.1		9.1				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		57.0		25.0		57.0		25.0				
Max Q Clear Time (g_c+I1), s		8.3		2.6		3.5		5.0				
Green Ext Time (p_c), s		4.8		0.2		1.3		1.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				6.2								
HCM 6th LOS				A								

## Queues

## BLWC Closure-Existing (2023) Traffic Volumes

## 6: State Line Road &amp; Shawnee Mission Parkway

AM Peak Hour



Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	62	1512	605	419	303	46	119
v/c Ratio	0.16	0.83	0.40	0.78	0.42	0.37	0.54
Control Delay	13.2	24.5	19.8	37.4	25.2	52.8	48.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.2	24.5	19.8	37.4	25.2	52.8	48.9
Queue Length 50th (ft)	19	404	137	213	137	28	66
Queue Length 95th (ft)	43	556	198	#350	242	70	134
Internal Link Dist (ft)		1240	1383		2061		670
Turn Bay Length (ft)	140			240		140	
Base Capacity (vph)	378	2342	1913	556	923	221	379
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.65	0.32	0.75	0.33	0.21	0.31

## Intersection Summary

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

HCM 6th Signalized Intersection Summary BLWC Closure-Existing (2023) Traffic Volumes  
 6: State Line Road & Shawnee Mission Parkway AM Peak Hour



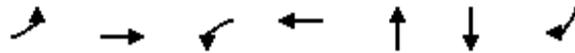
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	1287	119	1	539	22	390	251	31	43	81	30
Future Volume (veh/h)	58	1287	119	1	539	22	390	251	31	43	81	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	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	1841	1870	1870	1870	1870	1870	1856
Adj Flow Rate, veh/h	62	1384	128	1	580	24	419	270	33	46	87	32
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	4	2	2	2	2	2	3
Cap, veh/h	429	1748	161	43	1494	62	536	612	75	188	125	46
Arrive On Green	0.05	0.53	0.53	0.44	0.44	0.44	0.23	0.37	0.37	0.10	0.10	0.10
Sat Flow, veh/h	1781	3290	303	1	3403	140	1781	1635	200	1076	1304	480
Grp Volume(v), veh/h	62	744	768	319	0	286	419	0	303	46	0	119
Grp Sat Flow(s),veh/h/ln	1781	1777	1816	1868	0	1677	1781	0	1834	1076	0	1784
Q Serve(g_s), s	1.5	28.6	29.1	0.0	0.0	9.8	16.9	0.0	10.5	3.4	0.0	5.5
Cycle Q Clear(g_c), s	1.5	28.6	29.1	9.8	0.0	9.8	16.9	0.0	10.5	3.4	0.0	5.5
Prop In Lane	1.00		0.17	0.00		0.08	1.00		0.11	1.00		0.27
Lane Grp Cap(c), veh/h	429	944	965	862	0	736	536	0	686	188	0	170
V/C Ratio(X)	0.14	0.79	0.80	0.37	0.00	0.39	0.78	0.00	0.44	0.24	0.00	0.70
Avail Cap(c_a), veh/h	464	1342	1372	1239	0	1079	633	0	1039	337	0	417
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(l)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.5	16.0	16.1	16.1	0.0	16.1	23.8	0.0	19.9	36.2	0.0	37.1
Incr Delay (d2), s/veh	0.2	2.1	2.2	0.3	0.0	0.3	5.3	0.0	0.4	0.7	0.0	5.1
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(95%),veh/ln	1.0	16.0	16.6	7.1	0.0	6.4	12.1	0.0	7.8	1.7	0.0	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.7	18.1	18.3	16.3	0.0	16.4	29.2	0.0	20.3	36.9	0.0	42.2
LnGrp LOS	B	B	B	B	A	B	C	A	C	D	A	D
Approach Vol, veh/h		1574			605			722				165
Approach Delay, s/veh		17.9			16.4			25.5				40.7
Approach LOS		B			B			C				D
Timer - Assigned Phs		2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s		35.7		49.0	23.6	12.1	7.8	41.2				
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s		48.0		64.0	24.2	19.8	5.5	54.5				
Max Q Clear Time (g_c+I1), s		12.5		31.1	18.9	7.5	3.5	11.8				
Green Ext Time (p_c), s		2.0		14.0	0.7	0.6	0.0	4.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				20.6								
HCM 6th LOS				C								

Queues

BLWC Closure-Existing (2023) Traffic Volumes

8: Belinder Avenue & Shawnee Mission Parkway

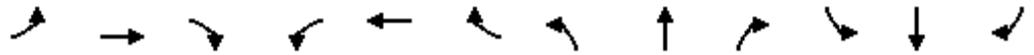
AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	160	1844	8	1075	66	99	112
v/c Ratio	0.39	0.75	0.03	0.59	0.23	0.41	0.32
Control Delay	6.2	10.1	4.0	12.7	31.0	38.9	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.2	10.1	4.0	12.7	31.0	38.9	10.8
Queue Length 50th (ft)	17	193	1	153	20	37	0
Queue Length 95th (ft)	45	537	5	250	80	124	51
Internal Link Dist (ft)		2716		1247	2825	855	
Turn Bay Length (ft)	130		120				90
Base Capacity (vph)	445	3308	236	3203	547	467	566
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.56	0.03	0.34	0.12	0.21	0.20

Intersection Summary

HCM 6th Signalized Intersection Summary BLWC Closure-Existing (2023) Traffic Volumes  
 8: Belinder Avenue & Shawnee Mission Parkway AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	1710	5	7	943	57	11	37	13	76	16	104
Future Volume (veh/h)	149	1710	5	7	943	57	11	37	13	76	16	104
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	1826	1870	1870	1870	1870	1811	1870	1870	1752	1870	1811	1811
Adj Flow Rate, veh/h	160	1839	5	8	1014	61	12	40	14	82	17	112
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	2	2	2	2	6	2	2	10	2	6	6
Cap, veh/h	480	2553	7	224	2188	132	80	127	39	234	35	169
Arrive On Green	0.07	0.70	0.70	0.01	0.64	0.64	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1739	3636	10	1781	3405	205	155	1151	352	1238	315	1535
Grp Volume(v), veh/h	160	898	946	8	529	546	66	0	0	99	0	112
Grp Sat Flow(s),veh/h/ln	1739	1777	1869	1781	1777	1833	1658	0	0	1554	0	1535
Q Serve(g_s), s	1.8	20.6	20.7	0.1	10.3	10.3	0.0	0.0	0.0	0.0	0.0	4.7
Cycle Q Clear(g_c), s	1.8	20.6	20.7	0.1	10.3	10.3	3.6	0.0	0.0	3.6	0.0	4.7
Prop In Lane	1.00		0.01	1.00		0.11	0.18		0.21	0.83		1.00
Lane Grp Cap(c), veh/h	480	1248	1312	224	1141	1178	246	0	0	268	0	169
V/C Ratio(X)	0.33	0.72	0.72	0.04	0.46	0.46	0.27	0.00	0.00	0.37	0.00	0.66
Avail Cap(c_a), veh/h	625	2124	2234	350	1996	2059	590	0	0	553	0	487
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(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.1	6.1	6.1	6.2	6.2	6.2	27.8	0.0	0.0	28.4	0.0	28.9
Incr Delay (d2), s/veh	0.4	0.8	0.8	0.1	0.3	0.3	0.6	0.0	0.0	0.8	0.0	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	8.4	8.7	0.1	5.1	5.2	1.8	0.0	0.0	2.8	0.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.5	6.9	6.8	6.3	6.5	6.5	28.4	0.0	0.0	29.3	0.0	33.3
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	C
Approach Vol, veh/h		2004			1083			66				211
Approach Delay, s/veh		6.7			6.5			28.4				31.4
Approach LOS		A			A			C				C
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		11.5	4.7	51.6		11.5	8.8	47.5				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		21.5	5.5	81.0		21.5	10.4	76.1				
Max Q Clear Time (g_c+I1), s		5.6	2.1	22.7		6.7	3.8	12.3				
Green Ext Time (p_c), s		0.2	0.0	24.9		0.8	0.2	8.9				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			8.6									
HCM 6th LOS			A									

## Queues

## BLWC Closure-Existing (2023) Traffic Volumes

## 9: Mission Road &amp; Shawnee Mission Parkway

AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	67	1700	130	975	77	160	310	119	209
v/c Ratio	0.19	0.87	0.62	0.47	0.36	0.57	0.68	0.50	0.61
Control Delay	8.0	26.7	31.4	13.4	38.0	51.0	38.0	41.9	43.3
Queue Delay	0.0	0.0	0.7	7.2	0.0	0.0	0.0	0.0	0.0
Total Delay	8.0	26.7	32.1	20.6	38.0	51.0	38.0	41.9	43.3
Queue Length 50th (ft)	14	492	34	187	44	108	172	70	119
Queue Length 95th (ft)	34	708	#120	279	83	176	270	121	200
Internal Link Dist (ft)		438		119		1367			964
Turn Bay Length (ft)	220		220		110		150	60	
Base Capacity (vph)	356	2209	224	2287	215	452	471	236	457
Starvation Cap Reductn	0	0	12	1259	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.77	0.61	0.95	0.36	0.35	0.66	0.50	0.46

## Intersection Summary

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

HCM 6th Signalized Intersection Summary  
9: Mission Road & Shawnee Mission Parkway

BLWC Closure-Existing (2023) Traffic Volumes

AM Peak Hour



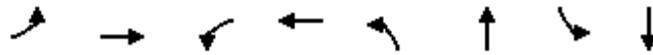
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑	↗	↖	↗	
Traffic Volume (veh/h)	62	1527	54	121	864	43	72	149	288	111	100	94
Future Volume (veh/h)	62	1527	54	121	864	43	72	149	288	111	100	94
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		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	1856	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	67	1642	58	130	929	46	77	160	310	119	108	101
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	3	2	2	2	2	2	2	2
Cap, veh/h	357	1880	66	194	1872	93	278	385	407	291	192	180
Arrive On Green	0.04	0.54	0.54	0.05	0.55	0.55	0.05	0.21	0.21	0.06	0.22	0.22
Sat Flow, veh/h	1781	3502	123	1781	3419	169	1781	1870	1585	1781	889	832
Grp Volume(v), veh/h	67	830	870	130	479	496	77	160	310	119	0	209
Grp Sat Flow(s),veh/h/ln	1781	1777	1848	1781	1763	1825	1781	1870	1585	1781	0	1721
Q Serve(g_s), s	1.8	43.7	44.3	3.5	18.2	18.2	3.6	8.0	19.4	5.7	0.0	11.7
Cycle Q Clear(g_c), s	1.8	43.7	44.3	3.5	18.2	18.2	3.6	8.0	19.4	5.7	0.0	11.7
Prop In Lane	1.00		0.07	1.00		0.09	1.00		1.00	1.00		0.48
Lane Grp Cap(c), veh/h	357	954	992	194	965	999	278	385	407	291	0	373
V/C Ratio(X)	0.19	0.87	0.88	0.67	0.50	0.50	0.28	0.42	0.76	0.41	0.00	0.56
Avail Cap(c_a), veh/h	385	1057	1100	252	1098	1137	287	431	446	291	0	406
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	0.00	1.00
Uniform Delay (d), s/veh	11.5	21.7	21.8	23.5	15.1	15.1	31.9	37.1	36.9	31.6	0.0	37.6
Incr Delay (d2), s/veh	0.3	7.5	7.6	4.4	0.4	0.4	0.5	0.7	6.9	0.9	0.0	1.5
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(95%),veh/ln	1.2	25.8	27.0	3.5	11.3	11.6	2.9	6.8	12.8	4.6	0.0	8.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.8	29.1	29.4	27.9	15.5	15.5	32.5	37.8	43.9	32.5	0.0	39.0
LnGrp LOS	B	C	C	C	B	B	C	D	D	C	A	D
Approach Vol, veh/h		1767			1105			547				328
Approach Delay, s/veh		28.6			17.0			40.5				36.7
Approach LOS		C			B			D				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.2	26.2	9.5	61.7	9.1	27.3	8.3	62.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	6.2	24.8	9.0	64.0	5.6	25.4	6.0	67.0				
Max Q Clear Time (g_c+I1), s	7.7	21.4	5.5	46.3	5.6	13.7	3.8	20.2				
Green Ext Time (p_c), s	0.0	0.7	0.1	11.5	0.0	0.9	0.0	7.5				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				27.6								
HCM 6th LOS				C								

Queues

BLWC Closure-Existing (2023) Traffic Volumes

1: Mission Road & 63rd Street

PM Peak Hour

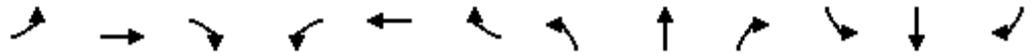


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	21	239	28	266	50	328	58	382
v/c Ratio	0.05	0.45	0.06	0.46	0.11	0.51	0.12	0.52
Control Delay	13.6	20.5	13.5	18.2	9.2	17.8	9.2	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.6	20.5	13.5	18.2	9.2	17.8	9.2	16.7
Queue Length 50th (ft)	4	46	5	51	5	65	6	46
Queue Length 95th (ft)	19	158	23	175	29	192	32	228
Internal Link Dist (ft)		1018		3863		697		3913
Turn Bay Length (ft)	60		100		60		70	
Base Capacity (vph)	436	1113	438	1111	475	1454	484	1455
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.21	0.06	0.24	0.11	0.23	0.12	0.26

Intersection Summary

HCM 6th Signalized Intersection Summary  
1: Mission Road & 63rd Street

BLWC Closure-Existing (2023) Traffic Volumes  
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	186	43	27	195	60	48	288	27	56	339	28
Future Volume (veh/h)	20	186	43	27	195	60	48	288	27	56	339	28
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	1841
Adj Flow Rate, veh/h	21	194	45	28	203	62	50	300	28	58	353	29
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	4
Cap, veh/h	324	314	73	348	304	93	390	490	46	431	506	42
Arrive On Green	0.03	0.21	0.21	0.03	0.22	0.22	0.05	0.29	0.29	0.06	0.30	0.30
Sat Flow, veh/h	1781	1468	341	1781	1375	420	1781	1685	157	1781	1705	140
Grp Volume(v), veh/h	21	0	239	28	0	265	50	0	328	58	0	382
Grp Sat Flow(s),veh/h/ln	1781	0	1809	1781	0	1795	1781	0	1842	1781	0	1845
Q Serve(g_s), s	0.4	0.0	4.8	0.5	0.0	5.4	0.8	0.0	6.1	0.9	0.0	7.3
Cycle Q Clear(g_c), s	0.4	0.0	4.8	0.5	0.0	5.4	0.8	0.0	6.1	0.9	0.0	7.3
Prop In Lane	1.00		0.19	1.00		0.23	1.00		0.09	1.00		0.08
Lane Grp Cap(c), veh/h	324	0	387	348	0	397	390	0	536	431	0	548
V/C Ratio(X)	0.06	0.00	0.62	0.08	0.00	0.67	0.13	0.00	0.61	0.13	0.00	0.70
Avail Cap(c_a), veh/h	546	0	1092	557	0	1084	563	0	1761	594	0	1764
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(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.0	0.0	14.2	11.7	0.0	14.1	9.5	0.0	12.2	9.2	0.0	12.4
Incr Delay (d2), s/veh	0.1	0.0	1.6	0.1	0.0	1.9	0.1	0.0	1.1	0.1	0.0	1.6
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(95%),veh/ln	0.2	0.0	3.3	0.3	0.0	3.7	0.4	0.0	3.8	0.5	0.0	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.0	0.0	15.8	11.8	0.0	16.1	9.6	0.0	13.3	9.3	0.0	14.0
LnGrp LOS	B	A	B	B	A	B	A	A	B	A	A	B
Approach Vol, veh/h		260			293			378			440	
Approach Delay, s/veh		15.5			15.7			12.8			13.4	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.4	15.6	5.3	12.5	6.1	15.8	5.0	12.8				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	6.0	38.0	6.0	24.0	6.0	38.0	6.0	24.0				
Max Q Clear Time (g_c+I1), s	2.9	8.1	2.5	6.8	2.8	9.3	2.4	7.4				
Green Ext Time (p_c), s	0.0	2.1	0.0	1.3	0.0	2.5	0.0	1.5				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			14.1									
HCM 6th LOS			B									

HCM 6th TWSC  
2: Overhill Road/Belinder Avenue & 63rd Street

BLWC Closure-Existing (2023) Traffic Volumes  
PM Peak Hour

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	213	24	10	219	6	45	4	18	1	8	20
Future Vol, veh/h	17	213	24	10	219	6	45	4	18	1	8	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	9
Mvmt Flow	18	222	25	10	228	6	47	4	19	1	8	21

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	234	0	0	247	0	0	537	525	235	533	534	231
Stage 1	-	-	-	-	-	-	271	271	-	251	251	-
Stage 2	-	-	-	-	-	-	266	254	-	282	283	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.29
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.381
Pot Cap-1 Maneuver	1333	-	-	1319	-	-	455	458	804	458	452	791
Stage 1	-	-	-	-	-	-	735	685	-	753	699	-
Stage 2	-	-	-	-	-	-	739	697	-	725	677	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1333	-	-	1319	-	-	428	447	804	436	441	791
Mov Cap-2 Maneuver	-	-	-	-	-	-	428	447	-	436	441	-
Stage 1	-	-	-	-	-	-	723	674	-	741	693	-
Stage 2	-	-	-	-	-	-	704	691	-	692	666	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0.5		0.3		13.5		11	
HCM LOS					B		B	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	491	1333	-	-	1319	-	-	634
HCM Lane V/C Ratio	0.142	0.013	-	-	0.008	-	-	0.048
HCM Control Delay (s)	13.5	7.7	0	-	7.8	0	-	11
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.1

Queues  
3: State Line Road & 63rd Street

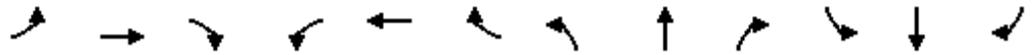
BLWC Closure-Existing (2023) Traffic Volumes  
PM Peak Hour



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	197	209	302	343
v/c Ratio	0.35	0.36	0.31	0.36
Control Delay	10.1	9.9	7.1	7.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.1	9.9	7.1	7.7
Queue Length 50th (ft)	20	20	26	31
Queue Length 95th (ft)	63	66	73	85
Internal Link Dist (ft)	2403	861	551	2082
Turn Bay Length (ft)				
Base Capacity (vph)	1670	1722	1826	1791
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.12	0.12	0.17	0.19
<b>Intersection Summary</b>				

HCM 6th Signalized Intersection Summary  
3: State Line Road & 63rd Street

BLWC Closure-Existing (2023) Traffic Volumes  
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	33	146	11	16	159	25	7	259	24	21	293	15
Future Volume (veh/h)	33	146	11	16	159	25	7	259	24	21	293	15
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	1811	1870	1870	1870	1870	1870	1781	1870	1870
Adj Flow Rate, veh/h	34	152	11	17	166	26	7	270	25	22	305	16
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	6	2	2	2	2	2	8	2	2
Cap, veh/h	260	343	23	216	348	52	191	604	55	212	609	31
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	203	1456	98	86	1477	222	16	1663	152	55	1676	85
Grp Volume(v), veh/h	197	0	0	209	0	0	302	0	0	343	0	0
Grp Sat Flow(s),veh/h/ln	1757	0	0	1785	0	0	1831	0	0	1815	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.8	0.0	0.0	2.0	0.0	0.0	2.5	0.0	0.0	2.9	0.0	0.0
Prop In Lane	0.17		0.06	0.08		0.12	0.02		0.08	0.06		0.05
Lane Grp Cap(c), veh/h	625	0	0	615	0	0	850	0	0	851	0	0
V/C Ratio(X)	0.32	0.00	0.00	0.34	0.00	0.00	0.36	0.00	0.00	0.40	0.00	0.00
Avail Cap(c_a), veh/h	3193	0	0	3286	0	0	4465	0	0	4391	0	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	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.5	0.0	0.0	6.6	0.0	0.0	4.8	0.0	0.0	5.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0	0.3	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(95%),veh/ln	0.7	0.0	0.0	0.7	0.0	0.0	0.5	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.8	0.0	0.0	6.9	0.0	0.0	5.1	0.0	0.0	5.3	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		197			209			302				343
Approach Delay, s/veh		6.8			6.9			5.1				5.3
Approach LOS		A			A			A				A
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		11.2		8.7		11.2		8.7				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		47.0		35.0		47.0		35.0				
Max Q Clear Time (g_c+I1), s		4.5		3.8		4.9		4.0				
Green Ext Time (p_c), s		2.0		1.3		2.4		1.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				5.8								
HCM 6th LOS				A								

HCM 6th TWSC  
4: State Line Road & 59th Street

BLWC Closure-Existing (2023) Traffic Volumes  
PM Peak Hour

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	18	8	6	28	25	4	287	19	10	295	16
Future Vol, veh/h	11	18	8	6	28	25	4	287	19	10	295	16
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									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	20	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	19	8	6	29	26	4	299	20	10	307	17

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	681	663	316	666	661	309	324	0	0	319	0	0
Stage 1	336	336	-	317	317	-	-	-	-	-	-	-
Stage 2	345	327	-	349	344	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.3	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.3	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.68	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	341	382	724	373	383	731	1236	-	-	1241	-	-
Stage 1	642	642	-	694	654	-	-	-	-	-	-	-
Stage 2	635	648	-	667	637	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	306	377	724	351	378	731	1236	-	-	1241	-	-
Mov Cap-2 Maneuver	306	377	-	351	378	-	-	-	-	-	-	-
Stage 1	639	636	-	691	651	-	-	-	-	-	-	-
Stage 2	583	645	-	633	631	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	15.2		13.8		0.1		0.2	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1236	-	-	391	471	1241	-
HCM Lane V/C Ratio	0.003	-	-	0.099	0.13	0.008	-
HCM Control Delay (s)	7.9	0	-	15.2	13.8	7.9	0
HCM Lane LOS	A	A	-	C	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.3	0.4	0	-

Queues  
5: State Line Road & 55th Street

BLWC Closure-Existing (2023) Traffic Volumes  
PM Peak Hour



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	32	209	397	351
v/c Ratio	0.08	0.41	0.44	0.42
Control Delay	7.6	5.8	7.1	7.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	7.6	5.8	7.1	7.1
Queue Length 50th (ft)	2	4	29	25
Queue Length 95th (ft)	14	34	78	71
Internal Link Dist (ft)	303	501	2569	2061
Turn Bay Length (ft)				
Base Capacity (vph)	1549	1532	1833	1740
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.02	0.14	0.22	0.20
<b>Intersection Summary</b>				

HCM 6th Signalized Intersection Summary  
5: State Line Road & 55th Street

BLWC Closure-Existing (2023) Traffic Volumes  
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	7	16	8	22	19	159	5	345	32	36	296	5
Future Volume (veh/h)	7	16	8	22	19	159	5	345	32	36	296	5
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	7	17	8	23	20	166	5	359	33	38	308	5
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	257	228	90	220	45	268	181	669	61	233	661	10
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	206	1079	428	118	212	1271	8	1677	153	97	1658	25
Grp Volume(v), veh/h	32	0	0	209	0	0	397	0	0	351	0	0
Grp Sat Flow(s),veh/h/ln	1714	0	0	1600	0	0	1837	0	0	1780	0	0
Q Serve(g_s), s	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	0.0	0.0	2.4	0.0	0.0	3.4	0.0	0.0	2.9	0.0	0.0
Prop In Lane	0.22		0.25	0.11		0.79	0.01		0.08	0.11		0.01
Lane Grp Cap(c), veh/h	576	0	0	533	0	0	910	0	0	904	0	0
V/C Ratio(X)	0.06	0.00	0.00	0.39	0.00	0.00	0.44	0.00	0.00	0.39	0.00	0.00
Avail Cap(c_a), veh/h	2659	0	0	2592	0	0	4723	0	0	4460	0	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(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.5	0.0	0.0	7.3	0.0	0.0	4.7	0.0	0.0	4.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.5	0.0	0.0	0.3	0.0	0.0	0.3	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(95%),veh/ln	0.1	0.0	0.0	0.9	0.0	0.0	0.6	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.5	0.0	0.0	7.8	0.0	0.0	5.1	0.0	0.0	4.8	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		32		209			397			351		
Approach Delay, s/veh		6.5		7.8			5.1			4.8		
Approach LOS		A		A			A			A		
Timer - Assigned Phs		2		4			6			8		
Phs Duration (G+Y+Rc), s		12.2		8.3			12.2			8.3		
Change Period (Y+Rc), s		4.0		4.0			4.0			4.0		
Max Green Setting (Gmax), s		51.0		31.0			51.0			31.0		
Max Q Clear Time (g_c+I1), s		5.4		2.3			4.9			4.4		
Green Ext Time (p_c), s		2.8		0.1			2.5			1.4		
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				5.6								
HCM 6th LOS				A								

## Queues

## BLWC Closure-Existing (2023) Traffic Volumes

## 6: State Line Road &amp; Shawnee Mission Parkway

PM Peak Hour

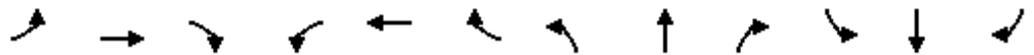


Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	59	1172	1239	295	248	69	248
v/c Ratio	0.34	0.65	0.82	0.72	0.34	0.33	0.71
Control Delay	17.7	19.0	30.4	35.8	24.2	43.3	50.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.7	19.0	30.4	35.8	24.2	43.3	50.8
Queue Length 50th (ft)	18	267	371	144	113	41	151
Queue Length 95th (ft)	42	383	515	#246	197	89	256
Internal Link Dist (ft)		1240	1383		2061		670
Turn Bay Length (ft)	140			240		140	
Base Capacity (vph)	174	2354	1974	427	930	317	515
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.50	0.63	0.69	0.27	0.22	0.48

## Intersection Summary

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

HCM 6th Signalized Intersection Summary BLWC Closure-Existing (2023) Traffic Volumes  
 6: State Line Road & Shawnee Mission Parkway PM Peak Hour



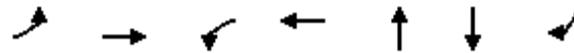
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↕			↕		↗	↕		↗	↕	
Traffic Volume (veh/h)	57	960	165	1	1175	13	283	212	26	66	183	55
Future Volume (veh/h)	57	960	165	1	1175	13	283	212	26	66	183	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1000	172	1	1224	14	295	221	27	69	191	57
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	226	1603	275	43	1539	18	410	616	75	281	240	72
Arrive On Green	0.04	0.53	0.53	0.44	0.44	0.44	0.16	0.38	0.38	0.17	0.17	0.17
Sat Flow, veh/h	1781	3032	521	0	3524	40	1781	1635	200	1132	1383	413
Grp Volume(v), veh/h	59	585	587	650	0	589	295	0	248	69	0	248
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1869	0	1695	1781	0	1834	1132	0	1796
Q Serve(g_s), s	1.4	19.6	19.6	0.0	0.0	25.4	10.9	0.0	8.2	4.5	0.0	11.2
Cycle Q Clear(g_c), s	1.4	19.6	19.6	25.3	0.0	25.4	10.9	0.0	8.2	4.5	0.0	11.2
Prop In Lane	1.00		0.29	0.00		0.02	1.00		0.11	1.00		0.23
Lane Grp Cap(c), veh/h	226	939	939	859	0	740	410	0	691	281	0	311
V/C Ratio(X)	0.26	0.62	0.62	0.76	0.00	0.80	0.72	0.00	0.36	0.25	0.00	0.80
Avail Cap(c_a), veh/h	263	1356	1356	1257	0	1103	490	0	1031	440	0	563
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(l)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.8	14.0	14.0	20.5	0.0	20.5	22.6	0.0	19.0	30.8	0.0	33.5
Incr Delay (d2), s/veh	0.6	0.7	0.7	1.6	0.0	2.5	4.1	0.0	0.3	0.4	0.0	4.6
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(95%),veh/ln	1.0	11.5	11.5	15.8	0.0	14.8	8.4	0.0	6.2	2.3	0.0	9.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.4	14.7	14.7	22.1	0.0	23.0	26.7	0.0	19.3	31.2	0.0	38.1
LnGrp LOS	B	B	B	C	A	C	C	A	B	C	A	D
Approach Vol, veh/h		1231			1239			543				317
Approach Delay, s/veh		14.8			22.5			23.3				36.6
Approach LOS		B			C			C				D
Timer - Assigned Phs		2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s		35.9		48.7	17.2	18.7	7.7	40.9				
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s		47.5		64.5	17.0	26.5	5.5	55.0				
Max Q Clear Time (g_c+I1), s		10.2		21.6	12.9	13.2	3.4	27.4				
Green Ext Time (p_c), s		1.6		10.0	0.4	1.5	0.0	9.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				21.1								
HCM 6th LOS				C								

Queues

BLWC Closure-Existing (2023) Traffic Volumes

8: Belinder Avenue & Shawnee Mission Parkway

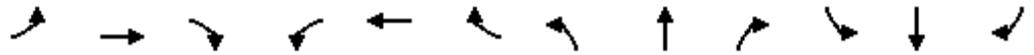
PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	85	1078	13	1984	33	103	95
v/c Ratio	0.38	0.41	0.03	0.82	0.14	0.57	0.33
Control Delay	15.6	5.8	3.2	16.1	35.1	57.2	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.6	5.8	3.2	16.1	35.1	57.2	13.3
Queue Length 50th (ft)	9	85	1	465	15	66	1
Queue Length 95th (ft)	57	217	6	690	46	131	49
Internal Link Dist (ft)		2716		1247	2825	855	
Turn Bay Length (ft)	130		120				90
Base Capacity (vph)	238	2925	422	2817	373	297	410
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.37	0.03	0.70	0.09	0.35	0.23

Intersection Summary

HCM 6th Signalized Intersection Summary BLWC Closure-Existing (2023) Traffic Volumes  
 8: Belinder Avenue & Shawnee Mission Parkway PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	1033	2	12	1871	34	5	18	9	83	16	91
Future Volume (veh/h)	82	1033	2	12	1871	34	5	18	9	83	16	91
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	1767	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	85	1076	2	12	1949	35	5	19	9	86	17	95
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	9	2	2	2	2	2	2
Cap, veh/h	242	2645	5	429	2468	44	55	123	49	188	30	191
Arrive On Green	0.05	0.73	0.73	0.01	0.69	0.69	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	3639	7	1781	3572	64	61	1016	404	925	248	1585
Grp Volume(v), veh/h	85	525	553	12	967	1017	33	0	0	103	0	95
Grp Sat Flow(s),veh/h/ln	1781	1777	1869	1781	1777	1859	1480	0	0	1173	0	1585
Q Serve(g_s), s	1.1	10.0	10.0	0.2	32.0	32.4	0.0	0.0	0.0	0.0	0.0	4.9
Cycle Q Clear(g_c), s	1.1	10.0	10.0	0.2	32.0	32.4	8.0	0.0	0.0	8.0	0.0	4.9
Prop In Lane	1.00		0.00	1.00		0.03	0.15		0.27	0.83		1.00
Lane Grp Cap(c), veh/h	242	1291	1358	429	1228	1284	226	0	0	218	0	191
V/C Ratio(X)	0.35	0.41	0.41	0.03	0.79	0.79	0.15	0.00	0.00	0.47	0.00	0.50
Avail Cap(c_a), veh/h	337	1683	1770	522	1617	1692	410	0	0	376	0	365
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(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.3	4.6	4.6	4.1	9.1	9.2	34.2	0.0	0.0	36.9	0.0	35.7
Incr Delay (d2), s/veh	0.9	0.2	0.2	0.0	2.0	2.0	0.3	0.0	0.0	1.6	0.0	2.0
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(95%),veh/ln	1.7	4.8	5.1	0.1	15.1	15.8	1.2	0.0	0.0	4.0	0.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.2	4.8	4.8	4.1	11.0	11.1	34.5	0.0	0.0	38.5	0.0	37.7
LnGrp LOS	B	A	A	A	B	B	C	A	A	D	A	D
Approach Vol, veh/h		1163			1996			33			198	
Approach Delay, s/veh		5.5			11.0			34.5			38.1	
Approach LOS		A			B			C			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.5	5.3	67.1		14.5	8.4	64.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		20.0	5.8	82.2		20.0	9.0	79.0				
Max Q Clear Time (g_c+I1), s		10.0	2.2	12.0		10.0	3.1	34.4				
Green Ext Time (p_c), s		0.1	0.0	8.8		0.6	0.1	25.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				10.9								
HCM 6th LOS				B								

## Queues

## BLWC Closure-Existing (2023) Traffic Volumes

## 9: Mission Road &amp; Shawnee Mission Parkway

PM Peak Hour



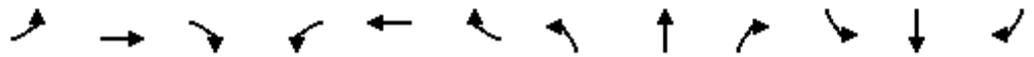
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	45	1104	255	1829	66	102	164	47	227
v/c Ratio	0.25	0.64	0.67	0.86	0.33	0.31	0.26	0.16	0.70
Control Delay	12.7	22.1	20.4	23.9	38.4	45.3	9.6	34.7	53.4
Queue Delay	0.0	0.0	0.9	47.8	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	22.1	21.3	71.7	38.4	45.3	9.6	34.7	53.4
Queue Length 50th (ft)	10	281	64	562	39	69	23	27	152
Queue Length 95th (ft)	24	430	152	734	76	122	65	59	241
Internal Link Dist (ft)		438		119		1367			964
Turn Bay Length (ft)	220		220		110		150	60	
Base Capacity (vph)	181	2127	535	2417	203	451	784	294	443
Starvation Cap Reductn	0	0	103	842	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.52	0.59	1.16	0.33	0.23	0.21	0.16	0.51

## Intersection Summary

HCM 6th Signalized Intersection Summary  
 9: Mission Road & Shawnee Mission Parkway

BLWC Closure-Existing (2023) Traffic Volumes

PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑	↗	↖	↗	
Traffic Volume (veh/h)	43	997	62	245	1733	23	63	98	157	45	150	68
Future Volume (veh/h)	43	997	62	245	1733	23	63	98	157	45	150	68
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	45	1039	65	255	1805	24	66	102	164	47	156	71
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	189	1886	118	407	2164	29	184	298	385	263	187	85
Arrive On Green	0.04	0.56	0.56	0.08	0.60	0.60	0.04	0.16	0.16	0.04	0.15	0.15
Sat Flow, veh/h	1781	3397	212	1781	3591	48	1781	1870	1585	1781	1217	554
Grp Volume(v), veh/h	45	543	561	255	892	937	66	102	164	47	0	227
Grp Sat Flow(s),veh/h/ln	1781	1777	1832	1781	1777	1862	1781	1870	1585	1781	0	1771
Q Serve(g_s), s	1.0	19.0	19.0	5.5	38.8	39.1	3.0	4.7	8.5	2.1	0.0	12.1
Cycle Q Clear(g_c), s	1.0	19.0	19.0	5.5	38.8	39.1	3.0	4.7	8.5	2.1	0.0	12.1
Prop In Lane	1.00		0.12	1.00		0.03	1.00		1.00	1.00		0.31
Lane Grp Cap(c), veh/h	189	986	1017	407	1071	1122	184	298	385	263	0	272
V/C Ratio(X)	0.24	0.55	0.55	0.63	0.83	0.84	0.36	0.34	0.43	0.18	0.00	0.84
Avail Cap(c_a), veh/h	231	989	1019	658	1282	1343	214	432	499	304	0	409
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	0.00	1.00
Uniform Delay (d), s/veh	15.8	13.8	13.8	11.1	15.4	15.4	33.3	36.3	31.0	32.8	0.0	39.9
Incr Delay (d2), s/veh	0.6	0.7	0.6	1.6	4.1	4.1	1.2	0.7	0.7	0.3	0.0	9.1
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(95%),veh/ln	0.7	11.5	11.8	3.6	21.1	22.1	2.4	4.0	5.8	1.7	0.0	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.4	14.5	14.5	12.7	19.5	19.5	34.5	37.0	31.8	33.1	0.0	49.0
LnGrp LOS	B	B	B	B	B	B	C	D	C	C	A	D
Approach Vol, veh/h		1149			2084			332			274	
Approach Delay, s/veh		14.6			18.7			33.9			46.3	
Approach LOS		B			B			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.6	19.5	12.1	57.9	8.2	18.9	7.5	62.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	5.8	22.4	21.8	54.0	5.8	22.4	5.8	70.0				
Max Q Clear Time (g_c+I1), s	4.1	10.5	7.5	21.0	5.0	14.1	3.0	41.1				
Green Ext Time (p_c), s	0.0	0.9	0.6	8.5	0.0	0.8	0.0	17.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				20.7								
HCM 6th LOS				C								