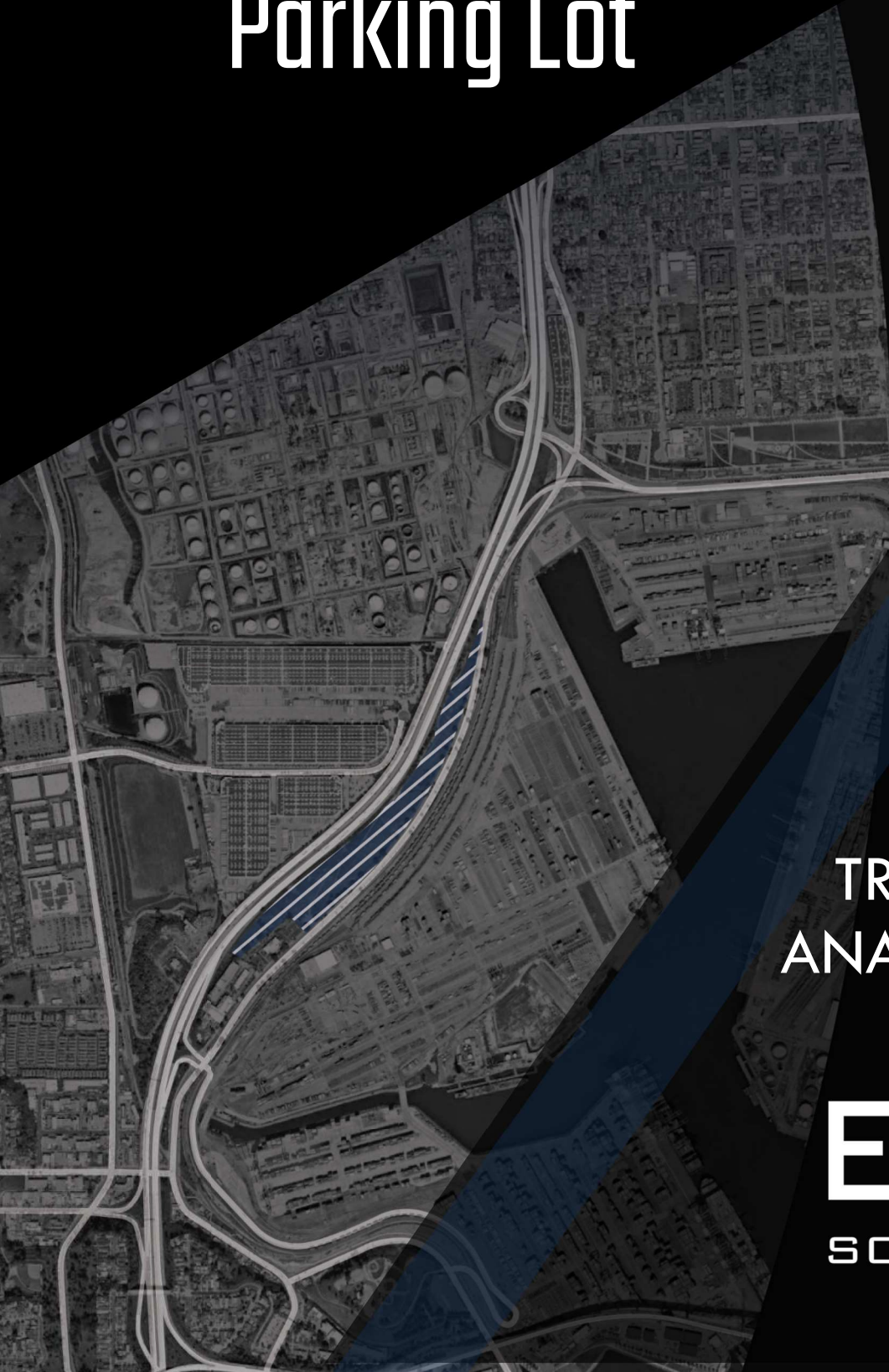


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APPENDIX J – TRAFFIC IMPACT ANALYSIS

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# Port of Los Angeles John S Gibson Truck Parking Lot



TRAFFIC IMPACT  
ANALYSIS REPORT

October 18, 2024

**E | P | D**  
SOLUTIONS, INC



# Port of Los Angeles John S Gibson Truck Parking Lot

## Traffic Impact Analysis

Los Angeles Department of Transportation

### Prepared For

LAHD Goods Movement  
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October 18, 2024



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# 1 EXECUTIVE SUMMARY

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This Traffic Impact Analysis (TIA) has been prepared by EPD Solutions, Inc. (EPD) to analyze the potential traffic deficiencies of the proposed John S Gibson Truck Parking Lot Project (Project) located at 1599 John S Gibson Boulevard in the city of Los Angeles. The TIA was prepared based on the approved scope of work which was reviewed by the Port of Los Angeles staff and is included as Appendix A.

The trip generation for the proposed development was analyzed utilizing the land use operation data provided by Port of Los Angeles staff. The projected trip generations for the proposed Project are approximated for both the estimated Opening Year (2028) and the Horizon Year (2045).

- For Opening Year 2028, the proposed Project is estimated to generate approximately 980 daily vehicle trips, 78 (39 inbound and 39 outbound) AM peak hour vehicle trips, 86 (43 inbound and 43 outbound) MD peak hour vehicle trips, and 38 (19 inbound and 19 outbound) PM peak hour vehicle trips.
- For Horizon Year 2045, the proposed Project is estimated to generate approximately 1,808 daily vehicle trips, 142 (71 inbound and 71 outbound) AM peak hour vehicle trips, 156 (78 inbound and 78 outbound) MD peak hour vehicle trips, and 64 (32 inbound and 32 outbound) PM peak hour vehicle trips.

## Intersection Analysis

The following study area intersections were evaluated during the AM, MD, and PM peak hours:

1. John S Gibson Boulevard/W Harry Bridges Boulevard
2. John S Gibson Boulevard/I-110 NB Ramps
3. John S Gibson Boulevard/Project Driveway

AM, MD, and PM peak hour traffic operations were evaluated for the following scenarios:

1. Existing 2024 Conditions
2. Opening Year 2028 Without Project Conditions
3. Horizon Year 2045 Without Project Conditions
4. Opening Year 2028 Plus Project Conditions
5. Horizon Year 2045 Plus Project Conditions

## Existing 2024 Intersection Analysis Results

The study intersections operate at a satisfactory LOS during AM, MD, and PM peak hours under Existing 2024 conditions.

## Opening Year 2028 Without Project Intersection Analysis Results

The study intersections are anticipated to operate at a satisfactory LOS during AM, MD, and PM peak hours under Opening Year 2028 Without Project conditions.

### **Horizon Year 2045 Without Project Intersection Analysis Results**

The study intersections are anticipated to operate at a satisfactory LOS during AM, MD, and PM peak hours under Horizon Year 2045 Without Project conditions.

### **Opening Year 2028 Plus Project Intersection Analysis Results**

The study intersections are anticipated to operate at a satisfactory LOS during AM, MD, and PM peak hours under Opening Year 2028 Plus Project conditions.

### **Horizon Year 2045 Plus Project Intersection Analysis Results**

The study intersections are anticipated to operate at a satisfactory LOS during AM, MD, and PM peak hours under Horizon Year 2045 Plus Project conditions.

### **Intersection Analysis Conclusion**

In conclusion, the study intersections are anticipated to operate at a satisfactory LOS during AM, MD, and PM under all study scenarios, and no improvements would be required at the study intersections.



## 2 INTRODUCTION

---

### 2.1 Project Description

The proposed Project is located at 1599 John S Gibson Boulevard in the community of San Pedro in the southwestern portion of the city of Los Angeles within the Port of Los Angeles Master Plan planning area. The Project site is identified by Assessor's Parcel Numbers (APN) 7440-016-001, -002, -003, and 7412-024-007, totaling an area of 18.635 acres. The development proposes the construction of a short-term trailer parking facility and related site improvements. The Project includes paving of the site and striping of 393 trailer stalls.

The Project site is connected to John S Gibson Boulevard via a full access driveway with a length of 850 feet. Access to the Project site is provided by State Route 47 (SR-47) and Long Beach Freeway (I-710) to the east, Harbor Freeway (I-110) to the west, and San Diego Freeway (I-405) to the north. The location of the Project site is shown in Figure 2.1 and the Project site plan is shown in Figure 2.2.

Figure 2.1: Project Location





## 2.2 Study Area and Analysis Scenarios

The study area was established based on the scope of work which was reviewed and approved by Port of Los Angeles staff, and is included as Appendix A. This TIA includes the analysis of the following intersections:

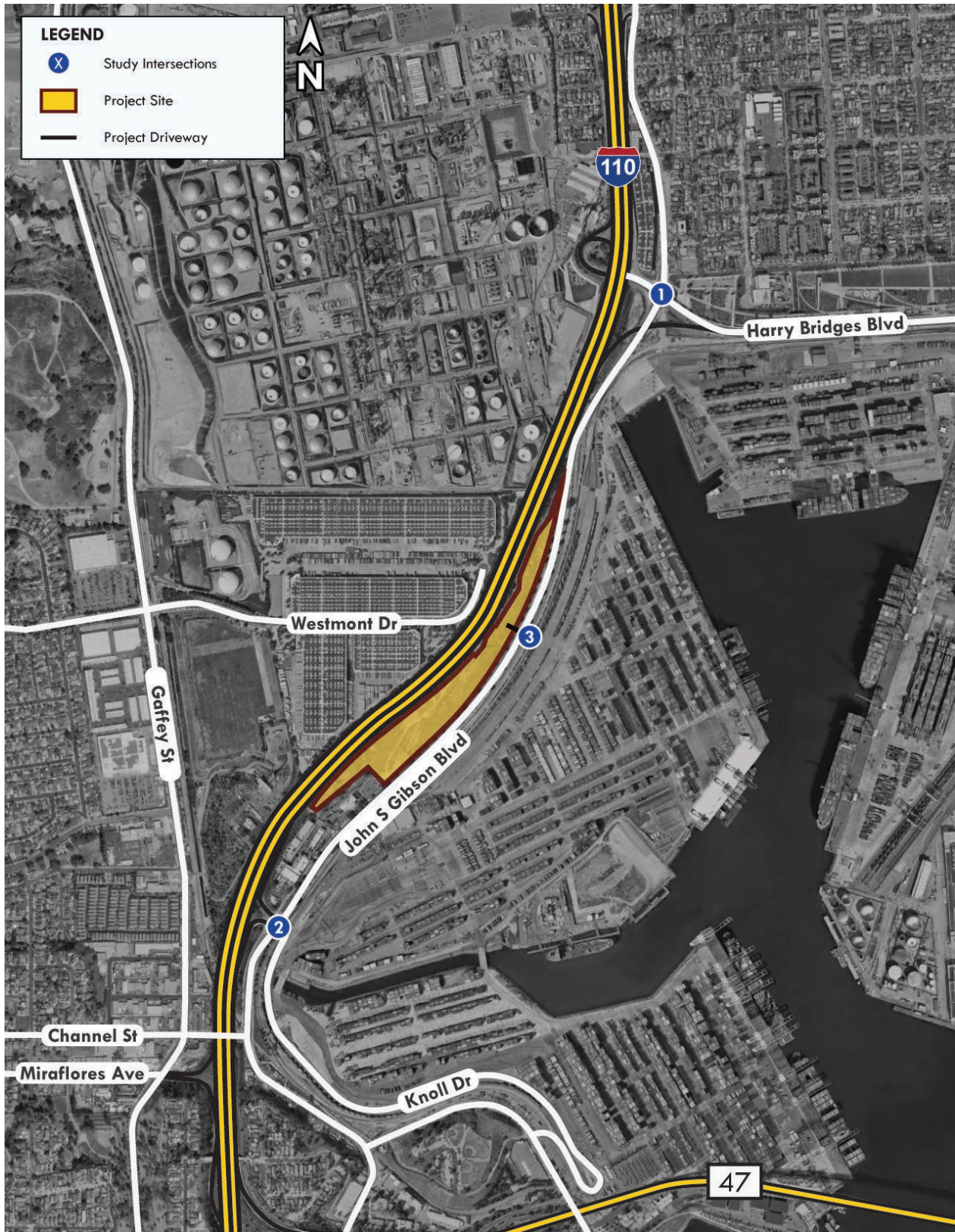
1. John S Gibson Boulevard/W Harry Bridges Boulevard
2. John S Gibson Boulevard/I-110 NB Ramps
3. John S Gibson Boulevard/Project Driveway

The location of the study intersections are shown in Figure 2.3. The study intersections were evaluated during the morning (AM), midday (MD), and afternoon (PM) peak hours, which are defined as the hours with the highest traffic volumes during 8 AM to 9 AM, 2 PM to 3 PM, and 4 PM to 5 PM, respectively. AM, MD, and PM peak hour traffic operations were evaluated for the following scenarios:

- Existing 2024 Conditions
- Opening Year 2028 Conditions
- Horizon Year 2045 Conditions



Figure 2.3: Project Study Intersections





## 2.3 Methodology

Intersection operations are evaluated using level of service (LOS), which is a measure of the delay experienced by drivers on a roadway facility. LOS A indicates free-flow traffic conditions and is generally the best operating conditions. LOS F indicates extremely congested conditions and the worst operating conditions from the driver's perspective. In this report, LOS at signalized and unsignalized intersections were calculated using the *Highway Capacity Manual (HCM), 7th Edition*, methodology.

LOS at signalized intersections is defined in terms of the weighted average control delay for the intersection. Control delay is a measure of the increase in travel time that is experienced due to traffic signal control and is expressed in terms of average control delay per vehicle (in seconds). Control delay is determined based on the intersection geometry and volume, signal cycle length, phasing, and coordination along the arterial corridor. Table 2.1 shows the relationship between control delay and LOS.

**Table 2.1: Relationship between Delay and LOS at Signalized Intersections**

LOS	Delay (Seconds per Vehicle)
A	$\leq 10$
B	$>10 - 20$
C	$>20 - 35$
D	$>35 - 55$
E	$>55 - 80$
F	$>80$

## 2.4 Significance Criteria

### City of Los Angeles

The LOS criteria is based on Section 3.3 of the City of Los Angeles *Transportation Assessment Guidelines* which states that intersections shall maintain LOS D or better during peak periods.<sup>1</sup>

For the purpose of this analysis, the Project would cause an intersection to be significantly deficient if:

- An intersection is operating at a satisfactory LOS and the addition of Project traffic causes the intersection to deteriorate to an unsatisfactory LOS E or F (direct deficiency); or
- An intersection operating at unsatisfactory LOS E or F without Project traffic and the addition of Project traffic would increase the delay (cumulative deficiency).

The Project would be fully responsible for all direct deficiencies and would be responsible for a fair-share contribution for all cumulative deficiencies.

---

<sup>1</sup> Los Angeles Department of Transportation. (July 2020). *Transportation Assessment Guidelines*. [https://ladot.lacity.gov/sites/default/files/documents/2020-transportation-assessment-guidelines\\_final\\_2020.07.27\\_0.pdf](https://ladot.lacity.gov/sites/default/files/documents/2020-transportation-assessment-guidelines_final_2020.07.27_0.pdf)

## 3 BASELINE CONDITIONS

---

This section discusses the Baseline (without Project) traffic conditions. Baseline conditions are those conditions that exist within the study area under existing conditions as well as future estimated conditions without the traffic from the proposed Project.

### 3.1 Existing Transportation System and Access

As described under Section 2.1, *Project Description*, regional access to the proposed Project is provided by SR-47 and Long Beach Freeway (I-710) to the east, Harbor Freeway (I-110) to the west, and San Diego Freeway (I-405) to the north. The characteristics of each regional access roadway per the Los Angeles roadway classification in the Mobility Element of the City's General Plan are discussed below:<sup>2</sup>

- **State Route 47 (SR-47)** is a north-south oriented State highway that connects Terminal Island to the mainland in the Los Angeles area.
- **Long Beach Freeway (I-710)** is a major north-south freeway in the Los Angeles metropolitan area of Southern California which connects the Ports of Los Angeles and Long Beach to East Los Angeles.
- **Harbor Freeway (I-110)** is a major north-south freeway located in the Los Angeles metropolitan area of Southern California. The entire route connects San Pedro and the Port of Los Angeles with Downtown Los Angeles and Pasadena.
- **San Diego Freeway (I-405)** is a major north-south freeway spanning the southern and western regions of the Greater Los Angeles metropolitan area.

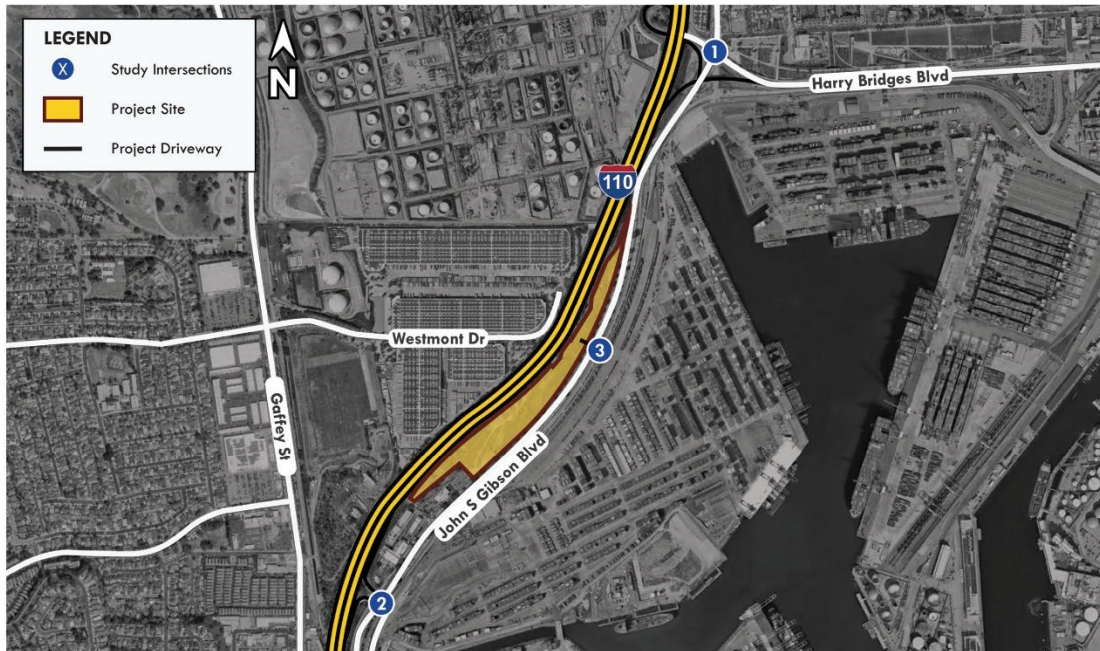
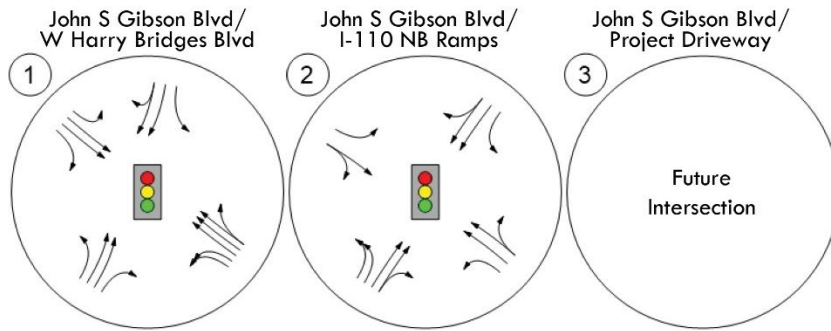
Local access to the proposed Project is provided by John S Gibson Blvd, and Harry Bridges Blvd to the north. The existing traffic control and intersection geometrics at study area intersections are shown in Figure 3.1. The characteristics of each local access roadway are discussed below:

- **John S Gibson Blvd** is designated as a Boulevard II road according to City's General Plan. In the vicinity of the study area, John S Gibson Blvd features four lanes between I-110 NB Ramps and Harry Bridges Blvd. There are Tier 2 bike lanes on both sides of John S Gibson Blvd. There are no on-street parking or bus routes on John S Gibson Blvd. The posted speed limit is 40 mph on John S Gibson Blvd.
- **Harry Bridges Blvd** is designated as a Boulevard II road according to City's General Plan. In the vicinity of the study area, Harry Bridges Blvd features six lanes between John S Gibson Blvd and King Ave. There are no bike lanes on either sides of Harry Bridges Blvd. There are no on-street parking or bus routes on Harry Bridges Blvd. The posted speed limit is 45 mph on Harry Bridges Blvd.

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<sup>2</sup> City of Los Angeles. (2016). *Mobility Plan 2035*. Approved by City Planning Commission June 23, 2016; adopted by City Council September 7, 2016. [https://planning.lacity.org/odocument/523f2a95-9d72-41d7-aba5-1972f84c1d36/Mobility\\_Plan\\_2035.pdf](https://planning.lacity.org/odocument/523f2a95-9d72-41d7-aba5-1972f84c1d36/Mobility_Plan_2035.pdf)

**Figure 3.1: Existing Lane Geometries and Traffic Control**



### 3.2 Existing 2024 Traffic Volumes and Intersection Operations

The traffic counts for Existing 2024 conditions analysis were collected on March 4, 2024. All traffic count sheets are provided in Appendix B. Counts were collected for the following intersections:

1. John S Gibson Boulevard/W Harry Bridges Boulevard
2. John S Gibson Boulevard/I-110 NB Ramps

For Intersection 3, John S Gibson Boulevard/Project Driveway, the proposed Project driveway is currently undeveloped; therefore, there are no conflicting movements to analyze in the existing baseline condition besides U-turn movement on southbound John S Gibson Boulevard. The U-turn movement counts for existing conditions analysis were collected on August 26, 2024. No U-turns were observed during the 24-hour period; therefore, Intersection 3, John S Gibson Boulevard/Project Driveway, would not be analyzed under baseline conditions.

Existing 2024 AM, MD, and PM peak hour traffic volumes at the study area intersections are shown in Figure 3.2, 3.3, and 3.4, respectively. As described previously in Section 2.3, Methodology, LOS at the study area intersections were determined using the HCM methodology. The existing 2024 LOS in the study area are shown in Table 3.1. All LOS calculations are provided in Appendix C. As shown in Table 3.1, all study intersections are currently operating at satisfactory LOS under existing 2024 conditions.

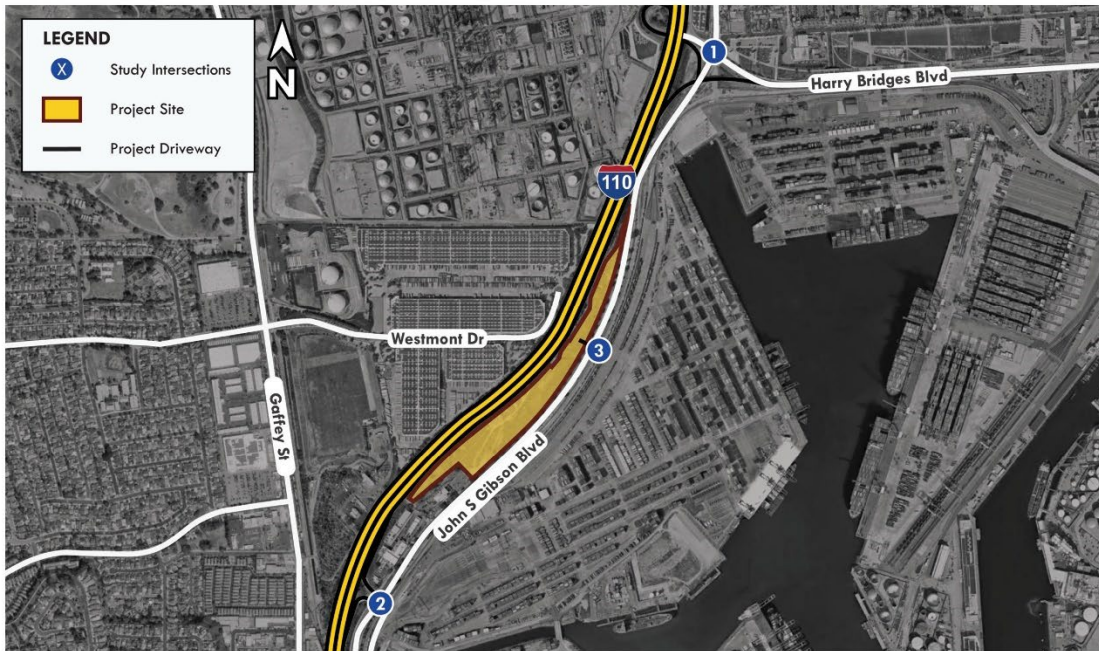
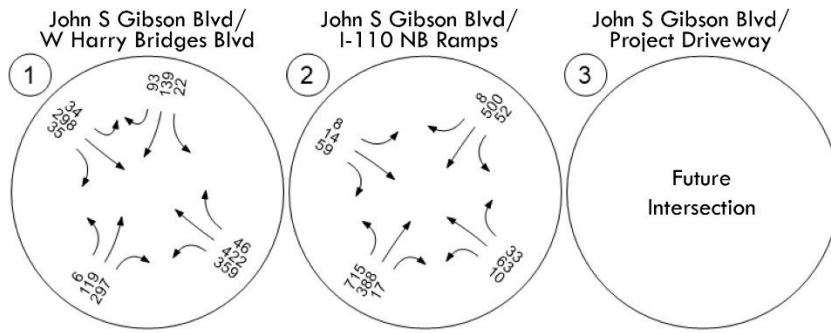
**Table 3.1: Existing 2024 AM, MD and PM Peak Hour Level of Service**

Intersection	Jurisdiction	Control Type	Existing						LOS Standards	Satisfactory?
			AM Peak		MD Peak		PM Peak			
			Delay	LOS	Delay	LOS	Delay	LOS		
1. John S Gibson Blvd and W Harry Bridges Blvd	City of LA	Signal	11.3	B	11.0	B	11.8	B	D	Yes
2. John S Gibson Blvd and I-110 NB Ramps	Caltrans/City of LA	Signal	18.7	B	12.9	B	13.1	B	D	Yes
3. John S Gibson Blvd and Project Driveway	City of LA	Signal	-	-	-	-	-	-	-	-

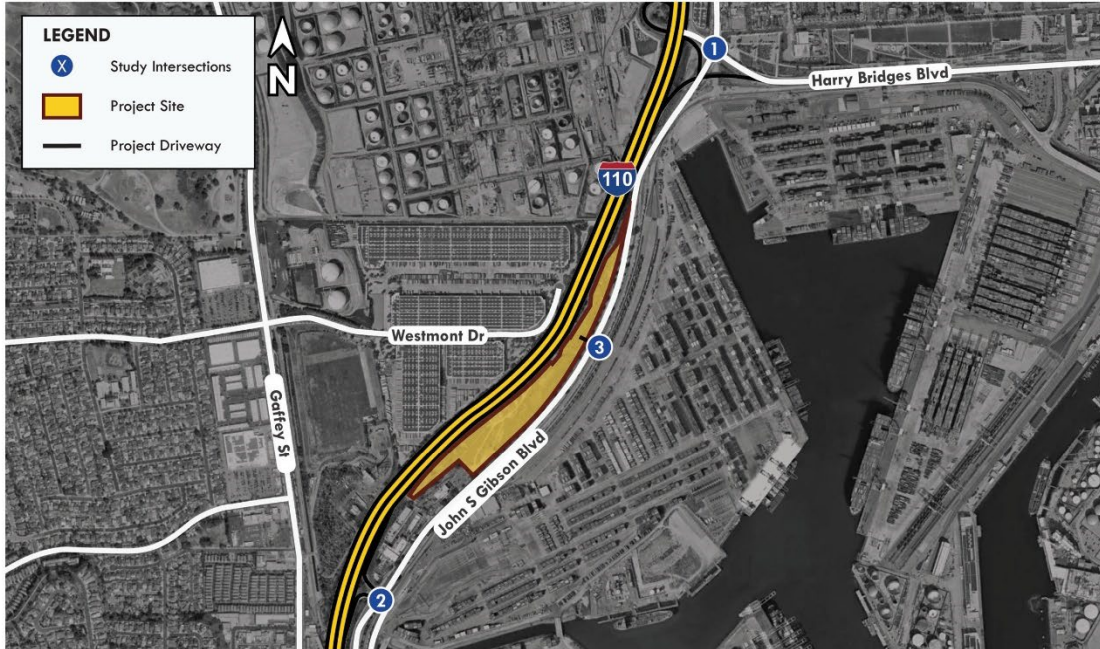
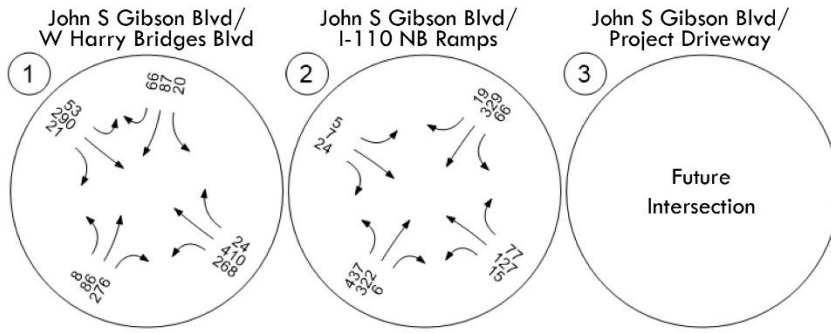
Delay Reported in Seconds per Vehicle  
 LOS = Level of Service  
 Unsatisfactory Level of Service



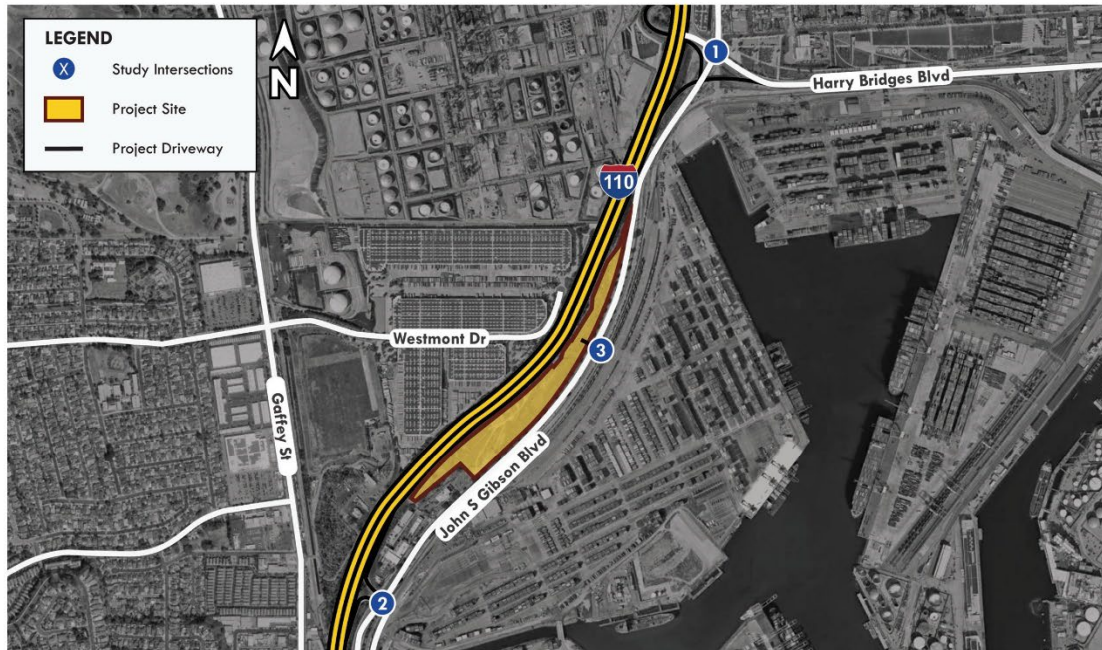
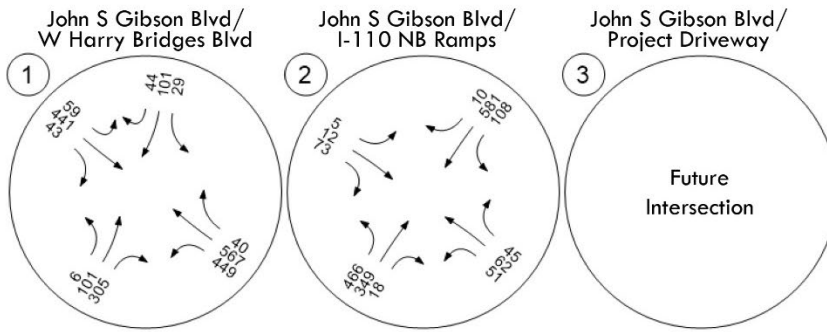
**Figure 3.2: Existing AM Peak Hour Volumes**



**Figure 3.3: Existing MD Peak Hour Volumes**



**Figure 3.4: Existing PM Peak Hour Volumes**



### 3.3 Opening Year 2028 Without Project Traffic Volumes and Intersection Operations

Opening Year 2028 Without Project traffic volumes were provided to EPD by Port of Los Angeles staff on July 19, 2024. Opening year 2028 AM, MD, and PM peak hour traffic volumes at the study area intersection are shown in Figure 3.5, Figure 3.6, and Figure 3.7, respectively.

As described previously in Section 2.3, *Methodology*, LOS at the study area intersections were determined using the HCM methodology. The Opening Year 2028 LOS in the study area are shown in Table 3.2. All LOS calculations are provided in Appendix C. As shown in Table 3.2, all 3 study intersections are anticipated to operate at satisfactory LOS under Opening Year 2028 conditions.

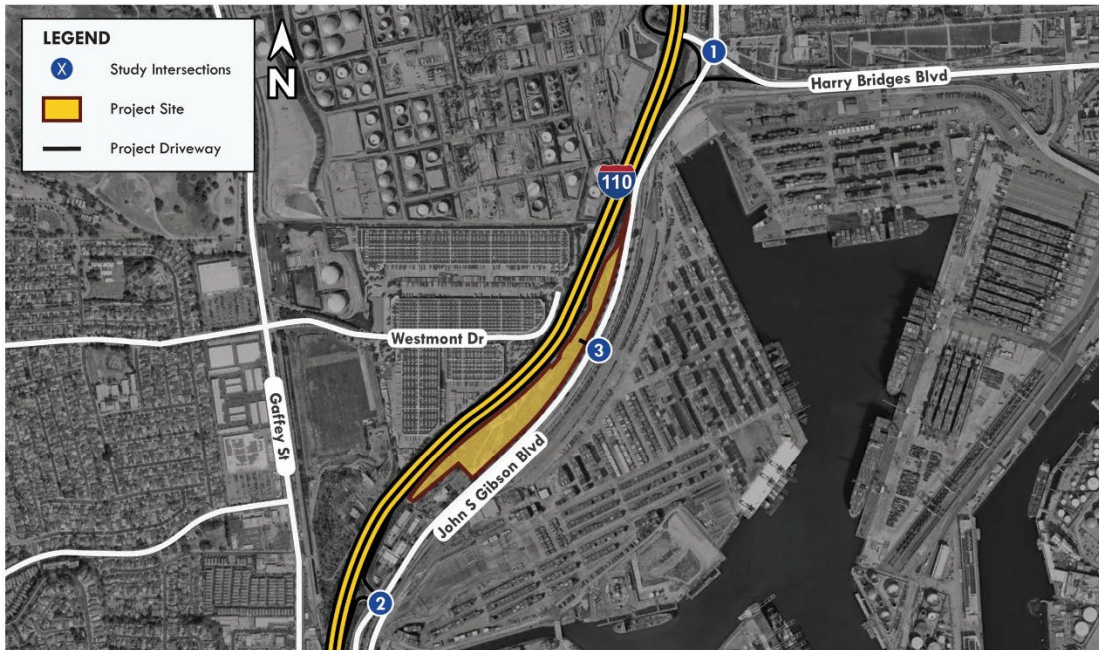
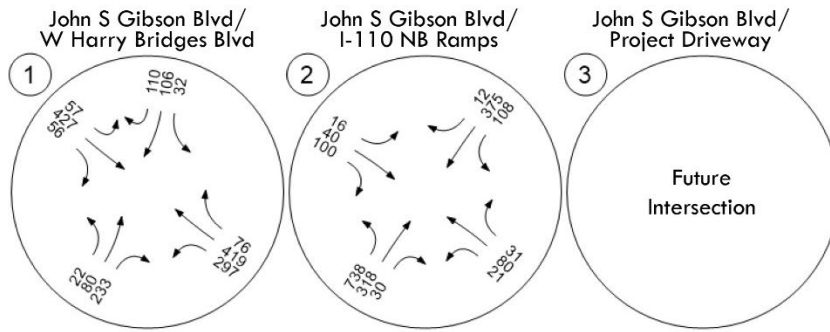
**Table 3.2: Opening Year 2028 AM, MD and PM Peak Hour Level of Service**

Intersection	Jurisdiction	Control Type	Opening Year						LOS Standards	Satisfactory?
			AM Peak		MD Peak		PM Peak			
			Delay	LOS	Delay	LOS	Delay	LOS		
1. John S Gibson Blvd and W Harry Bridges Blvd	City of LA	Signal	10.5	B	11.0	B	12.0	B	D	Yes
2. John S Gibson Blvd and I-110 NB Ramps	Caltrans/City of LA	Signal	12.8	B	16.9	B	10.7	B	D	Yes
3. John S Gibson Blvd and Project Driveway	City of LA	Signal	-	-	-	-	-	-	-	-

Delay Reported in Seconds per Vehicle  
 LOS = Level of Service  
 Unsatisfactory Level of Service

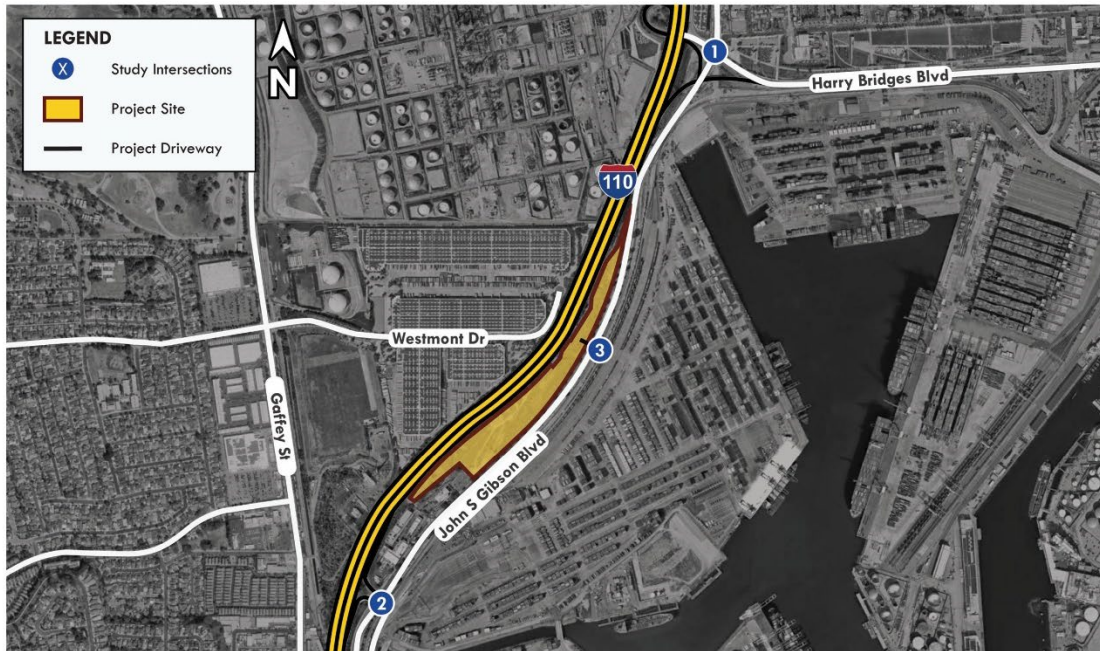
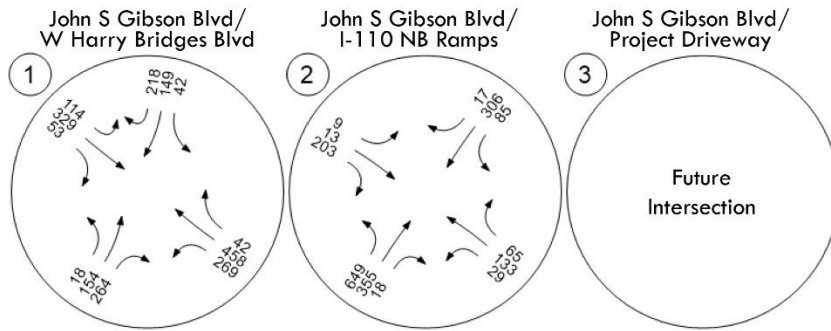


**Figure 3.5: Opening Year AM Peak Hour Volumes**

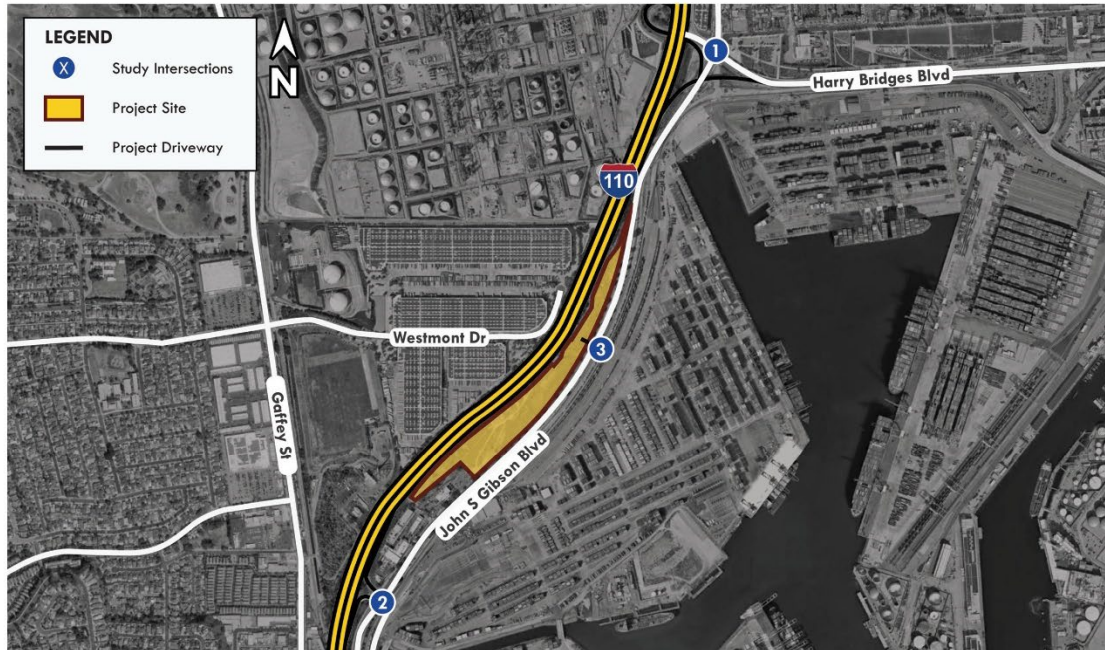
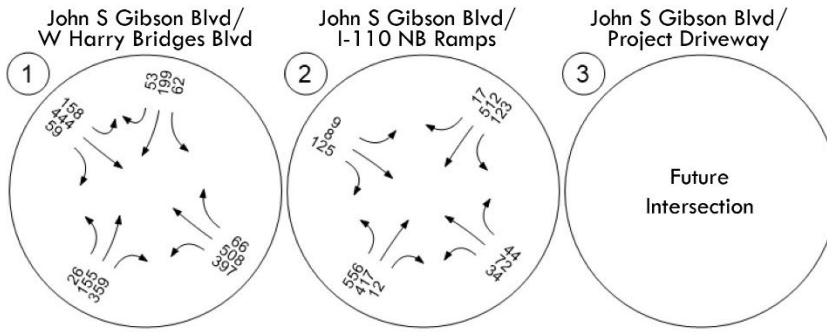




**Figure 3.6: Opening Year MD Peak Hour Volumes**



**Figure 3.7: Opening Year PM Peak Hour Volumes**



### 3.4 Horizon Year 2045 Without Project Traffic Volumes and Intersection Operations

Horizon Year 2045 Without Project traffic volumes were provided to EPD by Port of Los Angeles staff on July 19, 2024. Horizon Year 2045 AM, MD, and PM peak hour traffic volumes at the study area intersection are shown in Figure 3.8, Figure 3.9, and Figure 3.10, respectively.

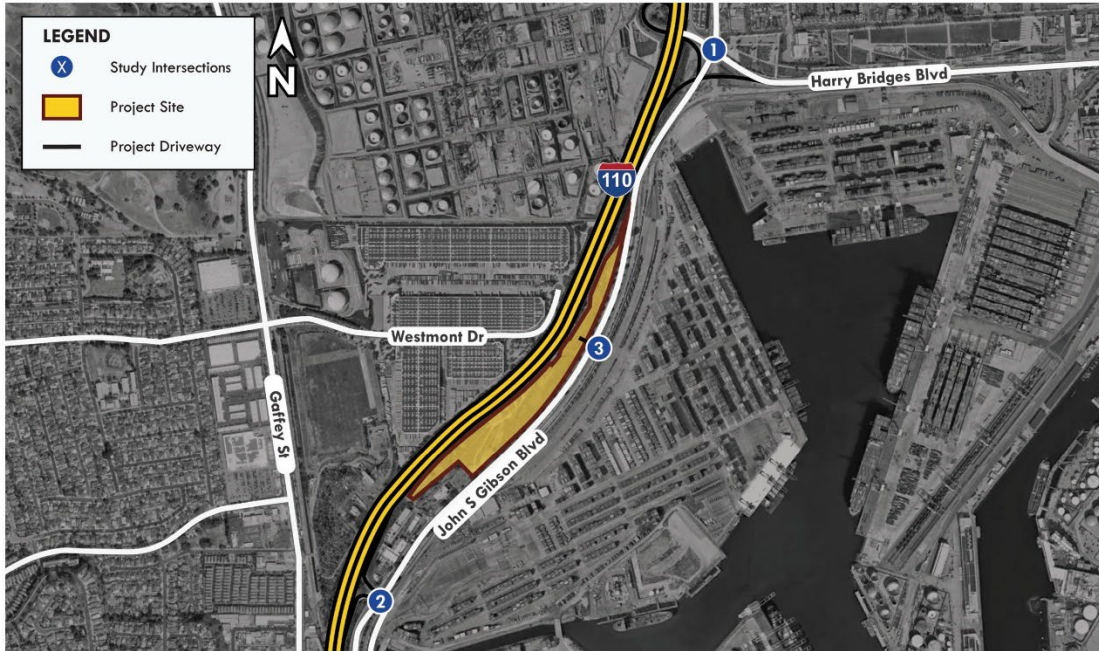
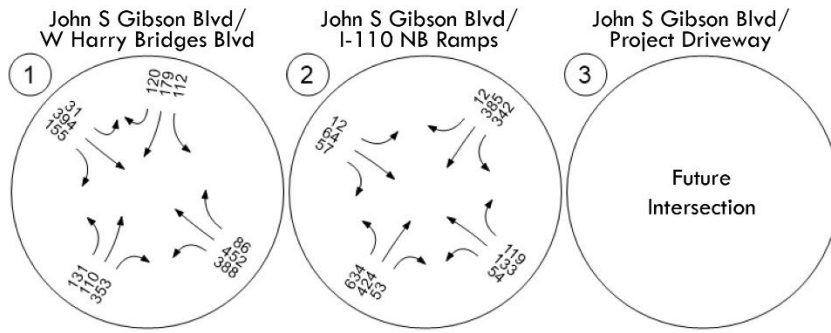
As described previously in Section 2.3, *Methodology*, LOS at the study area intersections were determined using the HCM methodology. The Horizon Year 2045 LOS in the study area are shown in Table 3.2. All LOS calculations are provided in Appendix C. As shown in Table 3.3, all three study intersections are anticipated to operate at satisfactory LOS under Horizon Year 2045 conditions.

**Table 3.3: Horizon Year 2045 AM, MD and PM Peak Hour Level of Service**

Intersection	Jurisdiction	Control Type	Horizon Year						LOS Standards	Satisfactory?
			AM Peak		MD Peak		PM Peak			
			Delay	LOS	Delay	LOS	Delay	LOS		
1. John S Gibson Blvd and W Harry Bridges Blvd	City of LA	Signal	12.6	B	12.7	B	15.4	B	D	Yes
2. John S Gibson Blvd and I-110 NB Ramps	Caltrans/City of LA	Signal	25.9	C	38.7	D	23.1	C	D	Yes
3. John S Gibson Blvd and Project Driveway	City of LA	Signal	-	-	-	-	-	-	-	-

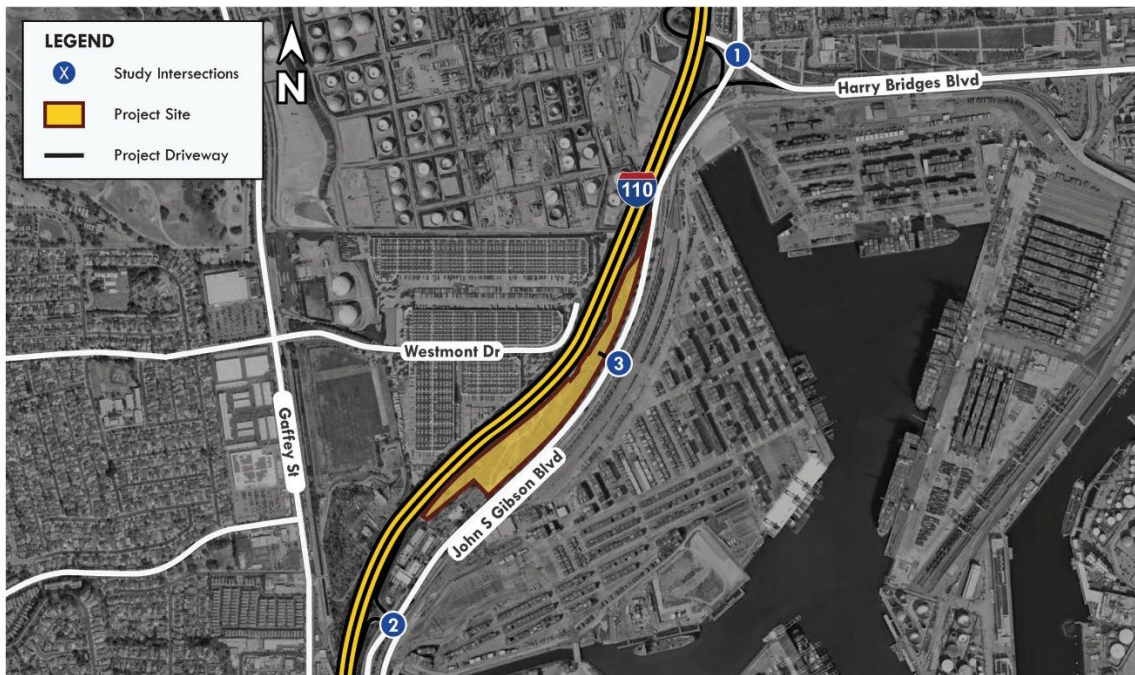
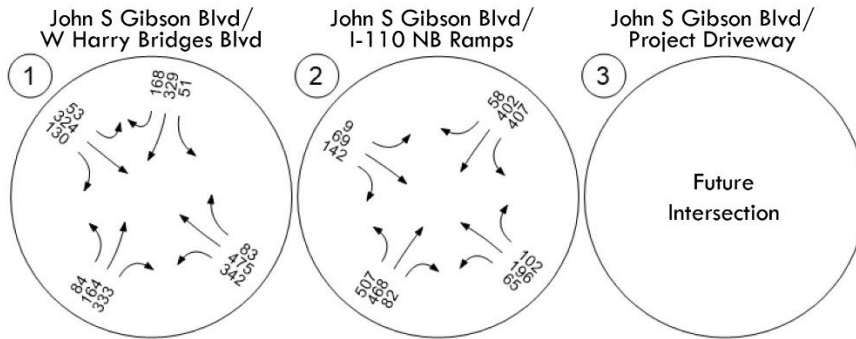
Delay Reported in Seconds per Vehicle  
 LOS = Level of Service  
 Unsatisfactory Level of Service

**Figure 3.8: Horizon Year AM Peak Hour Volumes**

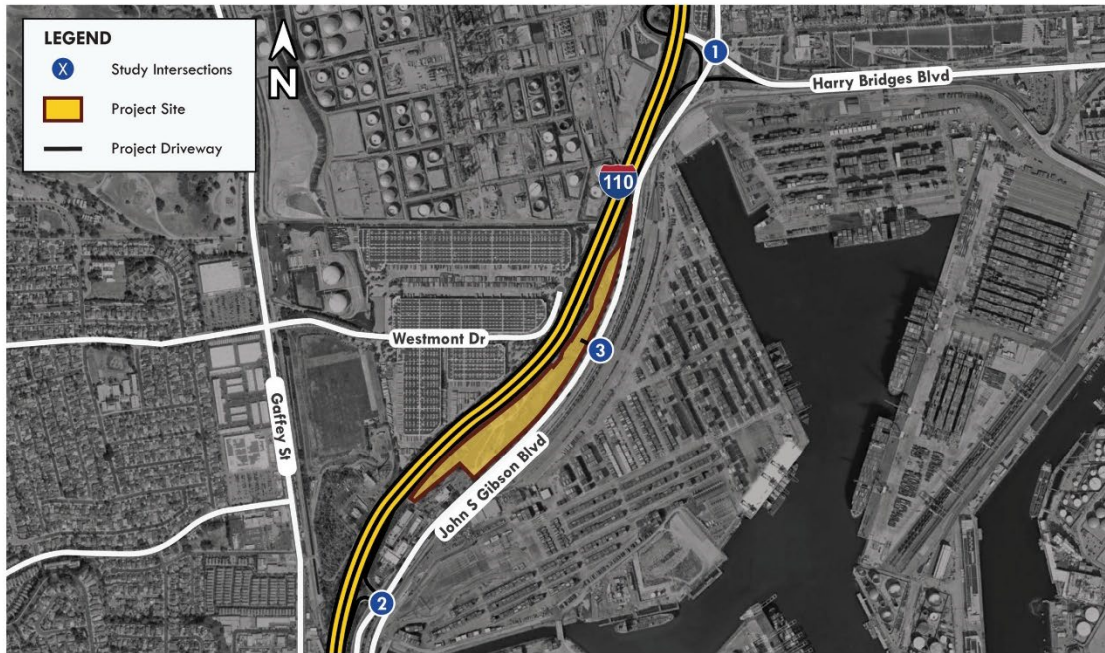
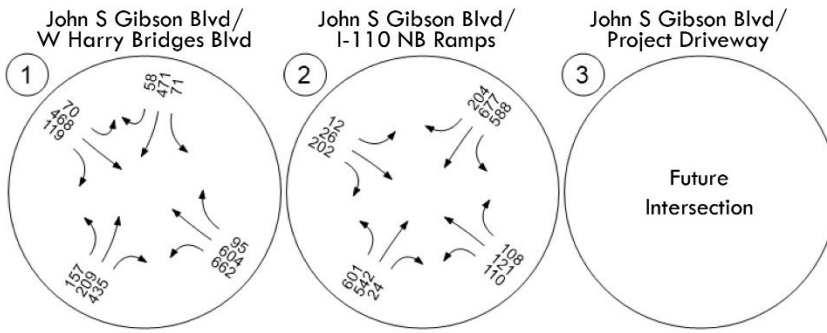




**Figure 3.9: Horizon Year MD Peak Hour Volumes**



**Figure 3.10: Horizon Year PM Peak Hour Volumes**



# 4 PROPOSED PROJECT

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## 4.1 Project Trip Generation

Opening Year 2028 Project trip generation was calculated based on survey data taken at the Port of Los Angeles with the following steps:

1. Driveway counts were taken at a similar facility as the Project in the Port of Los Angeles.
2. The driveway counts from this site were utilized to develop a trips-per-acre ratio for each vehicle class (Bobtail and Chassis).
3. The trip rates are applied to the Project size of 18.635 acres to calculate the number of trips the project would generate for each vehicle class.
4. The AM, MD & PM peak hour truck trips and daily vehicle trips are calculated.

The data used to develop the trip generation rates for the Project are included in Appendix D.

For Opening Year 2028, the proposed Project is estimated to generate approximately 980 daily vehicle trips, 78 (39 inbound and 39 outbound) AM peak hour vehicle trips, 86 (43 inbound and 43 outbound) MD peak hour vehicle trips, and 38 (19 inbound and 19 outbound) PM peak hour vehicle trips.

The Horizon Year 2045 Project trip generation is developed by applying a growth rate to the Opening Year 2028 Project trip generation that is consistent with the estimated growth of the Port Operations provided to EPD by the Port of Los Angeles staff. For Horizon Year 2045, the proposed Project is estimated to generate approximately 1,808 daily vehicle trips, 142 (71 inbound and 71 outbound) AM peak hour vehicle trips, 156 (78 inbound and 78 outbound) MD peak hour vehicle trips, and 64 (32 inbound and 32 outbound) PM peak hour vehicle trips.

Table 4.1 and Table 4.2 present the estimated proposed Project trip generations for Opening Year 2028 and Horizon Year 2045, respectively.

**Table 4.1: Project Trip Generation for Opening Year 2028**

Land Use	Units	Daily	AM Peak Hour			MD Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total	In	Out	Total
<b><u>Total Vehicle Trip Generation</u></b>											
Proposed Trailer Storage Lot	18.635	Acre									
<b><u>Vehicle Mix</u><sup>1</sup></b>											
Employee Auto		10	2	2	4	1	1	2	2	2	4
Vendor Auto		4	0	0	0	2	2	4	0	0	0
Bobtail Truck		483	27	10	37	13	27	40	8	9	17
Chassis Truck		483	10	27	37	27	13	40	9	8	17
<b>Total Trip Generation</b>		<b>980</b>	<b>39</b>	<b>39</b>	<b>78</b>	<b>43</b>	<b>43</b>	<b>86</b>	<b>19</b>	<b>19</b>	<b>38</b>

<sup>1</sup>Trip rates and vehicle mix from Port of Los Angeles, Goods Movement Division

**Table 4.2: Project Trip Generation for Horizon Year 2045**

Land Use	Units	Daily	AM Peak Hour			MD Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total	In	Out	Total
<b><u>Total Vehicle Trip Generation</u></b>											
Proposed Trailer Storage Lot	18.635	Acre									
<b><u>Vehicle Mix</u><sup>1</sup></b>											
Employee Auto		10	2	2	4	1	1	2	2	2	4
Vendor Auto		4	0	0	0	2	2	4	0	0	0
Bobtail Truck		897	50	19	69	25	50	75	14	16	30
Chassis Truck		897	19	50	69	50	25	75	16	14	30
<b>Total Trip Generation</b>		<b>1808</b>	<b>71</b>	<b>71</b>	<b>142</b>	<b>78</b>	<b>78</b>	<b>156</b>	<b>32</b>	<b>32</b>	<b>64</b>

<sup>1</sup>Trip rates and vehicle mix from Port of Los Angeles, Goods Movement Division

## 4.2 Project Trip Distribution and Assignment

Project trips were distributed to study area intersections based on the location of the Project and logical routes of travel to and from the site and were approved by the Port of Los Angeles staff.

Project daily inbound and outbound trip distribution is shown in Figure 4.1 and Figure 4.2, respectively. Intersection lane configuration and traffic control post-project completion are shown in Figure 4.3. Access to the Project would be via the signalized intersection with a newly proposed signal at the intersection of John S Gibson Boulevard and the Project Driveway.

Additional Project trip distribution figures for AM, MD, and PM time periods are included in Appendix E.

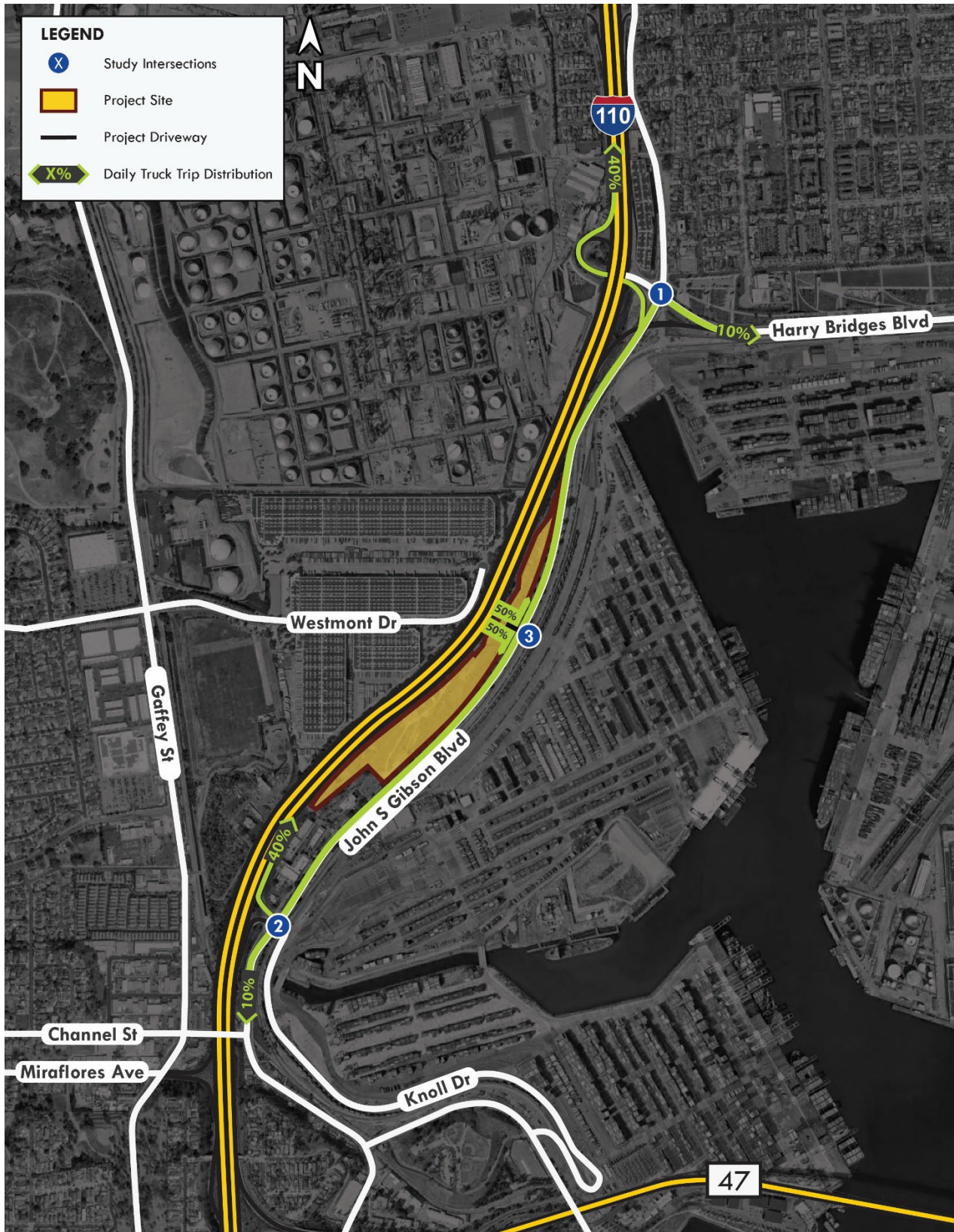


Figure 4.1: Project Daily Inbound Trip Distribution





Figure 4.2: Project Daily Outbound Trip Distribution



**Figure 4.3: Post-Project Completion Intersection Lane Configuration and Traffic Control**



# 5 PLUS PROJECT CONDITIONS

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## 5.1 Opening Year 2028 Plus Project Conditions

Opening Year 2028 Plus Project traffic volumes were determined by adding the Project trips to the Opening Year 2028 Without Project traffic volumes. Opening Year 2028 Plus Project AM, MD, and PM peak hour traffic volumes at the study area intersections are shown in Figure 5.1, Figure 5.2, and Figure 5.3, respectively.

As described previously in Section 2.3, *Methodology*, LOS at the study area intersections were determined using the HCM methodology. The Opening Year 2028 Plus Project LOS in the study area are shown in Table 5.1. All LOS calculations are provided in Appendix C. As shown in Table 5.1, all three study intersections are anticipated to operate satisfactory LOS under Opening Year 2028 Plus Project conditions.

**Table 5.1: Opening Year 2028 Plus Project AM MD and PM Peak Hour LOS**

Intersection			Opening Year						Opening Year Plus Project						Difference			LOS Standards	Satisfactory?	
			AM Peak		MD Peak		PM Peak		AM Peak		MD Peak		PM Peak		AM Peak	MD Peak	PM Peak			
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS						
1.	John S Gibson Blvd and W Harry Bridges Blvd	City of LA	Signal	10.5	B	11.0	B	12.0	B	10.5	B	11.0	B	12.0	B	0.0	0.0	0.0	D	Yes
2.	John S Gibson Blvd and I-110 NB Ramps	Caltrans/City of LA	Signal	12.8	B	16.9	B	10.7	B	13.0	B	23.6	C	10.8	B	0.2	6.7	0.1	D	Yes
3.	John S Gibson Blvd and Project Driveway	City of LA	Signal	-	-	-	-	-	-	9.2	A	28.5	C	11.1	B	-	-	-	D	Yes

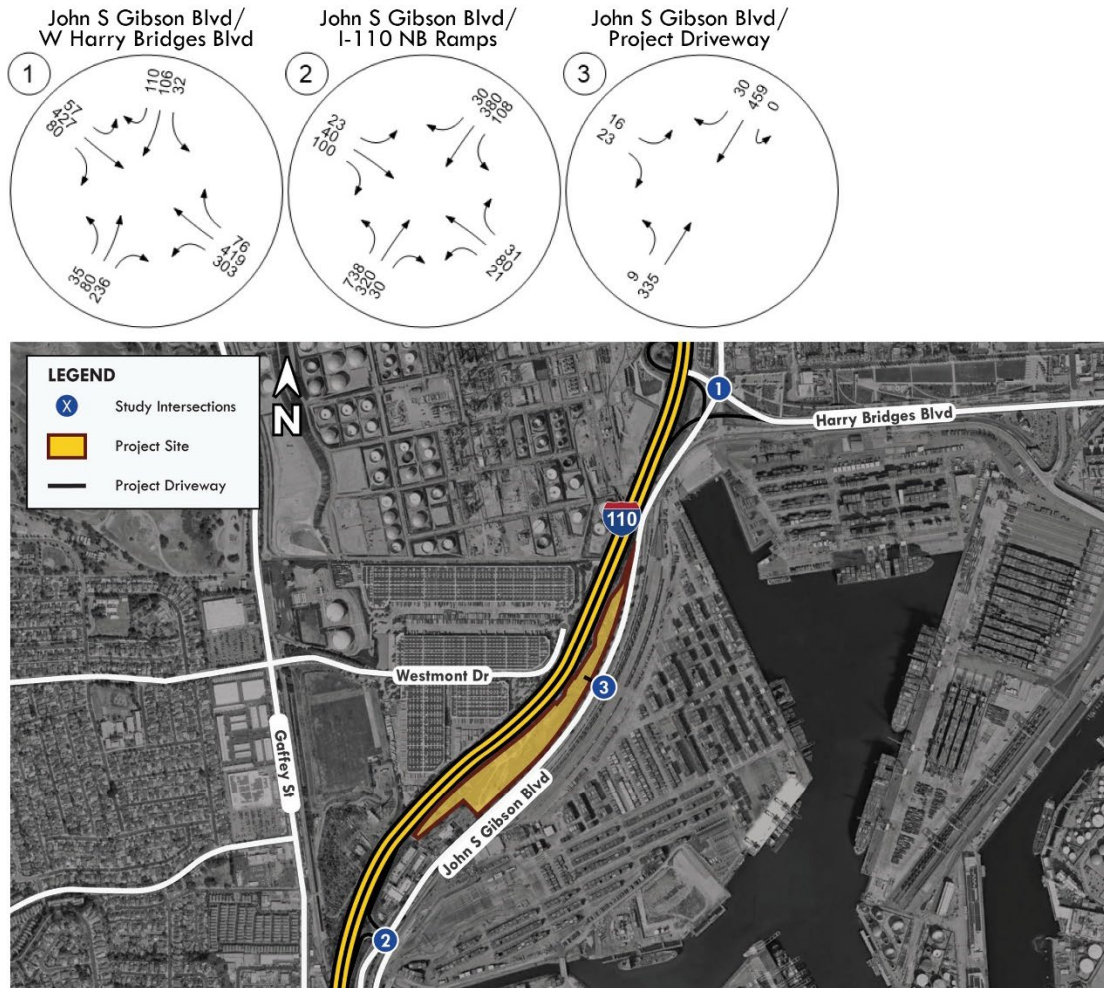
Delay Reported in Seconds per Vehicle

LOS = Level of Service

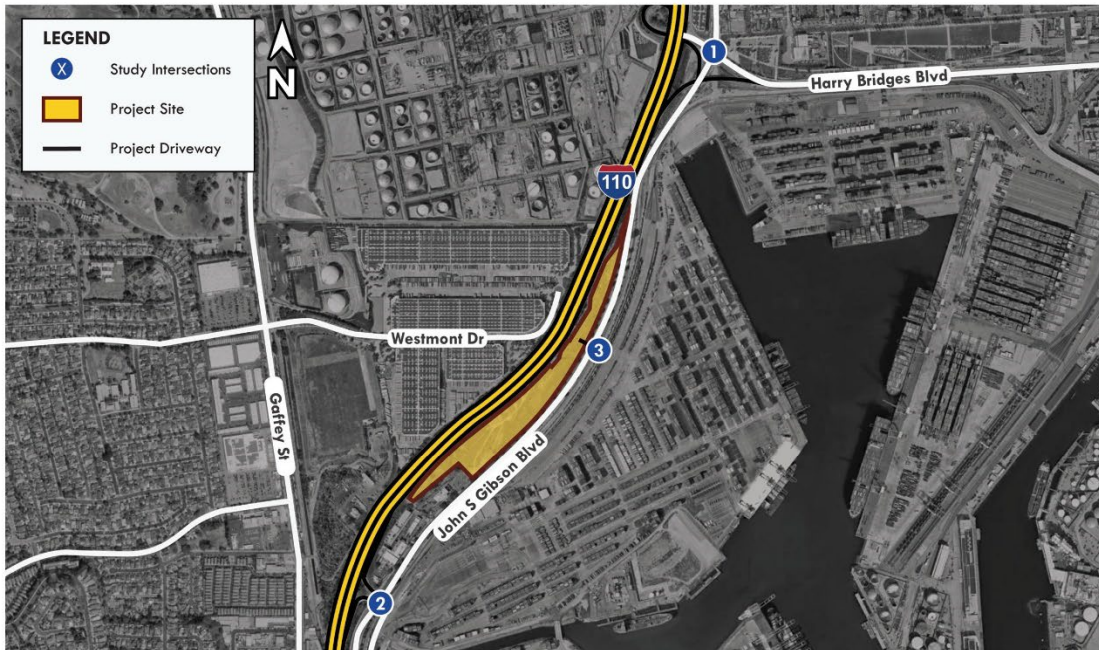
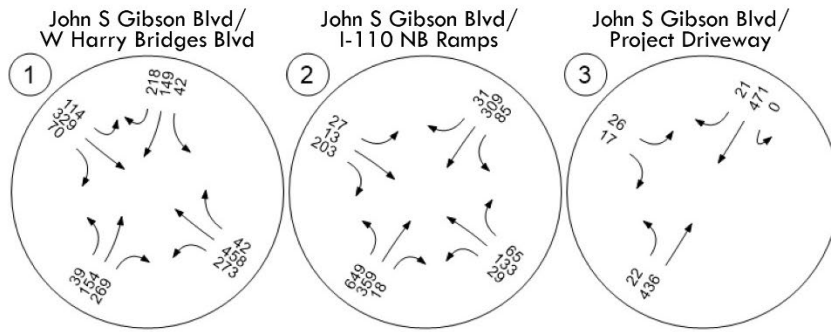
Unsatisfactory Level of Service



**Figure 5.1: Opening Year 2028 Plus Project AM Peak Hour Traffic Volumes**



**Figure 5.2: Opening Year 2028 Plus Project MD Peak Hour Traffic Volumes**



**Figure 5.3: Opening Year 2028 Plus Project PM Peak Hour Traffic Volumes**





## 5.2 Horizon Year 2045 Plus Project Conditions

Horizon Year 2045 Plus Project traffic volumes were determined by adding the Project trips to the Horizon Year 2045 Without Project traffic volumes. Horizon Year 2045 Plus Project AM, MD, and PM peak hour traffic volumes at the study area intersections are shown in Figure 5.4, Figure 5.5, and Figure 5.6, respectively.

As described previously in Section 2.3, *Methodology*, LOS at the study area intersections was determined using the HCM methodology. The Horizon Year 2045 Plus Project LOS in the study area are shown in Table 5.2. All LOS calculations are provided in Appendix C. As shown in Table 5.2, all three study intersections are anticipated to operate satisfactory LOS under Horizon Year 2045 Plus Project conditions.

**Table 5.2: Horizon Year 2045 Plus Project AM MD and PM Peak Hour LOS**

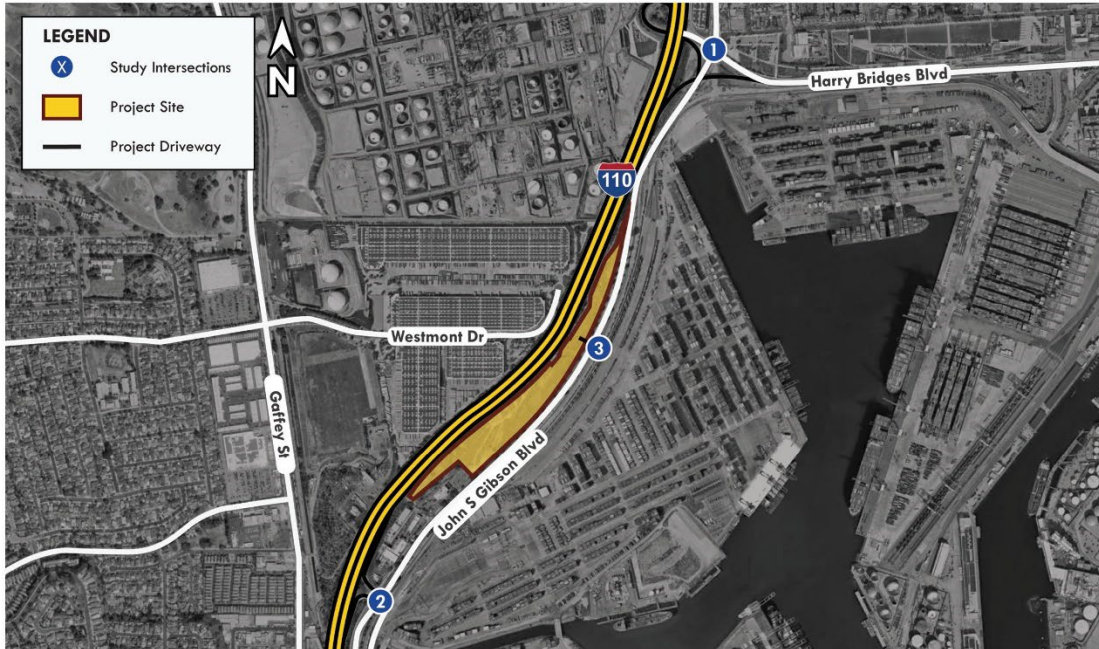
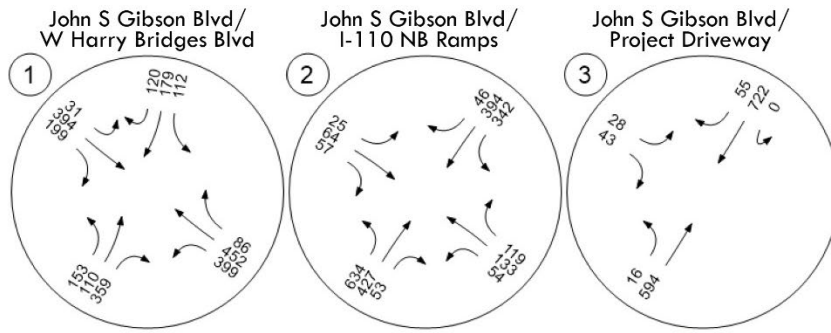
Intersection	Jurisdiction	Control Type	Horizon Year						Horizon Year Plus Project						Difference			LOS Standards	Satisfactory?
			AM Peak		MD Peak		PM Peak		AM Peak		MD Peak		PM Peak		AM Peak	MD Peak	PM Peak		
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay		
1. John S Gibson Blvd and W Harry Bridges Blvd	City of LA	Signal	12.6	B	12.7	B	15.4	B	12.8	B	13.1	B	15.6	B	0.2	0.4	0.2	D	Yes
2. John S Gibson Blvd and I-110 NB Ramps	Caltrans/City of LA	Signal	25.9	C	38.7	D	23.1	C	26.8	C	39.0	D	28.7	C	0.9	0.3	5.6	D	Yes
3. John S Gibson Blvd and Project Driveway	City of LA	Signal	-	-	-	-	-	-	45.2	D	54.4	D	14.7	B	-	-	-	D	Yes

Delay Reported in Seconds per Vehicle

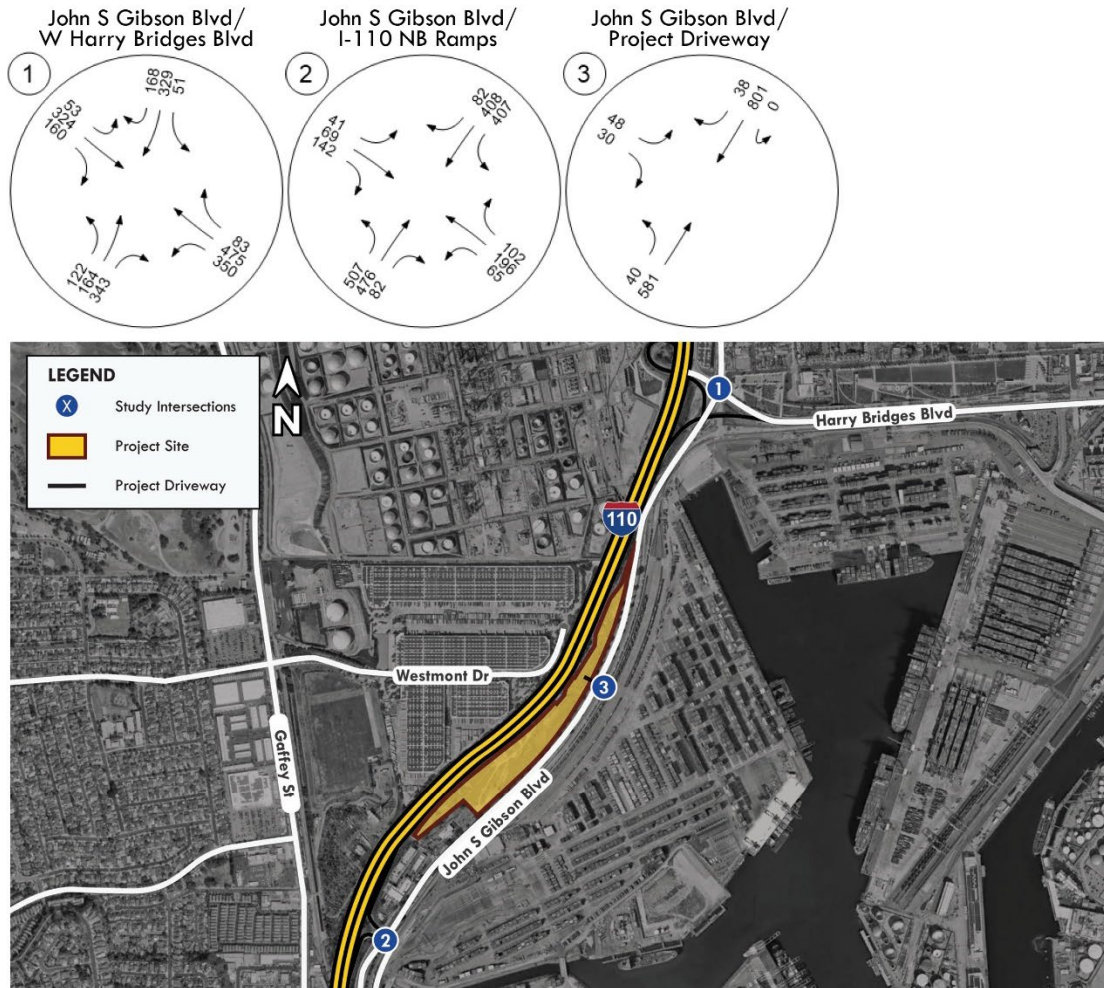
LOS = Level of Service

Unsatisfactory Level of Service

**Figure 5.4: Horizon Year 2045 Plus Project AM Peak Hour Traffic Volumes**

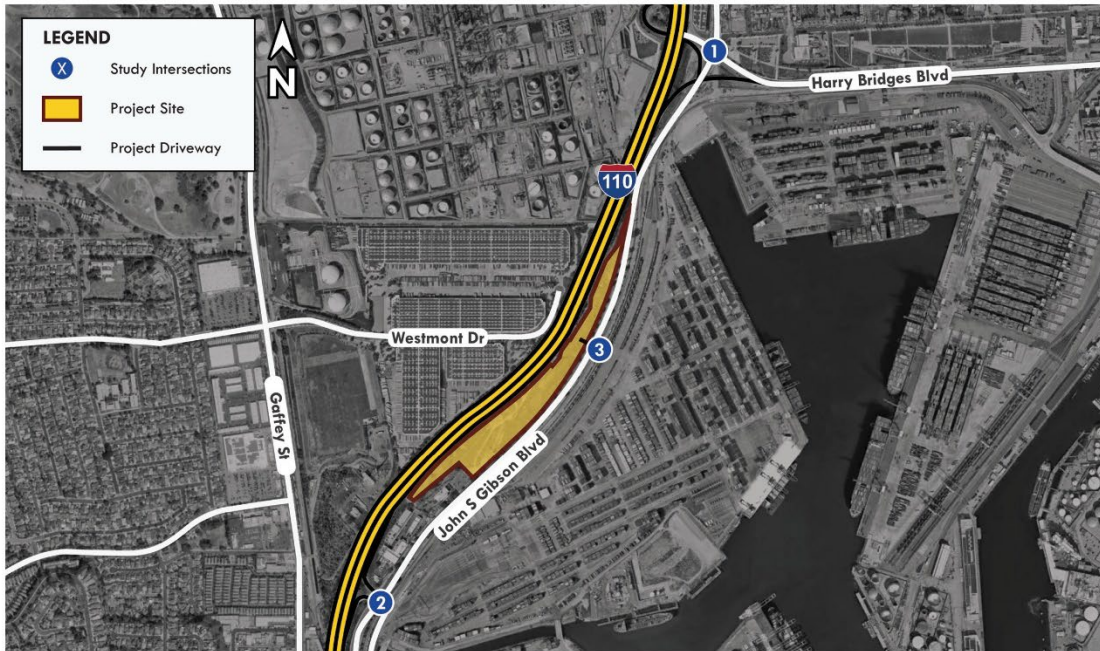
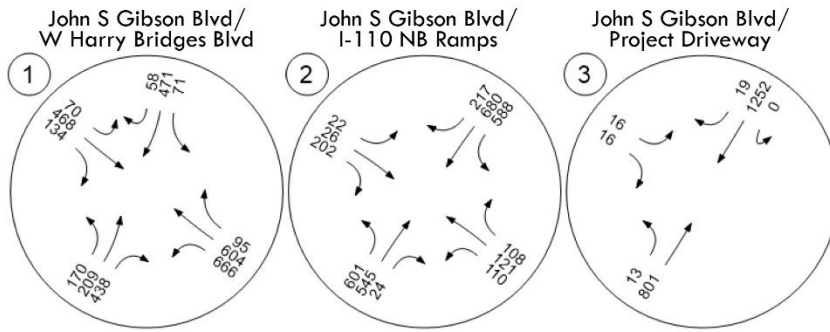


**Figure 5.5: Horizon Year 2045 Plus Project MD Peak Hour Traffic Volumes**





**Figure 5.6: Horizon Year 2045 Plus Project PM Peak Hour Traffic Volumes**





## 6 CONCLUSION

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The Project study intersection analysis results is listed below:

- The study intersections currently operate at a satisfactory LOS during both AM, MD, and PM peak hours under Existing 2024 conditions.
- The study intersections are anticipated to operate at a satisfactory LOS during both AM, MD, and PM peak hours under Opening Year 2028 Without Project conditions.
- The study intersections are anticipated to operate at a satisfactory LOS during both AM, MD, and PM peak hours under Horizon Year 2045 Without Project conditions.
- The study intersections are anticipated to operate at a satisfactory LOS during both AM, MD, and PM peak hours under Opening Year 2028 Plus Project conditions.
- The study intersections are anticipated to operate at a satisfactory LOS during both AM, MD, and PM peak hours under Horizon Year 2045 Plus Project conditions.

In conclusion, the study intersections are anticipated to operate at a satisfactory LOS during both AM, MD, and PM under all study scenarios, and no improvements would be required at the study intersections.

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*APPENDIX A – TRAFFIC STUDY SCOPING AGREEMENT*

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**ENVIRONMENT | PLANNING | DEVELOPMENT  
SOLUTIONS, INC.**

Date: August 21, 2023  
Prepared by: Alex J. Garber, Meghan Macias, TE  
To: LAHD Goods Movement  
Site: 1599 John S. Gibson Boulevard, City of Los Angeles  
Subject: **Traffic Impact Analysis Scope of Work**

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This memo outlines the proposed scope of work for the traffic impact analysis (TIA) for the proposed John S. Gibson Truck Parking Lot Project (Project) located at 1599 John S. Gibson Boulevard in the City of Los Angeles. The project description and proposed scope of work is discussed in detail below.

**Project Name:** John S. Gibson Truck Parking Lot Project

**Project Address:** 1599 John S. Gibson Boulevard, City of Los Angeles

**Project Description:** The Project site is located at 1599 John S. Gibson Boulevard in the community of San Pedro in the southwestern portion of the City of Los Angeles within the Port of Los Angeles Master Plan planning area. The proposed Project would develop the 18.635-acre site with a short-term trailer parking facility and related site improvements. The Project includes paving of the site and striping of 393 trailer stalls. The project site plan is shown in Figure 1.

**Trip Generation Rate(s):** Vehicle trips were generated for the project using trip rates from a similar land use survey data. Port of Los Angeles provided the land use operation data and are provided in Appendix A. Table 1 presents the estimated proposed Project trip generations for Project opening year and horizon year. The estimated Project opening year is 2025 and the horizon year is 2040. As shown in Table 1, for opening year, the proposed Project is estimated to generate approximately 980 daily trips, 122 (54 inbound and 68 outbound) AM peak hour trips, and 59 (30 inbound and 29 outbound) PM peak hour trips. For horizon year, the proposed project is estimated to generate approximately 1,808 daily trips, 225 (100 inbound and 125 outbound) AM peak hour trips, and 100 (51 inbound and 49 outbound) PM peak hour trips. The proposed project is estimated to generate 14 auto trips in both opening year and horizon year, assuming 2 employees per shift, 2 shifts per day, 8 trips will occur during peak hours and 2 trips during off peak hours and 2 vendor visits during off peak hour.

**Study Intersections:** The project will analyze the operation of John S Gibson Blvd /Project Dwy 1 (Proposed Intersection).

**Analysis Scenarios:** The following scenarios will be evaluated in the Traffic Impact Analysis:

- Opening Year 2025 With Project Conditions
- Horizon Year 2040 With Project Conditions

Opening Year 2025 and Horizon Year 2040 volumes will be provided by the Port of Los Angeles staff.

**Cumulative Projects:** A list of the cumulative projects within the project's vicinity will be requested from the City.

John S. Gibson Truck Parking Lot Project  
Traffic Impact Analysis Scope of Work

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We appreciate your review of this information. Upon completion of your review, please forward any comments or approval of this methodology to [alex@epdsolutions.com](mailto:alex@epdsolutions.com). If you have any questions, please do not hesitate to contact me by e-mail or at (949) 794-1180.

City Approval of Scope of Work:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name

\_\_\_\_\_  
Date

**Table 1a: Project Trip Generation for Opening Year**

Land Use	Units	Daily	Off Peak Hour			AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total	In	Out	Total
<b><u>Total Vehicle Trip Generation</u></b>											
Proposed Trailer Storage Lot	18.635	Acre									
<b><u>Vehicle Mix</u><sup>1</sup></b>											
Employee Auto			10	2	2	2	4	2	2	4	
Vendor Auto			4	4	0	0	0	0	0	0	
Truck (PCE)			966		52	66	118	28	27	55	
<b>Total Trip Generation</b>			<b>980</b>		<b>54</b>	<b>68</b>	<b>122</b>	<b>30</b>	<b>29</b>	<b>59</b>	

<sup>1</sup>Trip rates and vehicle mix from Port of Los Angeles, Environmental Management Division

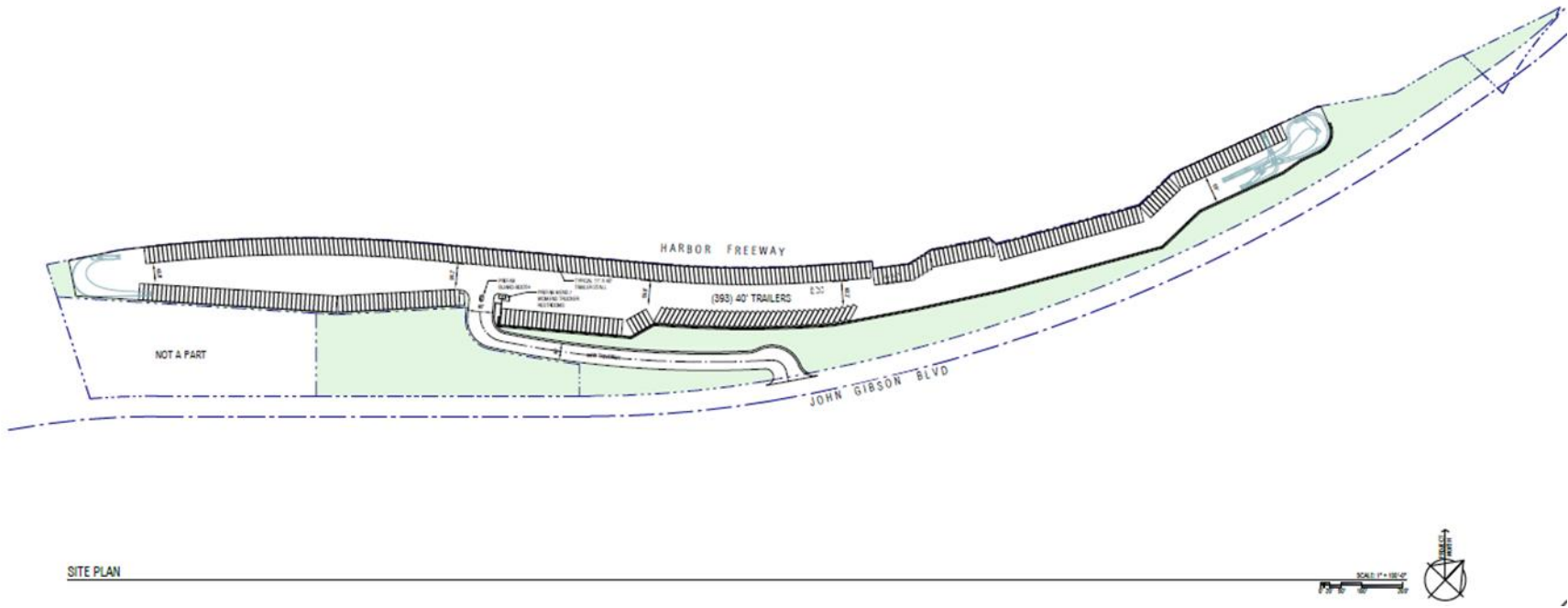
**Table 1b: Project Trip Generation for Horizon Year**

Land Use	Units	Daily	Off Peak Hour			AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total	In	Out	Total
<b><u>Total Vehicle Trip Generation</u></b>											
Proposed Trailer Storage Lot	18.635	Acre									
<b><u>Vehicle Mix</u><sup>1</sup></b>											
Employee Auto			10	2	2	2	4	2	2	4	
Vendor Auto			4	4	0	0	0	0	0	0	
Truck (PCE)			1,794		98	123	221	49	47	96	
<b>Total Trip Generation</b>			<b>1,808</b>		<b>100</b>	<b>125</b>	<b>225</b>	<b>51</b>	<b>49</b>	<b>100</b>	

<sup>1</sup>Trip rates and vehicle mix from Port of Los Angeles, Environmental Management Division



Figure 1: Project Site Plan



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APPENDIX B – TRAFFIC COUNTS

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A31224

**24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)**

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Monday, August 26, 2024  
JOB #: SC4856

CITY: LA Port  
LOCATION: CLASS1 John S Gibson Blvd SB U-turn

AM TIME	SOUTHBOUND							TOTAL	PM Time	SOUTHBOUND							TOTAL
	1	2	3	4	5	6	1			2	3	4	5	6			
0:00	0	0	0	0	0	0	0	0	12:00	0	0	0	0	0	0	0	0
0:15	0	0	0	0	0	0	0	0	12:15	0	0	0	0	0	0	0	0
0:30	0	0	0	0	0	0	0	0	12:30	0	0	0	0	0	0	0	0
0:45	0	0	0	0	0	0	0	0	12:45	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	13:00	0	0	0	0	0	0	0	0
1:15	0	0	0	0	0	0	0	0	13:15	0	0	0	0	0	0	0	0
1:30	0	0	0	0	0	0	0	0	13:30	0	0	0	0	0	0	0	0
1:45	0	0	0	0	0	0	0	0	13:45	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	14:00	0	0	0	0	0	0	0	0
2:15	0	0	0	0	0	0	0	0	14:15	0	0	0	0	0	0	0	0
2:30	0	0	0	0	0	0	0	0	14:30	0	0	0	0	0	0	0	0
2:45	0	0	0	0	0	0	0	0	14:45	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	15:00	0	0	0	0	0	0	0	0
3:15	0	0	0	0	0	0	0	0	15:15	0	0	0	0	0	0	0	0
3:30	0	0	0	0	0	0	0	0	15:30	0	0	0	0	0	0	0	0
3:45	0	0	0	0	0	0	0	0	15:45	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	16:00	0	0	0	0	0	0	0	0
4:15	0	0	0	0	0	0	0	0	16:15	0	0	0	0	0	0	0	0
4:30	0	0	0	0	0	0	0	0	16:30	0	0	0	0	0	0	0	0
4:45	0	0	0	0	0	0	0	0	16:45	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0	0	17:00	0	0	0	0	0	0	0	0
5:15	0	0	0	0	0	0	0	0	17:15	0	0	0	0	0	0	0	0
5:30	0	0	0	0	0	0	0	0	17:30	0	0	0	0	0	0	0	0
5:45	0	0	0	0	0	0	0	0	17:45	0	0	0	0	0	0	0	0
6:00	0	0	0	0	0	0	0	0	18:00	0	0	0	0	0	0	0	0
6:15	0	0	0	0	0	0	0	0	18:15	0	0	0	0	0	0	0	0
6:30	0	0	0	0	0	0	0	0	18:30	0	0	0	0	0	0	0	0
6:45	0	0	0	0	0	0	0	0	18:45	0	0	0	0	0	0	0	0
7:00	0	0	0	0	0	0	0	0	19:00	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	19:15	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	19:30	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	19:45	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	20:00	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	20:15	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	20:30	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	20:45	0	0	0	0	0	0	0	0
9:00	0	0	0	0	0	0	0	0	21:00	0	0	0	0	0	0	0	0
9:15	0	0	0	0	0	0	0	0	21:15	0	0	0	0	0	0	0	0
9:30	0	0	0	0	0	0	0	0	21:30	0	0	0	0	0	0	0	0
9:45	0	0	0	0	0	0	0	0	21:45	0	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0	22:00	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	22:15	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	22:30	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	22:45	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	23:00	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	23:15	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	23:30	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	23:45	0	0	0	0	0	0	0	0
<b>TOTAL</b>	0	0	0	0	0	0	0	0	<b>TOTAL</b>	0	0	0	0	0	0	0	0
<b>AM PEAK HOUR</b>								11:45 AM	<b>AM PEAK HOUR</b>								11:45 PM
<b>AM PEAK VOLUME</b>								0	<b>AM PEAK VOLUME</b>								0

<b>CLASS 1</b>	PASSENGER VEHICLES	<b>TOTAL: AM+PM</b>	0	0	0	0	0	0	0
<b>CLASS 2</b>	2-AXLE TRUCKS	<b>% OF TOTAL</b>	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>CLASS 3</b>	3-AXLE TRUCKS								
<b>CLASS 4</b>	4 OR MORE AXLE TRUCKS								
<b>CLASS 5</b>	RV								
<b>CLASS 6</b>	BUS								





















**JSG & Harry Bridges Blvd Passenger Cars**

Movt.	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
NBL	14	19	18	10	10	11	12	13	14	18	22	19	10
NBT	61	82	78	107	105	111	127	131	150	128	154	133	72
NBR	160	216	204	153	152	160	183	189	215	260	313	270	145
SBL	17	23	22	21	21	22	25	26	29	40	49	42	23
SBT	77	104	98	99	98	103	118	122	139	161	194	167	90
SBR	84	113	107	151	149	158	180	186	212	43	52	45	24
EBL	40	53	51	77	76	80	91	94	108	129	155	134	72
EBT	245	330	312	134	133	140	160	165	189	321	387	333	179
EBR	23	31	29	20	19	21	23	24	28	34	41	35	19
WBL	194	261	247	155	153	162	185	191	218	297	358	309	166
WBT	238	321	303	204	202	213	243	252	287	348	419	362	195
WBR	57	76	72	27	27	28	32	33	38	53	64	55	30
	<b>1210</b>	<b>1629</b>	<b>1541</b>	<b>1158</b>	<b>1145</b>	<b>1209</b>	<b>1379</b>	<b>1426</b>	<b>1627</b>	<b>1832</b>	<b>2208</b>	<b>1904</b>	<b>1025</b>

**JSG & I-110 NB Ramps Passenger Cars**

Movt.	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
NBL	432	768	710	505	498	534	618	598	611	477	540	471	300
NBT	184	326	302	283	280	300	347	336	343	359	406	355	226
NBR	15	28	25	12	12	13	15	14	15	10	11	10	6
SBL	30	54	50	11	11	11	13	13	13	94	107	93	59
SBT	201	357	331	235	232	249	288	278	285	425	481	419	267
SBR	7	13	12	13	13	14	16	16	16	15	17	15	10
EBL	8	15	14	7	7	7	9	8	8	8	9	8	5
EBT	11	20	19	4	4	4	5	5	5	6	6	6	4
EBR	56	100	92	151	149	160	185	179	183	104	117	102	65
WBL	4	7	6	15	15	16	19	18	19	18	20	18	11
WBT	1	2	2	9	9	10	11	11	11	15	17	14	9
WBR	1	2	2	6	6	7	8	8	8	7	8	7	4
	<b>950</b>	<b>1692</b>	<b>1565</b>	<b>1251</b>	<b>1236</b>	<b>1325</b>	<b>1534</b>	<b>1484</b>	<b>1517</b>	<b>1538</b>	<b>1739</b>	<b>1518</b>	<b>966</b>

**Bobtail Truck**

6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
0	0	0	1	0	1	1	1	1	1	1	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	3	8	3	8	6	10	7	8	12	8	7
3	3	4	4	2	4	3	5	4	2	3	2	2
2	3	4	4	2	4	3	5	4	1	2	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
11	15	19	18	7	19	14	23	17	9	12	8	7
2	3	4	6	3	6	5	8	6	3	4	3	2
4	5	6	8	3	8	6	10	7	5	7	5	4
10	13	18	21	9	22	17	26	20	17	23	17	14
1	1	1	0	0	0	0	0	0	0	0	0	0
34	45	59	70	29	72	55	88	66	46	64	45	38

**Chassis Truck**

6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
0	0	0	0	0	0	0	0	0	0	0	0	1
0	0	0	1	1	1	0	1	1	0	0	1	1
2	5	6	6	5	7	4	5	6	7	8	10	12
0	1	1	2	1	2	1	1	2	0	1	1	1
0	1	1	2	2	2	1	2	2	1	1	1	1
0	0	0	1	0	1	0	0	1	0	0	1	1
0	0	0	3	3	3	2	3	3	0	0	0	0
11	25	31	23	20	26	15	21	23	7	9	11	13
3	7	9	2	2	2	1	2	2	3	3	4	5
3	7	9	15	13	17	10	14	15	11	13	16	19
6	13	17	28	25	32	19	25	28	11	14	17	20
0	0	0	1	1	1	1	1	1	0	0	0	0
25	59	74	84	73	94	54	75	84	40	49	62	74

**Bobtail Truck**

6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
1	1	2	1	1	1	1	2	1	3	5	3	3
0	1	1	2	1	2	1	2	1	2	3	2	2
1	1	2	1	0	1	1	1	1	1	1	1	0
4	5	13	14	6	14	11	17	13	4	5	4	3
1	1	2	1	0	1	1	2	1	4	5	4	3
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	3	3	1	3	3	4	3	1	1	1	1
1	1	2	4	2	4	3	5	4	1	2	1	1
1	2	4	3	1	3	3	4	3	7	9	7	6
1	1	3	13	5	13	10	16	12	14	18	13	11
1	1	2	8	3	9	7	11	8	8	11	8	7
12	15	34	50	20	51	41	64	47	45	60	44	37

**Chassis Truck**

6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
0	1	1	1	1	1	1	1	1	0	0	0	0
0	1	2	1	1	1	1	1	1	0	0	1	1
0	0	1	0	0	0	0	0	0	0	0	0	0
0	10	17	11	14	21	9	17	17	4	5	8	11
0	6	9	2	2	4	2	3	3	7	8	14	19
0	0	0	0	0	0	0	0	0	0	0	0	0
0	1	1	0	0	0	0	0	0	0	0	0	0
0	3	5	1	1	2	1	2	2	1	1	2	3
0	0	0	0	0	0	0	0	0	0	1	1	1
0	4	6	2	2	3	1	3	3	3	3	5	7
0	2	4	9	10	16	7	13	13	5	6	10	15
0	3	5	4	5	7	3	6	6	5	6	10	14
0	31	51	31	36	55	25	46	46	25	30	51	71

**Container Truck**

6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
0	0	1	2	2	2	2	2	2	2	2	2	2
0	1	1	2	1	1	1	1	2	0	0	0	0
4	10	15	35	30	31	28	30	32	28	23	22	29
1	4	5	6	6	6	5	6	6	6	5	4	6
1	2	3	3	3	3	3	3	3	2	2	1	2
0	0	1	3	2	2	2	2	3	1	0	0	1
0	0	1	2	2	2	2	2	2	0	0	0	0
16	41	57	91	78	81	73	79	84	35	29	27	36
3	8	12	17	14	15	14	15	16	11	9	9	12
7	18	25	26	22	23	21	22	24	21	17	16	22
18	48	67	116	99	103	93	100	107	58	47	44	60
0	1	1	2	1	1	1	1	2	2	2	2	2
<b>50</b>	<b>133</b>	<b>189</b>	<b>305</b>	<b>260</b>	<b>270</b>	<b>245</b>	<b>263</b>	<b>283</b>	<b>166</b>	<b>136</b>	<b>127</b>	<b>172</b>

**Other Truck**

6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
1	2	3	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1
2	4	5	5	5	6	4	4	4	6	3	5	3
0	0	0	2	2	2	1	1	1	8	4	7	4
0	0	0	1	1	1	1	1	1	1	0	1	0
1	1	2	2	2	3	2	2	2	1	1	1	1
2	4	5	1	1	1	1	1	1	5	3	4	3
4	7	8	21	20	25	17	18	16	13	7	11	7
1	1	2	1	1	1	1	1	1	3	2	3	2
5	9	10	6	6	7	5	5	5	3	2	3	2
7	12	14	20	19	24	16	17	16	10	5	8	6
1	2	2	1	1	1	1	1	1	1	0	1	0
<b>25</b>	<b>43</b>	<b>52</b>	<b>62</b>	<b>60</b>	<b>73</b>	<b>51</b>	<b>53</b>	<b>50</b>	<b>53</b>	<b>29</b>	<b>46</b>	<b>30</b>

**Container Truck**

6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
1	3	9	12	11	7	8	10	13	5	3	3	5
0	2	5	2	2	1	1	2	3	4	2	3	4
0	0	1	2	2	1	1	2	2	1	0	1	1
2	9	27	36	34	22	24	31	40	9	5	5	9
1	7	19	8	7	5	5	7	9	27	15	17	28
0	0	0	1	1	0	0	0	1	0	0	0	0
0	0	1	1	1	0	0	0	1	0	0	0	0
1	4	12	2	2	1	1	2	2	1	0	0	1
0	1	3	9	8	6	6	8	10	5	3	3	5
0	2	5	1	1	1	1	1	2	4	2	3	4
4	25	71	87	81	53	56	74	96	55	30	34	57
1	7	21	38	35	23	24	32	42	32	18	20	33
<b>10</b>	<b>60</b>	<b>174</b>	<b>199</b>	<b>185</b>	<b>120</b>	<b>127</b>	<b>169</b>	<b>221</b>	<b>143</b>	<b>78</b>	<b>89</b>	<b>147</b>

**Other Truck**

6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
9	21	16	24	24	35	24	26	23	17	8	8	7
5	11	8	8	8	11	8	8	7	12	6	5	5
1	1	1	0	0	1	0	0	0	0	0	0	0
1	2	1	2	2	3	2	2	2	2	1	1	1
8	19	14	8	8	12	8	9	8	7	3	3	3
0	0	0	0	0	1	0	0	0	0	0	0	0
0	0	0	0	0	1	0	1	0	0	0	0	0
0	1	1	1	1	2	1	1	1	1	0	0	0
2	4	3	6	7	9	7	7	6	4	2	2	2
0	0	0	2	2	3	2	2	2	1	0	0	0
0	0	0	1	1	2	1	1	1	1	1	1	1
0	1	1	1	1	2	1	1	1	2	1	1	1
<b>26</b>	<b>60</b>	<b>45</b>	<b>53</b>	<b>54</b>	<b>82</b>	<b>54</b>	<b>58</b>	<b>51</b>	<b>47</b>	<b>22</b>	<b>21</b>	<b>20</b>

Total Vehicles

6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
15	21	22	14	13	15	16	17	18	22	26	23	15
62	84	80	111	108	114	129	134	154	129	155	135	74
169	237	233	207	195	212	225	238	264	309	359	315	196
21	31	32	35	32	36	35	39	42	56	62	56	36
80	110	106	109	106	113	126	133	149	166	199	171	94
85	114	110	157	153	164	184	190	218	45	53	47	27
42	57	57	83	82	86	96	100	114	134	158	138	75
287	418	427	287	258	291	279	306	329	385	444	390	242
32	50	56	46	39	45	44	50	53	54	59	54	40
213	300	297	210	197	217	227	242	269	337	397	349	213
279	407	419	389	354	394	388	420	458	444	508	448	295
59	80	76	31	30	31	35	36	42	56	66	58	32
1344	1909	1915	1679	1567	1718	1784	1905	2110	2137	2486	2184	1339

Total Vehicles

6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
443	794	738	543	535	578	652	637	649	502	556	485	315
189	341	318	296	292	315	358	349	355	377	417	366	238
17	30	30	15	14	16	17	17	18	12	12	12	7
37	80	108	74	67	71	59	80	85	113	123	111	83
211	390	375	254	249	271	304	299	306	470	512	457	320
7	13	12	14	14	15	16	16	17	15	17	15	10
8	16	16	8	8	8	9	9	9	8	9	8	5
13	29	40	11	9	12	11	14	13	10	8	9	9
59	106	100	170	166	179	201	199	203	114	125	109	74
5	15	21	23	21	26	26	28	29	33	34	33	28
6	30	80	119	106	94	85	115	133	90	72	72	93
3	14	31	57	50	48	43	58	65	54	44	46	59
998	1858	1869	1584	1531	1633	1781	1821	1882	1798	1929	1723	1241



Truck%

6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
7%	10%	18%	29%	23%	27%	25%	24%	22%	18%	15%	17%	33%
2%	2%	3%	4%	3%	3%	2%	2%	3%	1%	1%	1%	3%
5%	9%	12%	26%	22%	25%	19%	21%	19%	16%	13%	14%	26%
19%	26%	31%	40%	34%	39%	29%	33%	31%	29%	21%	25%	36%
4%	5%	8%	9%	8%	9%	6%	8%	7%	3%	3%	2%	4%
1%	1%	3%	4%	3%	4%	2%	2%	3%	4%	2%	4%	11%
5%	7%	11%	7%	7%	7%	5%	6%	5%	4%	2%	3%	4%
15%	21%	27%	53%	48%	52%	43%	46%	43%	17%	13%	15%	26%
28%	38%	48%	57%	51%	53%	48%	52%	47%	37%	31%	35%	53%
9%	13%	17%	26%	22%	25%	19%	21%	19%	12%	10%	11%	22%
15%	21%	28%	48%	43%	46%	37%	40%	37%	22%	18%	19%	34%
3%	5%	5%	13%	10%	10%	9%	8%	10%	5%	3%	5%	6%

Truck%

6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
2%	3%	4%	7%	7%	8%	5%	6%	6%	5%	3%	3%	5%
3%	4%	5%	4%	4%	5%	3%	4%	3%	5%	3%	3%	5%
12%	7%	17%	20%	14%	19%	12%	18%	17%	17%	8%	17%	14%
19%	33%	54%	85%	84%	85%	78%	84%	85%	17%	13%	16%	29%
5%	8%	12%	7%	7%	8%	5%	7%	7%	10%	6%	8%	17%
0%	0%	0%	7%	7%	7%	0%	0%	6%	0%	0%	0%	0%
0%	6%	13%	13%	13%	13%	0%	11%	11%	0%	0%	0%	0%
15%	31%	53%	64%	56%	67%	55%	64%	62%	40%	25%	33%	56%
5%	6%	8%	11%	10%	11%	8%	10%	10%	9%	6%	6%	12%
20%	53%	71%	35%	29%	38%	27%	36%	34%	45%	41%	45%	61%
83%	93%	98%	92%	92%	89%	87%	90%	92%	83%	76%	81%	90%
67%	86%	94%	89%	88%	85%	81%	86%	88%	87%	82%	85%	93%

JSG & Harry Bridges Blvd		Passenger Cars															
Movt.	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19				
NBL	83	97	93	49	43	63	118	56	67	83	151	104	52				
NBT	86	113	107	122	117	133	175	145	160	146	208	161	89				
NBR	325	273	279	184	163	230	409	212	252	234	394	281	145				
SBL	106	83	86	24	18	35	83	26	34	19	68	36	14				
SBT	128	150	144	208	177	270	517	236	287	174	463	271	117				
SBR	162	112	118	118	104	147	263	137	162	38	57	43	24				
EBL	20	31	29	36	36	38	44	44	47	59	68	59	35				
EBT	270	312	301	129	118	152	242	151	173	305	428	335	185				
EBR	63	43	46	24	17	38	94	26	36	25	87	47	18				
WBL	313	313	309	184	156	241	468	208	255	305	630	408	195				
WBT	279	350	335	205	186	247	408	239	278	323	545	388	200				
WBR	96	81	82	56	43	82	186	60	80	37	91	55	24				
	<b>1931</b>	<b>1958</b>	<b>1929</b>	<b>1339</b>	<b>1178</b>	<b>1676</b>	<b>3007</b>	<b>1540</b>	<b>1831</b>	<b>1748</b>	<b>3190</b>	<b>2188</b>	<b>1098</b>				

JSG & I-110 NB Ramps		Passenger Cars															
Movt.	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19				
NBL	426	649	608	360	355	378	435	435	470	499	582	505	296				
NBT	415	411	406	338	313	394	604	397	453	358	531	404	219				
NBR	52	36	38	19	15	26	58	20	26	8	23	13	5				
SBL	183	126	133	133	95	209	515	141	195	151	529	282	108				
SBT	295	366	351	284	262	331	511	333	380	394	647	466	244				
SBR	9	11	12	39	28	61	151	42	57	58	204	108	42				
EBL	10	12	12	5	5	7	13	7	8	6	12	8	4				
EBT	31	23	24	6	5	8	19	7	9	4	10	6	3				
EBR	44	37	37	84	71	109	210	94	115	62	193	107	43				
WBL	47	36	36	21	16	29	66	22	29	29	101	54	21				
WBT	29	20	21	13	9	20	49	14	19	21	74	39	15				
WBR	27	19	21	9	8	13	29	11	13	19	67	36	14				
	<b>1568</b>	<b>1746</b>	<b>1699</b>	<b>1311</b>	<b>1182</b>	<b>1585</b>	<b>2660</b>	<b>1523</b>	<b>1774</b>	<b>1609</b>	<b>2973</b>	<b>2028</b>	<b>1014</b>				

**Bobtail Truck**

6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
8	9	10	4	4	3	2	3	4	2	1	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0
21	24	26	29	29	26	16	25	31	35	15	12	20
7	8	9	6	6	6	3	5	7	3	1	1	2
13	15	16	16	16	15	9	14	17	7	3	2	4
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
18	20	21	26	27	23	15	22	28	14	6	5	8
25	28	30	21	22	19	12	18	23	17	7	6	10
20	23	25	26	27	24	15	23	28	17	7	6	10
26	30	32	48	48	43	27	41	50	24	10	8	14
1	1	1	0	0	0	0	0	0	0	0	0	0
<b>139</b>	<b>158</b>	<b>170</b>	<b>176</b>	<b>179</b>	<b>159</b>	<b>99</b>	<b>151</b>	<b>188</b>	<b>119</b>	<b>50</b>	<b>41</b>	<b>69</b>

**Chassis Truck**

6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
2	3	3	1	1	1	1	1	1	1	1	0	0
0	0	0	1	1	1	0	1	1	1	1	0	1
5	6	6	7	7	5	3	7	7	14	4	8	11
3	3	3	3	3	3	2	4	3	2	1	1	1
5	6	6	8	8	6	4	8	8	4	1	2	3
0	0	0	1	1	0	0	1	1	1	0	0	1
0	0	0	3	3	2	1	3	3	0	0	0	0
19	23	23	22	21	17	10	22	22	14	5	8	12
6	8	7	7	7	5	3	7	7	5	2	3	5
6	7	7	8	8	6	4	8	8	22	7	12	19
9	10	10	16	16	13	8	17	16	21	7	11	17
0	0	0	1	1	1	1	1	1	1	0	0	0
<b>55</b>	<b>66</b>	<b>65</b>	<b>78</b>	<b>77</b>	<b>60</b>	<b>37</b>	<b>80</b>	<b>78</b>	<b>85</b>	<b>27</b>	<b>45</b>	<b>71</b>

**Bobtail Truck**

6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
1	1	1	1	1	1	1	1	1	6	3	2	3
1	1	1	1	1	1	1	1	1	3	1	1	2
4	4	4	13	14	12	8	12	14	1	0	0	0
57	65	70	63	64	56	35	54	66	41	17	14	24
1	1	1	1	1	1	1	1	1	7	3	2	4
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
14	16	17	31	32	28	18	27	33	22	9	7	13
4	5	5	6	6	5	3	5	6	4	2	1	3
7	8	9	21	22	19	12	18	23	14	6	5	8
28	32	34	43	44	39	24	37	46	24	10	8	14
28	32	34	32	32	28	18	27	33	37	16	12	21
<b>145</b>	<b>165</b>	<b>176</b>	<b>212</b>	<b>217</b>	<b>190</b>	<b>121</b>	<b>183</b>	<b>224</b>	<b>159</b>	<b>67</b>	<b>52</b>	<b>92</b>

**Chassis Truck**

6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
1	1	1	1	1	1	1	1	1	1	0	0	0
1	1	1	1	1	1	1	1	1	1	1	0	0
1	1	1	4	4	3	2	4	4	0	0	0	0
17	21	20	23	23	18	11	23	23	14	4	8	12
4	5	5	3	3	2	1	3	3	18	6	10	15
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
8	10	10	12	12	10	6	12	12	5	2	3	4
0	0	0	0	0	0	0	0	0	0	1	0	1
6	7	7	9	9	7	4	9	9	5	2	3	4
8	10	10	15	15	12	7	16	15	14	4	8	11
8	9	9	10	10	8	5	10	10	13	4	7	11
<b>54</b>	<b>65</b>	<b>64</b>	<b>78</b>	<b>78</b>	<b>62</b>	<b>38</b>	<b>79</b>	<b>78</b>	<b>71</b>	<b>22</b>	<b>40</b>	<b>59</b>

Container Truck

6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
16	18	20	9	9	8	5	7	9	7	3	2	4
1	1	1	2	2	2	1	1	2	0	0	0	0
29	33	36	35	36	32	20	30	37	44	18	15	25
7	8	9	5	5	5	3	5	6	3	1	1	2
10	11	12	14	14	13	8	12	15	6	3	2	4
0	0	0	3	3	3	2	2	3	1	0	0	0
0	0	0	2	2	2	1	2	2	0	0	0	0
34	39	42	79	81	71	44	68	84	52	22	18	31
57	65	70	59	60	54	33	51	63	52	22	17	30
30	34	36	42	43	38	24	36	45	33	14	11	19
43	49	53	107	109	96	60	92	113	72	30	24	42
1	1	1	1	1	1	1	1	1	3	1	1	2
<b>228</b>	<b>259</b>	<b>280</b>	<b>358</b>	<b>365</b>	<b>325</b>	<b>202</b>	<b>307</b>	<b>380</b>	<b>273</b>	<b>114</b>	<b>91</b>	<b>159</b>

Other Truck

6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
2	5	5	3	3	4	3	3	3	5	2	3	2
1	2	2	1	1	1	1	1	1	1	1	1	1
3	7	6	6	6	9	6	6	6	7	4	5	3
3	6	5	2	2	2	2	2	2	1	1	0	0
1	1	1	2	2	3	2	2	2	1	1	1	1
1	2	2	2	2	3	2	2	2	2	1	1	1
1	2	2	1	1	1	1	1	1	1	4	2	2
4	8	7	19	19	26	18	18	17	15	7	9	7
1	2	2	1	1	1	1	1	1	2	1	1	1
6	12	11	7	7	10	7	7	6	7	4	5	3
11	24	22	20	20	27	18	19	18	25	12	16	12
1	2	2	2	2	2	1	1	1	6	3	4	3
<b>35</b>	<b>73</b>	<b>67</b>	<b>66</b>	<b>66</b>	<b>89</b>	<b>62</b>	<b>63</b>	<b>59</b>	<b>75</b>	<b>38</b>	<b>48</b>	<b>36</b>

Container Truck

6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
4	4	5	11	11	10	6	10	12	7	3	2	4
2	2	2	2	2	2	1	2	2	6	2	2	3
7	8	9	36	37	33	20	31	38	1	1	0	1
96	109	117	114	116	103	64	98	121	87	37	29	51
8	9	9	7	7	4	6	8	37	16	12	21	
0	0	0	1	1	1	0	0	1	0	0	0	0
0	0	0	1	1	1	0	0	1	0	0	0	0
10	11	12	13	13	12	7	11	14	11	5	4	7
10	11	12	15	15	13	8	13	16	12	5	4	7
2	2	2	2	2	2	1	2	2	2	1	1	1
56	64	68	109	111	98	61	93	115	75	32	25	44
44	50	54	42	43	38	24	36	45	47	20	16	27
<b>239</b>	<b>270</b>	<b>290</b>	<b>353</b>	<b>359</b>	<b>320</b>	<b>196</b>	<b>302</b>	<b>375</b>	<b>285</b>	<b>122</b>	<b>95</b>	<b>166</b>

Other Truck

6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
10	20	19	26	26	35	24	25	23	27	13	17	13
7	15	14	12	12	16	11	12	11	15	8	10	7
1	1	1	0	0	1	0	0	0	0	0	0	0
1	2	2	2	2	3	2	2	2	2	1	1	1
10	21	19	12	12	16	11	11	10	10	5	6	5
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	1	0	0	0	0	0	0	0
0	1	1	1	1	2	1	1	1	1	1	0	0
1	3	3	6	6	8	6	6	5	3	2	2	2
0	0	0	2	2	3	2	2	2	1	0	0	0
0	0	0	1	1	2	1	1	1	1	1	1	1
0	1	1	1	1	2	1	1	1	2	1	1	1
<b>30</b>	<b>64</b>	<b>60</b>	<b>63</b>	<b>63</b>	<b>89</b>	<b>59</b>	<b>61</b>	<b>56</b>	<b>62</b>	<b>31</b>	<b>38</b>	<b>30</b>

Total Vehicles

6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
111	132	131	66	60	79	129	70	84	98	157	110	60
88	116	110	126	121	137	177	148	164	148	209	162	91
383	343	353	261	241	302	454	280	333	334	435	321	204
126	108	112	40	34	51	93	42	51	28	71	39	19
157	183	179	248	217	307	540	272	329	192	471	278	129
163	114	120	124	110	153	267	142	168	41	58	44	26
21	33	31	42	42	43	47	50	53	63	70	61	37
345	402	394	275	266	289	329	281	324	400	468	375	243
152	146	155	112	107	117	143	103	130	101	119	74	64
375	389	388	267	241	319	518	282	342	384	662	442	246
368	463	452	396	379	426	521	408	475	465	604	447	285
99	85	86	60	47	86	189	63	83	46	95	60	29
2388	2514	2511	2017	1865	2309	3407	2141	2536	2300	3419	2413	1433

Total Vehicles

6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
442	675	634	399	394	425	467	472	507	539	601	526	316
426	430	424	354	329	414	618	413	468	383	542	417	232
65	50	53	72	70	75	88	67	82	10	24	13	6
354	323	342	335	300	389	627	318	407	295	588	334	196
318	402	385	307	285	357	528	354	402	466	677	496	289
9	11	12	40	29	62	151	42	58	58	204	108	42
10	12	12	6	6	9	13	7	9	6	12	8	4
63	61	64	63	63	60	51	58	69	43	26	20	27
59	56	57	111	98	135	227	118	142	82	202	115	56
62	53	54	55	51	60	85	53	65	51	110	63	34
121	126	133	181	180	171	142	161	196	135	121	81	85
107	111	119	94	94	89	77	85	102	118	108	72	74
2036	2310	2289	2017	1899	2246	3074	2148	2507	2186	3215	2253	1361



Truck%												
6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
25%	27%	29%	26%	28%	20%	9%	20%	20%	15%	4%	5%	13%
2%	3%	3%	3%	3%	3%	1%	2%	2%	1%	0%	1%	2%
15%	20%	21%	30%	32%	24%	10%	24%	24%	30%	9%	12%	29%
16%	23%	23%	40%	47%	31%	11%	38%	33%	32%	4%	8%	26%
18%	18%	20%	16%	18%	12%	4%	13%	13%	9%	2%	3%	9%
1%	2%	2%	5%	5%	4%	1%	4%	4%	7%	2%	2%	8%
5%	6%	6%	14%	14%	12%	6%	12%	11%	6%	3%	3%	5%
22%	22%	24%	53%	56%	47%	26%	46%	47%	24%	9%	11%	24%
59%	71%	70%	79%	84%	68%	34%	75%	72%	75%	27%	36%	72%
17%	20%	20%	31%	35%	24%	10%	26%	25%	21%	5%	8%	21%
24%	24%	26%	48%	51%	42%	22%	41%	41%	31%	10%	13%	30%
3%	5%	5%	7%	9%	5%	2%	5%	4%	20%	4%	8%	17%

Truck%												
6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
4%	4%	4%	10%	10%	11%	7%	8%	7%	7%	3%	4%	6%
3%	4%	4%	5%	5%	5%	2%	4%	3%	7%	2%	3%	6%
20%	28%	28%	74%	79%	65%	34%	70%	68%	20%	4%	0%	17%
48%	61%	61%	60%	68%	46%	18%	56%	52%	49%	10%	16%	45%
7%	9%	9%	7%	8%	7%	3%	6%	5%	15%	4%	6%	16%
0%	0%	0%	3%	3%	2%	0%	0%	2%	0%	0%	0%	0%
0%	0%	0%	17%	17%	22%	0%	0%	11%	0%	0%	0%	0%
51%	62%	63%	90%	92%	87%	63%	88%	87%	91%	62%	70%	89%
25%	34%	35%	24%	28%	19%	7%	20%	19%	24%	4%	7%	23%
24%	32%	33%	62%	69%	52%	22%	58%	55%	43%	8%	14%	38%
76%	84%	84%	93%	95%	88%	65%	91%	90%	84%	39%	52%	82%
75%	83%	82%	90%	91%	85%	62%	87%	87%	84%	38%	50%	81%

JSG SB	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
Autos	294	396	374	274	270	286	326	337	385	492	593	511	275
Bobtails	8	11	14	18	8	18	14	23	17	9	13	9	7
Chassis	6	15	19	19	17	21	12	18	19	15	17	21	25
Containers	11	28	40	46	39	41	38	40	43	34	28	26	36
Other Trucks	6	10	12	8	8	9	7	7	7	7	4	7	4
Total Vehicles	325	460	459	365	342	375	397	425	471	557	655	574	347
Truck %	10%	14%	19%	25%	21%	24%	18%	21%	18%	12%	9%	11%	21%
Total PCEs	352	519	537	447	410	455	461	502	549	618	711	633	416

JSG NB	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
Autos	235	317	300	270	267	282	322	333	379	406	489	422	227
Bobtails	1	2	3	9	3	9	7	11	8	9	13	9	8
Chassis	2	5	6	7	6	8	4	6	7	7	8	11	14
Containers	4	11	17	39	33	34	31	33	36	30	25	24	31
Other Trucks	4	7	9	7	7	8	6	6	6	8	5	7	5
Total Vehicles	246	342	335	332	316	341	370	389	436	460	540	473	285
Truck %	4%	7%	10%	19%	16%	17%	13%	14%	13%	12%	9%	11%	20%
Total PCEs	257	366	369	390	364	396	415	440	489	510	585	520	339

NB+SB combined	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
Total Vehicles	571	802	794	697	658	716	767	814	907	1017	1195	1047	632
Total PCEs	0.1401	0.21223	0.289663	0.436062	0.36559	0.410354	0.308571	0.351018	0.313324	0.234088	0.189101	0.217579	0.411002

JSG SB	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
Autos	504	506	499	416	350	549	1079	470	578	504	1180	726	330
Bobtails	58	66	71	63	65	58	36	55	68	41	17	14	24
Chassis	17	21	20	23	23	17	11	23	23	31	10	17	27
Containers	97	110	118	115	117	105	65	99	123	91	39	30	53
Other Trucks	8	15	14	10	10	14	10	10	9	10	6	7	5
Total Vehicles	684	718	722	627	565	743	1201	657	801	677	1252	794	439
Truck %	26%	30%	31%	34%	38%	26%	10%	28%	28%	26%	6%	9%	25%
Total PCEs	835	897	910	807	748	908	1305	817	990	830	1316	855	536

JSG NB	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
Autos	494	483	479	355	323	426	702	413	479	463	753	546	286
Bobtails	29	33	36	33	33	29	18	28	35	37	16	13	21
Chassis	7	9	9	9	9	7	4	9	9	16	4	8	13
Containers	46	52	57	46	47	42	26	38	48	51	21	17	29
Other Trucks	6	14	13	10	10	14	10	10	10	13	7	9	6
Total Vehicles	582	591	594	453	422	518	760	498	581	580	801	593	355
Truck %	15%	18%	19%	22%	23%	18%	8%	17%	18%	20%	6%	8%	19%
Total PCEs	656	683	691	535	505	596	809	569	666	679	841	634	414

NB+SB combined	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
Total Vehicles	1266	1309	1316	1080	987	1261	1961	1155	1382	1257	2053	1387	794
Total PCEs	0.414361	0.478006	0.502467	0.552859	0.615128	0.43871	0.177898	0.45531	0.453961	0.457263	0.117433	0.1649	0.442658

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APPENDIX C – LEVEL OF SERVICE CALCULATIONS

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# HCM 6th Signalized Intersection Summary

## 1: John S Gibson Blvd & S Figueroa St & W Harry Bridges Blvd

10/16/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷	↷	↶↷	↷↶↷		↶	↷	↷	↶	↷	↷
Traffic Volume (veh/h)	34	298	35	359	422	46	6	119	297	22	139	93
Future Volume (veh/h)	34	298	35	359	422	46	6	119	297	22	139	93
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	1544	1485	1707	1633	1707	1411	1841	1737	1841	1900	1841
Adj Flow Rate, veh/h	44	382	0	382	449	49	8	153	381	26	165	111
Peak Hour Factor	0.78	0.78	0.78	0.94	0.94	0.94	0.78	0.78	0.78	0.84	0.84	0.84
Percent Heavy Veh, %	5	24	28	13	18	13	33	4	11	4	0	4
Cap, veh/h	478	1243		937	1731	186	436	1317	554	467	797	506
Arrive On Green	0.42	0.42	0.00	0.42	0.42	0.42	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	878	2934	1259	1773	4087	439	832	3497	1472	857	2118	1345
Grp Volume(v), veh/h	44	382	0	382	325	173	8	153	381	26	139	137
Grp Sat Flow(s),veh/h/ln	878	1467	1259	886	1486	1554	832	1749	1472	857	1805	1658
Q Serve(g_s), s	1.5	3.7	0.0	7.7	3.0	3.1	0.3	1.2	9.3	0.9	2.2	2.4
Cycle Q Clear(g_c), s	4.5	3.7	0.0	11.4	3.0	3.1	2.7	1.2	9.3	2.1	2.2	2.4
Prop In Lane	1.00		1.00	1.00		0.28	1.00		1.00	1.00		0.81
Lane Grp Cap(c), veh/h	478	1243		937	1259	658	436	1317	554	467	680	624
V/C Ratio(X)	0.09	0.31		0.41	0.26	0.26	0.02	0.12	0.69	0.06	0.20	0.22
Avail Cap(c_a), veh/h	478	1243		937	1259	658	436	1317	554	467	680	624
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.4	8.1	0.0	11.9	7.9	7.9	9.9	8.6	11.1	9.3	9.0	9.0
Incr Delay (d2), s/veh	0.4	0.6	0.0	1.3	0.5	1.0	0.1	0.2	6.8	0.2	0.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.0	0.0	1.4	0.8	0.9	0.1	0.4	3.3	0.2	0.8	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.8	8.8	0.0	13.2	8.4	8.9	10.0	8.8	18.0	9.5	9.6	9.8
LnGrp LOS	A	A		B	A	A	A	A	B	A	A	A
Approach Vol, veh/h		426			880			542			302	
Approach Delay, s/veh		8.9			10.6			15.3			9.7	
Approach LOS		A			B			B			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		22.5		20.0		22.5				
Change Period (Y+Rc), s		4.0		* 4.5		4.0		4.5				
Max Green Setting (Gmax), s		16.0		* 16		16.0		18.0				
Max Q Clear Time (g_c+I1), s		11.3		6.5		4.4		13.4				
Green Ext Time (p_c), s		1.1		1.9		1.3		2.3				

### Intersection Summary

HCM 6th Ctrl Delay	11.3
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.  
 Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



HCM 6th Signalized Intersection Summary  
 2: John S Gibson Blvd & I-110 NB Ramps

10/16/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↕		↖	↕		↖	↕	
Traffic Volume (veh/h)	8	14	59	10	63	33	715	388	17	52	500	8
Future Volume (veh/h)	8	14	59	10	63	33	715	388	17	52	500	8
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	1530	1796	1885	1159	448	522	1870	1856	1381	937	1781	1900
Adj Flow Rate, veh/h	10	17	70	15	95	50	777	422	18	55	526	8
Peak Hour Factor	0.84	0.84	0.84	0.66	0.66	0.66	0.92	0.92	0.92	0.95	0.95	0.95
Percent Heavy Veh, %	25	7	1	50	98	93	2	3	35	65	8	0
Cap, veh/h	450	123	505	476	221	109	851	1378	59	330	1365	21
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	1017	307	1262	812	551	272	1688	3445	147	475	3413	52
Grp Volume(v), veh/h	10	0	87	15	72	73	777	215	225	55	261	273
Grp Sat Flow(s),veh/h/ln	1017	0	1569	812	425	399	844	1763	1829	475	1692	1772
Q Serve(g_s), s	0.3	0.0	1.4	0.5	4.9	5.4	11.6	3.3	3.4	3.6	4.4	4.4
Cycle Q Clear(g_c), s	5.7	0.0	1.4	1.9	4.9	5.4	16.0	3.3	3.4	6.9	4.4	4.4
Prop In Lane	1.00		0.80	1.00		0.68	1.00		0.08	1.00		0.03
Lane Grp Cap(c), veh/h	450	0	628	476	170	159	851	705	732	330	677	709
V/C Ratio(X)	0.02	0.00	0.14	0.03	0.42	0.46	0.91	0.31	0.31	0.17	0.39	0.39
Avail Cap(c_a), veh/h	450	0	628	476	170	159	851	705	732	330	677	709
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.9	0.0	7.6	8.2	8.7	8.8	16.3	8.2	8.2	10.6	8.5	8.5
Incr Delay (d2), s/veh	0.1	0.0	0.5	0.1	7.5	9.2	15.9	1.1	1.1	1.1	1.7	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(50%),veh/ln	0.1	0.0	0.4	0.1	0.7	0.7	5.1	1.1	1.2	0.4	1.5	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.0	0.0	8.1	8.3	16.2	18.0	32.2	9.3	9.3	11.7	10.2	10.1
LnGrp LOS	B	A	A	A	B	B	C	A	A	B	B	B
Approach Vol, veh/h		97			160			1217			589	
Approach Delay, s/veh		8.4			16.3			23.9			10.3	
Approach LOS		A			B			C			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		20.0		20.0		20.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		16.0		16.0		16.0		16.0				
Max Q Clear Time (g_c+I1), s		18.0		7.7		8.9		7.4				
Green Ext Time (p_c), s		0.0		0.2		2.2		0.5				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				18.7								
HCM 6th LOS				B								

# HCM 6th Signalized Intersection Summary

## 1: John S Gibson Blvd & S Figueroa St & W Harry Bridges Blvd

10/16/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↑↑	↘	↗↘	↑↑↑		↗	↑↑	↘	↗	↑↑	↘
Traffic Volume (veh/h)	53	290	21	268	410	24	8	86	276	20	87	66
Future Volume (veh/h)	53	290	21	268	410	24	8	86	276	20	87	66
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	1767	1515	1485	1574	1500	1781	1159	1856	1515	1678	1856	1856
Adj Flow Rate, veh/h	65	358	0	335	512	30	9	97	310	25	109	82
Peak Hour Factor	0.81	0.81	0.81	0.80	0.80	0.80	0.89	0.89	0.89	0.80	0.80	0.80
Percent Heavy Veh, %	9	26	28	22	27	8	50	3	26	15	3	3
Cap, veh/h	445	1219		910	1676	97	418	1327	483	484	749	520
Arrive On Green	0.42	0.42	0.00	0.42	0.42	0.42	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	816	2878	1259	1671	3958	230	739	3526	1284	878	1989	1381
Grp Volume(v), veh/h	65	358	0	335	352	190	9	97	310	25	96	95
Grp Sat Flow(s),veh/h/ln	816	1439	1259	835	1365	1458	739	1763	1284	878	1763	1607
Q Serve(g_s), s	2.4	3.5	0.0	7.0	3.6	3.7	0.3	0.7	8.4	0.8	1.5	1.7
Cycle Q Clear(g_c), s	6.1	3.5	0.0	10.5	3.6	3.7	2.0	0.7	8.4	1.5	1.5	1.7
Prop In Lane	1.00		1.00	1.00		0.16	1.00		1.00	1.00		0.86
Lane Grp Cap(c), veh/h	445	1219		910	1156	618	418	1327	483	484	664	605
V/C Ratio(X)	0.15	0.29		0.37	0.30	0.31	0.02	0.07	0.64	0.05	0.14	0.16
Avail Cap(c_a), veh/h	445	1219		910	1156	618	418	1327	483	484	664	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.1	8.1	0.0	11.5	8.1	8.1	9.5	8.5	10.9	9.0	8.7	8.8
Incr Delay (d2), s/veh	0.7	0.6	0.0	1.1	0.7	1.3	0.1	0.1	6.4	0.2	0.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.9	0.0	1.2	0.9	1.1	0.1	0.2	2.7	0.1	0.5	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.8	8.7	0.0	12.7	8.8	9.4	9.5	8.6	17.3	9.2	9.2	9.3
LnGrp LOS	B	A		B	A	A	A	A	B	A	A	A
Approach Vol, veh/h		423			877			416			216	
Approach Delay, s/veh		9.0			10.4			15.1			9.3	
Approach LOS		A			B			B			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		22.5		20.0		22.5				
Change Period (Y+Rc), s		4.0		* 4.5		4.0		4.5				
Max Green Setting (Gmax), s		16.0		* 16		16.0		18.0				
Max Q Clear Time (g_c+I1), s		10.4		8.1		3.7		12.5				
Green Ext Time (p_c), s		0.9		1.7		0.9		2.7				

### Intersection Summary

HCM 6th Ctrl Delay	11.0
HCM 6th LOS	B






















### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary  
 2: John S Gibson Blvd & I-110 NB Ramps

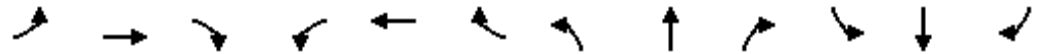
10/16/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	7	24	15	127	77	437	322	6	66	329	19
Future Volume (veh/h)	5	7	24	15	127	77	437	322	6	66	329	19
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	1307	1278	1722	1515	551	522	1826	1856	1411	611	1811	1900
Adj Flow Rate, veh/h	6	8	27	16	137	83	546	402	8	81	406	23
Peak Hour Factor	0.90	0.90	0.90	0.93	0.93	0.93	0.80	0.80	0.80	0.81	0.81	0.81
Percent Heavy Veh, %	40	42	12	26	91	93	5	3	33	87	6	0
Cap, veh/h	362	103	346	603	257	147	934	1414	28	283	1324	75
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	811	256	865	1112	643	367	1816	3535	70	319	3311	187
Grp Volume(v), veh/h	6	0	35	16	110	110	546	200	210	81	210	219
Grp Sat Flow(s),veh/h/ln	811	0	1122	1112	524	485	908	1763	1843	319	1721	1777
Q Serve(g_s), s	0.2	0.0	0.8	0.4	6.4	7.0	11.8	3.1	3.1	9.2	3.3	3.4
Cycle Q Clear(g_c), s	7.3	0.0	0.8	1.1	6.4	7.0	15.1	3.1	3.1	12.3	3.3	3.4
Prop In Lane	1.00		0.77	1.00		0.76	1.00		0.04	1.00		0.11
Lane Grp Cap(c), veh/h	362	0	449	603	210	194	934	705	737	283	688	711
V/C Ratio(X)	0.02	0.00	0.08	0.03	0.53	0.57	0.58	0.28	0.28	0.29	0.31	0.31
Avail Cap(c_a), veh/h	362	0	449	603	210	194	934	705	737	283	688	711
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.1	0.0	7.4	7.8	9.1	9.3	13.4	8.1	8.1	12.3	8.2	8.2
Incr Delay (d2), s/veh	0.1	0.0	0.3	0.1	9.1	11.4	2.7	1.0	1.0	2.5	1.1	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(50%),veh/ln	0.0	0.0	0.2	0.1	1.1	1.2	2.2	1.0	1.1	0.7	1.1	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.2	0.0	7.8	7.9	18.2	20.7	16.1	9.1	9.1	14.8	9.4	9.3
LnGrp LOS	B	A	A	A	B	C	B	A	A	B	A	A
Approach Vol, veh/h		41			236			956			510	
Approach Delay, s/veh		8.4			18.7			13.1			10.2	
Approach LOS		A			B			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		20.0		20.0		20.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		16.0		16.0		16.0		16.0				
Max Q Clear Time (g_c+I1), s		17.1		9.3		14.3		9.0				
Green Ext Time (p_c), s		0.0		0.1		0.7		0.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				12.9								
HCM 6th LOS				B								

# HCM 6th Signalized Intersection Summary

## 1: John S Gibson Blvd & S Figueroa St & W Harry Bridges Blvd

10/16/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↑↑	↗	↵↗	↑↑↗		↵	↑↑	↗	↵	↑↑	↗
Traffic Volume (veh/h)	59	441	43	449	567	40	6	101	305	29	101	44
Future Volume (veh/h)	59	441	43	449	567	40	6	101	305	29	101	44
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	1900	1707	1707	1796	1707	1870	1663	1856	1722	1856	1900	1870
Adj Flow Rate, veh/h	68	507	0	499	630	44	7	116	351	33	116	51
Peak Hour Factor	0.87	0.87	0.87	0.90	0.90	0.90	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	13	13	7	13	2	16	3	12	3	0	2
Cap, veh/h	424	1374		865	1885	131	542	1327	549	496	934	391
Arrive On Green	0.42	0.42	0.00	0.42	0.42	0.42	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	777	3244	1447	1662	4450	309	1083	3526	1459	919	2481	1037
Grp Volume(v), veh/h	68	507	0	499	439	235	7	116	351	33	83	84
Grp Sat Flow(s),veh/h/ln	777	1622	1447	831	1554	1652	1083	1763	1459	919	1805	1713
Q Serve(g_s), s	2.7	4.5	0.0	12.5	4.0	4.1	0.2	0.9	8.4	1.0	1.3	1.4
Cycle Q Clear(g_c), s	6.8	4.5	0.0	17.0	4.0	4.1	1.6	0.9	8.4	1.9	1.3	1.4
Prop In Lane	1.00		1.00	1.00		0.19	1.00		1.00	1.00		0.61
Lane Grp Cap(c), veh/h	424	1374		865	1316	700	542	1327	549	496	680	645
V/C Ratio(X)	0.16	0.37		0.58	0.33	0.34	0.01	0.09	0.64	0.07	0.12	0.13
Avail Cap(c_a), veh/h	424	1374		865	1316	700	542	1327	549	496	680	645
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.5	8.4	0.0	14.2	8.2	8.2	9.2	8.5	10.9	9.2	8.7	8.7
Incr Delay (d2), s/veh	0.8	0.8	0.0	2.8	0.7	1.3	0.0	0.1	5.6	0.3	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.3	0.0	2.2	1.1	1.3	0.0	0.3	2.9	0.2	0.5	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.3	9.1	0.0	17.0	8.9	9.5	9.2	8.7	16.5	9.4	9.0	9.1
LnGrp LOS	B	A		B	A	A	A	A	B	A	A	A
Approach Vol, veh/h		575			1173			474			200	
Approach Delay, s/veh		9.4			12.5			14.5			9.1	
Approach LOS		A			B			B			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		22.5		20.0		22.5				
Change Period (Y+Rc), s		4.0		* 4.5		4.0		4.5				
Max Green Setting (Gmax), s		16.0		* 16		16.0		18.0				
Max Q Clear Time (g_c+I1), s		10.4		8.8		3.9		19.0				
Green Ext Time (p_c), s		1.0		2.2		0.8		0.0				

### Intersection Summary

HCM 6th Ctrl Delay	11.8
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

# HCM 6th Signalized Intersection Summary

## 2: John S Gibson Blvd & I-110 NB Ramps

10/16/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↕		↖	↕		↖	↕	
Traffic Volume (veh/h)	5	12	73	51	62	45	466	349	18	108	581	10
Future Volume (veh/h)	5	12	73	51	62	45	466	349	18	108	581	10
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	1604	1781	1885	1885	1307	922	1856	1856	1900	1663	1826	1900
Adj Flow Rate, veh/h	6	14	88	72	87	63	501	375	19	129	692	12
Peak Hour Factor	0.83	0.83	0.83	0.71	0.71	0.71	0.93	0.93	0.93	0.84	0.84	0.84
Percent Heavy Veh, %	20	8	1	1	40	66	3	3	0	16	5	0
Cap, veh/h	559	85	532	646	571	380	720	1366	69	467	1396	24
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	1061	212	1330	1303	1428	950	1431	3415	172	880	3489	60
Grp Volume(v), veh/h	6	0	102	72	75	75	501	193	201	129	344	360
Grp Sat Flow(s),veh/h/ln	1061	0	1542	1303	1242	1136	715	1763	1824	880	1735	1815
Q Serve(g_s), s	0.1	0.0	1.7	1.5	1.5	1.7	10.1	3.0	3.0	4.6	5.9	5.9
Cycle Q Clear(g_c), s	1.9	0.0	1.7	3.2	1.5	1.7	16.0	3.0	3.0	7.6	5.9	5.9
Prop In Lane	1.00		0.86	1.00		0.84	1.00		0.09	1.00		0.03
Lane Grp Cap(c), veh/h	559	0	617	646	497	454	720	705	730	467	694	726
V/C Ratio(X)	0.01	0.00	0.17	0.11	0.15	0.17	0.70	0.27	0.28	0.28	0.50	0.50
Avail Cap(c_a), veh/h	559	0	617	646	497	454	720	705	730	467	694	726
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.3	0.0	7.7	8.7	7.7	7.7	16.4	8.1	8.1	10.7	9.0	9.0
Incr Delay (d2), s/veh	0.0	0.0	0.6	0.3	0.6	0.8	5.5	1.0	0.9	1.5	2.5	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.5	0.4	0.4	0.4	2.6	1.0	1.0	0.9	2.1	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.3	0.0	8.3	9.1	8.3	8.5	21.9	9.0	9.0	12.1	11.5	11.4
LnGrp LOS	A	A	A	A	A	A	C	A	A	B	B	B
Approach Vol, veh/h		108			222			895			833	
Approach Delay, s/veh		8.3			8.6			16.2			11.6	
Approach LOS		A			A			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		20.0		20.0		20.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		16.0		16.0		16.0		16.0				
Max Q Clear Time (g_c+I1), s		18.0		3.9		9.6		5.2				
Green Ext Time (p_c), s		0.0		0.4		2.7		0.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				13.1								
HCM 6th LOS				B								



# HCM 6th Signalized Intersection Summary

## 1: John S Gibson Blvd & S Figueroa St & W Harry Bridges Blvd

10/16/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘↗	↑↑↑		↘	↑↑	↗	↘	↑↑	
Traffic Volume (veh/h)	57	427	56	297	419	76	22	80	233	32	106	110
Future Volume (veh/h)	57	427	56	297	419	76	22	80	233	32	106	110
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	1752	1515	1189	1663	1500	1826	1633	1870	1722	1441	1796	1870
Adj Flow Rate, veh/h	62	464	0	323	455	83	24	87	253	35	115	120
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	10	26	48	16	27	5	18	2	12	31	7	2
Cap, veh/h	441	1219		840	1480	264	493	1338	549	459	642	573
Arrive On Green	0.42	0.42	0.00	0.42	0.42	0.42	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	812	2878	1007	1601	3495	623	1000	3554	1459	801	1706	1522
Grp Volume(v), veh/h	62	464	0	323	353	185	24	87	253	35	115	120
Grp Sat Flow(s),veh/h/ln	812	1439	1007	801	1365	1388	1000	1777	1459	801	1706	1522
Q Serve(g_s), s	2.3	4.7	0.0	7.4	3.6	3.8	0.7	0.7	5.6	1.2	1.9	2.3
Cycle Q Clear(g_c), s	6.1	4.7	0.0	12.1	3.6	3.8	3.0	0.7	5.6	1.9	1.9	2.3
Prop In Lane	1.00		1.00	1.00		0.45	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	441	1219		840	1156	588	493	1338	549	459	642	573
V/C Ratio(X)	0.14	0.38		0.38	0.31	0.31	0.05	0.07	0.46	0.08	0.18	0.21
Avail Cap(c_a), veh/h	441	1219		840	1156	588	493	1338	549	459	642	573
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.2	8.4	0.0	12.6	8.1	8.1	10.0	8.5	10.0	9.1	8.9	9.0
Incr Delay (d2), s/veh	0.7	0.9	0.0	1.3	0.7	1.4	0.2	0.1	2.8	0.3	0.6	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.2	0.0	1.2	0.9	1.1	0.2	0.2	1.8	0.2	0.7	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.8	9.3	0.0	13.9	8.8	9.5	10.2	8.6	12.8	9.4	9.5	9.8
LnGrp LOS	B	A		B	A	A	B	A	B	A	A	A
Approach Vol, veh/h		526			861			364			270	
Approach Delay, s/veh		9.5			10.9			11.6			9.6	
Approach LOS		A			B			B			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		22.5		20.0		22.5				
Change Period (Y+Rc), s		4.0		* 4.5		4.0		4.5				
Max Green Setting (Gmax), s		16.0		* 16		16.0		18.0				
Max Q Clear Time (g_c+I1), s		7.6		8.1		4.3		14.1				
Green Ext Time (p_c), s		1.0		2.2		1.2		2.1				

### Intersection Summary

HCM 6th Ctrl Delay	10.5
HCM 6th LOS	B






















### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary  
 2: John S Gibson Blvd & I-110 NB Ramps

10/16/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	40	100	21	80	31	738	318	30	108	375	12
Future Volume (veh/h)	16	40	100	21	80	31	738	318	30	108	375	12
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	1722	1129	1781	848	462	522	1856	1826	1663	1115	1737	1900
Adj Flow Rate, veh/h	17	43	109	23	87	34	802	346	33	117	408	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	12	52	8	71	97	93	3	5	16	53	11	0
Cap, veh/h	285	75	191	196	167	62	1249	1921	182	450	1959	62
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.60	0.60	0.60	0.60	0.60	0.60
Sat Flow, veh/h	1170	283	717	560	627	233	1859	3202	304	598	3265	104
Grp Volume(v), veh/h	17	0	152	23	60	61	802	186	193	117	206	215
Grp Sat Flow(s),veh/h/ln	1170	0	1000	560	439	421	929	1735	1771	598	1650	1718
Q Serve(g_s), s	0.8	0.0	7.9	2.2	6.9	7.5	20.8	2.9	2.9	6.5	3.4	3.4
Cycle Q Clear(g_c), s	8.3	0.0	7.9	10.1	6.9	7.5	24.3	2.9	2.9	9.5	3.4	3.4
Prop In Lane	1.00		0.72	1.00		0.55	1.00		0.17	1.00		0.06
Lane Grp Cap(c), veh/h	285	0	267	196	117	112	1249	1041	1063	450	990	1031
V/C Ratio(X)	0.06	0.00	0.57	0.12	0.51	0.55	0.64	0.18	0.18	0.26	0.21	0.21
Avail Cap(c_a), veh/h	285	0	267	196	117	112	1249	1041	1063	450	990	1031
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.4	0.0	19.0	23.4	18.7	18.9	11.0	5.4	5.4	7.5	5.5	5.5
Incr Delay (d2), s/veh	0.4	0.0	8.6	1.2	14.9	17.8	2.5	0.4	0.4	1.4	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	2.3	0.3	1.1	1.2	3.8	0.9	0.9	0.8	1.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.8	0.0	27.6	24.6	33.6	36.7	13.6	5.8	5.8	8.9	6.0	5.9
LnGrp LOS	C	A	C	C	C	D	B	A	A	A	A	A
Approach Vol, veh/h		169			144			1181			538	
Approach Delay, s/veh		27.1			33.5			11.1			6.6	
Approach LOS		C			C			B			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		40.0		20.0		40.0		20.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		36.0		16.0		36.0		16.0				
Max Q Clear Time (g_c+I1), s		26.3		10.3		11.5		12.1				
Green Ext Time (p_c), s		5.1		0.4		3.9		0.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				12.8								
HCM 6th LOS				B								

# HCM 6th Signalized Intersection Summary

## 1: John S Gibson Blvd & S Figueroa St & W Harry Bridges Blvd

10/16/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷	↷	↶↷	↷↶↷		↶	↷	↷	↶	↷	↷
Traffic Volume (veh/h)	114	329	53	269	458	42	18	154	264	42	149	218
Future Volume (veh/h)	114	329	53	269	458	42	18	154	264	42	149	218
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	1278	1203	1633	1352	1767	1574	1870	1633	1455	1811	1870
Adj Flow Rate, veh/h	124	358	0	292	498	46	20	167	287	46	162	237
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	42	47	18	37	9	22	2	18	30	6	2
Cap, veh/h	443	1028		900	1457	133	387	1338	521	421	648	578
Arrive On Green	0.42	0.42	0.00	0.42	0.42	0.42	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	842	2427	1020	1734	3441	314	829	3554	1384	729	1721	1535
Grp Volume(v), veh/h	124	358	0	292	354	190	20	167	287	46	162	237
Grp Sat Flow(s),veh/h/ln	842	1214	1020	867	1230	1295	829	1777	1384	729	1721	1535
Q Serve(g_s), s	5.0	4.2	0.0	5.8	4.1	4.2	0.8	1.3	6.9	1.9	2.8	4.8
Cycle Q Clear(g_c), s	9.2	4.2	0.0	10.1	4.1	4.2	5.6	1.3	6.9	3.2	2.8	4.8
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	443	1028		900	1042	549	387	1338	521	421	648	578
V/C Ratio(X)	0.28	0.35		0.32	0.34	0.35	0.05	0.12	0.55	0.11	0.25	0.41
Avail Cap(c_a), veh/h	443	1028		900	1042	549	387	1338	521	421	648	578
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.4	8.3	0.0	11.7	8.3	8.3	11.8	8.7	10.4	9.7	9.1	9.8
Incr Delay (d2), s/veh	1.6	0.9	0.0	1.0	0.9	1.7	0.3	0.2	4.2	0.5	0.9	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.0	0.0	1.0	0.9	1.1	0.1	0.4	2.2	0.3	1.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.9	9.2	0.0	12.6	9.1	10.0	12.1	8.9	14.6	10.2	10.0	11.9
LnGrp LOS	B	A		B	A	A	B	A	B	B	B	B
Approach Vol, veh/h		482			836			474			445	
Approach Delay, s/veh		10.2			10.6			12.5			11.1	
Approach LOS		B			B			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		22.5		20.0		22.5				
Change Period (Y+Rc), s		4.0		* 4.5		4.0		4.5				
Max Green Setting (Gmax), s		16.0		* 16		16.0		18.0				
Max Q Clear Time (g_c+I1), s		8.9		11.2		6.8		12.1				
Green Ext Time (p_c), s		1.3		1.4		1.9		2.7				

### Intersection Summary

HCM 6th Ctrl Delay	11.0
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

# HCM 6th Signalized Intersection Summary

## 2: John S Gibson Blvd & I-110 NB Ramps

10/16/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↕		↖	↕		↖	↕	
Traffic Volume (veh/h)	9	13	203	29	133	65	649	355	18	85	306	17
Future Volume (veh/h)	9	13	203	29	133	65	649	355	18	85	306	17
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	1737	996	1767	1396	551	611	1826	1856	1663	655	1811	1826
Adj Flow Rate, veh/h	10	14	221	32	145	71	705	386	20	92	333	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	11	61	9	34	91	87	5	3	16	84	6	5
Cap, veh/h	283	16	256	196	222	103	1198	1773	92	301	1727	93
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.52	0.52	0.52	0.52	0.52	0.52
Sat Flow, veh/h	1082	51	801	855	694	323	1951	3410	176	343	3321	179
Grp Volume(v), veh/h	10	0	235	32	108	108	705	199	207	92	172	179
Grp Sat Flow(s),veh/h/ln	1082	0	852	855	524	493	975	1763	1824	343	1721	1779
Q Serve(g_s), s	0.4	0.0	13.0	1.8	8.8	9.6	15.1	3.1	3.1	9.9	2.7	2.7
Cycle Q Clear(g_c), s	10.0	0.0	13.0	14.8	8.8	9.6	17.8	3.1	3.1	13.0	2.7	2.7
Prop In Lane	1.00		0.94	1.00		0.66	1.00		0.10	1.00		0.10
Lane Grp Cap(c), veh/h	283	0	273	196	168	158	1198	917	948	301	895	925
V/C Ratio(X)	0.04	0.00	0.86	0.16	0.64	0.69	0.59	0.22	0.22	0.31	0.19	0.19
Avail Cap(c_a), veh/h	283	0	273	196	168	158	1198	917	948	301	895	925
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.2	0.0	16.0	22.9	14.6	14.8	11.2	6.5	6.5	10.0	6.4	6.4
Incr Delay (d2), s/veh	0.2	0.0	28.3	1.8	17.4	21.6	2.1	0.5	0.5	2.6	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	4.3	0.4	1.7	1.9	2.9	1.0	1.0	0.8	0.8	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.4	0.0	44.3	24.7	32.0	36.4	13.3	7.0	7.0	12.6	6.9	6.9
LnGrp LOS	B	A	D	C	C	D	B	A	A	B	A	A
Approach Vol, veh/h		245			248			1111			443	
Approach Delay, s/veh		43.3			33.0			11.0			8.1	
Approach LOS		D			C			B			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		30.0		20.0		30.0		20.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		26.0		16.0		26.0		16.0				
Max Q Clear Time (g_c+I1), s		19.8		15.0		15.0		16.8				
Green Ext Time (p_c), s		3.4		0.2		2.8		0.0				

### Intersection Summary

HCM 6th Ctrl Delay	16.9
HCM 6th LOS	B

# HCM 6th Signalized Intersection Summary

## 1: John S Gibson Blvd & S Figueroa St & W Harry Bridges Blvd

10/16/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↑↑	↵	↵↵	↑↑↑		↵	↑↑	↵	↵	↑↑	↵
Traffic Volume (veh/h)	158	444	59	397	508	66	26	155	359	62	199	53
Future Volume (veh/h)	158	444	59	397	508	66	26	155	359	62	199	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1722	1455	1767	1648	1856	1678	1900	1722	1604	1870	1885
Adj Flow Rate, veh/h	172	483	0	432	552	72	28	168	390	67	216	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	12	30	9	17	3	15	0	12	20	2	1
Cap, veh/h	436	1386		880	1709	220	489	1359	549	422	1049	275
Arrive On Green	0.42	0.42	0.00	0.42	0.42	0.42	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	807	3272	1233	1672	4035	519	991	3610	1459	730	2785	731
Grp Volume(v), veh/h	172	483	0	432	408	216	28	168	390	67	136	138
Grp Sat Flow(s),veh/h/ln	807	1636	1233	836	1500	1555	991	1805	1459	730	1777	1739
Q Serve(g_s), s	7.7	4.2	0.0	10.0	3.9	3.9	0.8	1.3	9.7	2.8	2.2	2.3
Cycle Q Clear(g_c), s	11.6	4.2	0.0	14.3	3.9	3.9	3.1	1.3	9.7	4.1	2.2	2.3
Prop In Lane	1.00		1.00	1.00		0.33	1.00		1.00	1.00		0.42
Lane Grp Cap(c), veh/h	436	1386		880	1270	658	489	1359	549	422	669	655
V/C Ratio(X)	0.39	0.35		0.49	0.32	0.33	0.06	0.12	0.71	0.16	0.20	0.21
Avail Cap(c_a), veh/h	436	1386		880	1270	658	489	1359	549	422	669	655
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.1	8.3	0.0	13.1	8.2	8.2	10.0	8.7	11.3	10.0	8.9	9.0
Incr Delay (d2), s/veh	2.7	0.7	0.0	2.0	0.7	1.3	0.2	0.2	7.6	0.8	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.2	0.0	1.7	1.0	1.2	0.2	0.4	3.5	0.4	0.8	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.8	9.0	0.0	15.1	8.8	9.5	10.3	8.9	18.8	10.8	9.6	9.7
LnGrp LOS	B	A		B	A	A	B	A	B	B	A	A
Approach Vol, veh/h		655			1056			586			341	
Approach Delay, s/veh		10.5			11.5			15.6			9.9	
Approach LOS		B			B			B			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		22.5		20.0		22.5				
Change Period (Y+Rc), s		4.0		* 4.5		4.0		4.5				
Max Green Setting (Gmax), s		16.0		* 16		16.0		18.0				
Max Q Clear Time (g_c+I1), s		11.7		13.6		6.1		16.3				
Green Ext Time (p_c), s		1.1		1.0		1.4		1.1				

### Intersection Summary

HCM 6th Ctrl Delay	12.0
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.  
 Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary  
 2: John S Gibson Blvd & I-110 NB Ramps

10/16/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↘		↗	↕		↗	↕		↗	↕	
Traffic Volume (veh/h)	9	8	125	34	72	44	556	417	12	123	512	17
Future Volume (veh/h)	9	8	125	34	72	44	556	417	12	123	512	17
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	1900	1530	1811	1292	774	700	1870	1870	1781	1707	1811	1900
Adj Flow Rate, veh/h	10	9	136	37	78	48	604	453	13	134	557	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	25	6	41	76	81	2	2	8	13	6	0
Cap, veh/h	366	22	327	271	241	137	1088	2117	61	578	2041	66
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.60	0.60	0.60	0.60	0.60	0.60
Sat Flow, veh/h	1285	81	1227	859	902	514	1626	3528	101	846	3402	110
Grp Volume(v), veh/h	10	0	145	37	62	64	604	228	238	134	281	294
Grp Sat Flow(s),veh/h/ln	1285	0	1309	859	735	681	813	1777	1852	846	1721	1791
Q Serve(g_s), s	0.4	0.0	5.5	2.2	4.1	4.5	17.0	3.5	3.5	5.2	4.7	4.7
Cycle Q Clear(g_c), s	4.9	0.0	5.5	7.7	4.1	4.5	21.7	3.5	3.5	8.7	4.7	4.7
Prop In Lane	1.00		0.94	1.00		0.75	1.00		0.05	1.00		0.06
Lane Grp Cap(c), veh/h	366	0	349	271	196	182	1088	1066	1111	578	1032	1075
V/C Ratio(X)	0.03	0.00	0.42	0.14	0.32	0.35	0.56	0.21	0.21	0.23	0.27	0.27
Avail Cap(c_a), veh/h	366	0	349	271	196	182	1088	1066	1111	578	1032	1075
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.8	0.0	18.1	21.3	17.6	17.8	10.9	5.5	5.5	7.5	5.7	5.7
Incr Delay (d2), s/veh	0.1	0.0	3.6	1.1	4.2	5.2	2.0	0.5	0.4	0.9	0.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	1.9	0.5	0.9	0.9	2.8	1.1	1.2	0.9	1.5	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.9	0.0	21.8	22.4	21.9	23.0	13.0	6.0	5.9	8.4	6.4	6.4
LnGrp LOS	B	A	C	C	C	C	B	A	A	A	A	A
Approach Vol, veh/h		155			163			1070			709	
Approach Delay, s/veh		21.6			22.4			9.9			6.8	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		40.0		20.0		40.0		20.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		36.0		16.0		36.0		16.0				
Max Q Clear Time (g_c+I1), s		23.7		7.5		10.7		9.7				
Green Ext Time (p_c), s		5.8		0.5		4.6		0.4				

Intersection Summary

HCM 6th Ctrl Delay	10.7
HCM 6th LOS	B



# HCM 6th Signalized Intersection Summary

## 1: John S Gibson Blvd & S Figueroa St & W Harry Bridges Blvd

10/17/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↑↑	↵	↵↵	↑↑↑		↵	↑↑	↵	↵	↑↑	↵
Traffic Volume (veh/h)	31	394	155	388	452	86	131	110	353	112	179	120
Future Volume (veh/h)	31	394	155	388	452	86	131	110	353	112	179	120
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	1811	1559	863	1604	1530	1841	1470	1870	1604	1559	1618	1885
Adj Flow Rate, veh/h	34	428	0	422	491	93	142	120	384	122	195	130
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	23	70	20	25	4	29	2	20	23	19	1
Cap, veh/h	434	1255		859	1499	278	415	1338	512	434	679	431
Arrive On Green	0.42	0.42	0.00	0.42	0.42	0.42	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	805	2962	731	1596	3539	656	829	3554	1359	746	1805	1145
Grp Volume(v), veh/h	34	428	0	422	384	200	142	120	384	122	165	160
Grp Sat Flow(s),veh/h/ln	805	1481	731	798	1392	1411	829	1777	1359	746	1537	1412
Q Serve(g_s), s	1.3	4.1	0.0	10.3	3.9	4.0	6.2	0.9	10.4	5.4	3.2	3.4
Cycle Q Clear(g_c), s	5.3	4.1	0.0	14.4	3.9	4.0	9.6	0.9	10.4	6.3	3.2	3.4
Prop In Lane	1.00		1.00	1.00		0.46	1.00		1.00	1.00		0.81
Lane Grp Cap(c), veh/h	434	1255		859	1179	598	415	1338	512	434	579	532
V/C Ratio(X)	0.08	0.34		0.49	0.33	0.33	0.34	0.09	0.75	0.28	0.28	0.30
Avail Cap(c_a), veh/h	434	1255		859	1179	598	415	1338	512	434	579	532
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.0	8.3	0.0	13.1	8.2	8.2	12.7	8.6	11.5	10.6	9.3	9.3
Incr Delay (d2), s/veh	0.4	0.7	0.0	2.0	0.7	1.5	2.2	0.1	9.7	1.6	1.2	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(50%),veh/ln	0.2	1.1	0.0	1.7	1.0	1.2	1.2	0.3	3.8	0.9	1.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.4	9.0	0.0	15.1	8.9	9.7	14.9	8.7	21.3	12.2	10.5	10.8
LnGrp LOS	B	A		B	A	A	B	A	C	B	B	B
Approach Vol, veh/h		462			1006			646			447	
Approach Delay, s/veh		9.1			11.7			17.5			11.1	
Approach LOS		A			B			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		22.5		20.0		22.5				
Change Period (Y+Rc), s		4.0		* 4.5		4.0		4.5				
Max Green Setting (Gmax), s		16.0		* 16		16.0		18.0				
Max Q Clear Time (g_c+I1), s		12.4		7.3		8.3		16.4				
Green Ext Time (p_c), s		1.1		2.0		1.7		1.0				

### Intersection Summary

HCM 6th Ctrl Delay	12.6
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

# HCM 6th Signalized Intersection Summary

## 2: John S Gibson Blvd & I-110 NB Ramps

10/17/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Traffic Volume (veh/h)	12	64	57	54	133	119	634	424	53	342	385	12
Future Volume (veh/h)	12	64	57	54	133	119	634	424	53	342	385	12
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	1900	981	1381	1411	655	685	1841	1841	1485	996	1781	1900
Adj Flow Rate, veh/h	13	70	62	59	145	129	689	461	58	372	418	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	62	35	33	84	82	4	4	28	61	8	0
Cap, veh/h	145	131	116	239	177	146	1224	1934	242	356	2073	64
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.62	0.62	0.62	0.62	0.62	0.62
Sat Flow, veh/h	1123	480	425	949	647	534	1827	3127	392	470	3351	104
Grp Volume(v), veh/h	13	0	132	59	139	135	689	257	262	372	211	220
Grp Sat Flow(s),veh/h/ln	1123	0	905	949	622	559	914	1749	1770	470	1692	1763
Q Serve(g_s), s	0.8	0.0	9.2	4.2	15.5	17.2	19.6	4.9	4.9	41.1	4.0	4.1
Cycle Q Clear(g_c), s	18.0	0.0	9.2	13.4	15.5	17.2	23.7	4.9	4.9	46.0	4.0	4.1
Prop In Lane	1.00		0.47	1.00		0.96	1.00		0.22	1.00		0.06
Lane Grp Cap(c), veh/h	145	0	248	239	170	153	1224	1082	1095	356	1047	1090
V/C Ratio(X)	0.09	0.00	0.53	0.25	0.82	0.88	0.56	0.24	0.24	1.04	0.20	0.20
Avail Cap(c_a), veh/h	230	0	316	311	218	195	1224	1082	1095	356	1047	1090
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.5	0.0	23.0	28.7	25.2	25.8	11.3	6.3	6.4	22.2	6.2	6.2
Incr Delay (d2), s/veh	0.3	0.0	1.8	0.5	16.8	29.2	1.9	0.5	0.5	59.6	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	2.0	1.0	3.0	3.4	3.7	1.7	1.7	12.2	1.2	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.7	0.0	24.7	29.2	42.0	55.0	13.2	6.9	6.9	81.9	6.3	6.3
LnGrp LOS	C	A	C	C	D	E	B	A	A	F	A	A
Approach Vol, veh/h		145			333			1208				803
Approach Delay, s/veh		25.6			45.0			10.5				41.3
Approach LOS		C			D			B				D
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		50.0		24.4		50.0		24.4				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		46.0		26.0		46.0		26.0				
Max Q Clear Time (g_c+I1), s		25.7		20.0		48.0		19.2				
Green Ext Time (p_c), s		8.1		0.3		0.0		1.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				25.9								
HCM 6th LOS				C								

# HCM 6th Signalized Intersection Summary

## 1: John S Gibson Blvd & S Figueroa St & W Harry Bridges Blvd

10/17/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘↗	↑↑↑		↘	↑↑	↗	↘	↑↑	
Traffic Volume (veh/h)	53	324	130	342	475	83	84	164	333	51	329	168
Future Volume (veh/h)	53	324	130	342	475	83	84	164	333	51	329	168
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	1737	1218	833	1530	1292	1856	1604	1870	1544	1411	1722	1856
Adj Flow Rate, veh/h	58	352	0	372	516	90	91	178	362	55	358	183
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	11	46	72	25	41	3	20	2	24	33	12	3
Cap, veh/h	398	980		861	1284	220	352	1338	493	394	794	399
Arrive On Green	0.42	0.42	0.00	0.42	0.42	0.42	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	756	2315	706	1633	3032	519	741	3554	1309	653	2108	1059
Grp Volume(v), veh/h	58	352	0	372	398	208	91	178	362	55	276	265
Grp Sat Flow(s),veh/h/ln	756	1157	706	816	1176	1199	741	1777	1309	653	1636	1531
Q Serve(g_s), s	2.5	4.4	0.0	8.5	5.0	5.1	4.5	1.4	10.1	2.6	5.4	5.5
Cycle Q Clear(g_c), s	7.6	4.4	0.0	12.9	5.0	5.1	10.0	1.4	10.1	4.0	5.4	5.5
Prop In Lane	1.00		1.00	1.00		0.43	1.00		1.00	1.00		0.69
Lane Grp Cap(c), veh/h	398	980		861	996	508	352	1338	493	394	616	577
V/C Ratio(X)	0.15	0.36		0.43	0.40	0.41	0.26	0.13	0.73	0.14	0.45	0.46
Avail Cap(c_a), veh/h	398	980		861	996	508	352	1338	493	394	616	577
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.2	8.3	0.0	12.7	8.5	8.5	13.8	8.7	11.4	10.0	9.9	10.0
Incr Delay (d2), s/veh	0.8	1.0	0.0	1.6	1.2	2.4	1.8	0.2	9.4	0.7	2.4	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.0	0.0	1.4	1.1	1.3	0.8	0.5	3.5	0.4	1.9	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.0	9.4	0.0	14.3	9.7	11.0	15.5	8.9	20.8	10.7	12.3	12.6
LnGrp LOS	B	A		B	A	B	B	A	C	B	B	B
Approach Vol, veh/h		410			978			631			596	
Approach Delay, s/veh		9.7			11.7			16.7			12.3	
Approach LOS		A			B			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		22.5		20.0		22.5				
Change Period (Y+Rc), s		4.0		* 4.5		4.0		4.5				
Max Green Setting (Gmax), s		16.0		* 16		16.0		18.0				
Max Q Clear Time (g_c+I1), s		12.1		9.6		7.5		14.9				
Green Ext Time (p_c), s		1.2		1.4		2.5		1.9				

### Intersection Summary

HCM 6th Ctrl Delay	12.7
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.  
 Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary  
 2: John S Gibson Blvd & I-110 NB Ramps

10/17/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↕		↖	↕		↖	↕	
Traffic Volume (veh/h)	9	69	142	65	196	102	507	468	82	407	402	58
Future Volume (veh/h)	9	69	142	65	196	102	507	468	82	407	402	58
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	1737	625	1618	1085	566	611	1796	1856	892	1129	1826	1885
Adj Flow Rate, veh/h	10	75	36	71	213	15	551	509	74	442	437	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	11	86	19	55	90	87	7	3	68	52	5	1
Cap, veh/h	205	117	56	190	298	21	1100	1864	270	358	1889	219
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.60	0.60	0.60	0.60	0.60	0.60
Sat Flow, veh/h	1070	399	192	744	1020	71	1692	3090	447	502	3131	364
Grp Volume(v), veh/h	10	0	111	71	112	116	551	289	294	442	241	247
Grp Sat Flow(s),veh/h/ln	1070	0	591	744	538	553	846	1763	1775	502	1735	1760
Q Serve(g_s), s	0.6	0.0	12.5	7.0	14.1	14.4	17.0	5.9	6.0	40.0	4.9	4.9
Cycle Q Clear(g_c), s	15.0	0.0	12.5	19.5	14.1	14.4	21.9	5.9	6.0	46.0	4.9	4.9
Prop In Lane	1.00		0.32	1.00		0.13	1.00		0.25	1.00		0.21
Lane Grp Cap(c), veh/h	205	0	172	190	157	161	1100	1063	1071	358	1046	1062
V/C Ratio(X)	0.05	0.00	0.64	0.37	0.71	0.72	0.50	0.27	0.27	1.23	0.23	0.23
Avail Cap(c_a), veh/h	258	0	202	226	183	189	1100	1063	1071	358	1046	1062
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.0	0.0	23.5	32.0	24.1	24.2	12.0	7.2	7.2	23.4	7.0	7.0
Incr Delay (d2), s/veh	0.1	0.0	5.4	1.2	10.1	10.6	1.6	0.6	0.6	127.6	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.9	1.3	2.1	2.3	3.1	2.1	2.1	19.2	1.6	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.0	0.0	28.9	33.3	34.3	34.8	13.7	7.8	7.8	151.0	7.1	7.1
LnGrp LOS	C	A	C	C	C	C	B	A	A	F	A	A
Approach Vol, veh/h		121			299			1134				930
Approach Delay, s/veh		29.1			34.2			10.7				75.5
Approach LOS		C			C			B				E
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		50.0		26.2		50.0		26.2				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		46.0		26.0		46.0		26.0				
Max Q Clear Time (g_c+I1), s		23.9		17.0		48.0		21.5				
Green Ext Time (p_c), s		8.2		0.4		0.0		0.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				38.7								
HCM 6th LOS				D								

# HCM 6th Signalized Intersection Summary

## 1: John S Gibson Blvd & S Figueroa St & W Harry Bridges Blvd

10/17/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↑↑	↗	↵↗	↑↑↗		↵	↑↑	↗	↵	↑↑	↗
Traffic Volume (veh/h)	70	468	119	662	604	95	157	209	435	71	471	58
Future Volume (veh/h)	70	468	119	662	604	95	157	209	435	71	471	58
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	1781	1515	1841	1767	1841	1856	1900	1767	1841	1885	1885
Adj Flow Rate, veh/h	76	509	0	720	657	103	171	227	473	77	512	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	8	26	4	9	4	3	0	9	4	1	1
Cap, veh/h	392	1434		886	1784	276	384	1359	564	415	1209	148
Arrive On Green	0.42	0.42	0.00	0.42	0.42	0.42	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	706	3385	1284	1700	4212	653	831	3610	1497	734	3211	394
Grp Volume(v), veh/h	76	509	0	720	500	260	171	227	473	77	285	290
Grp Sat Flow(s),veh/h/ln	706	1692	1284	850	1608	1649	831	1805	1497	734	1791	1814
Q Serve(g_s), s	3.5	4.3	0.0	13.7	4.5	4.6	8.2	1.8	12.2	3.3	5.0	5.0
Cycle Q Clear(g_c), s	8.1	4.3	0.0	18.0	4.5	4.6	13.2	1.8	12.2	5.1	5.0	5.0
Prop In Lane	1.00		1.00	1.00		0.40	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	392	1434		886	1362	698	384	1359	564	415	674	683
V/C Ratio(X)	0.19	0.36		0.81	0.37	0.37	0.45	0.17	0.84	0.19	0.42	0.42
Avail Cap(c_a), veh/h	392	1434		886	1362	698	384	1359	564	415	674	683
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.2	8.3	0.0	16.1	8.4	8.4	14.7	8.8	12.1	10.5	9.8	9.8
Incr Delay (d2), s/veh	1.1	0.7	0.0	8.1	0.8	1.5	3.7	0.3	14.0	1.0	1.9	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.3	0.0	4.2	1.3	1.5	1.7	0.6	5.3	0.5	1.9	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.3	9.0	0.0	24.1	9.1	9.9	18.5	9.1	26.0	11.5	11.8	11.8
LnGrp LOS	B	A		C	A	A	B	A	C	B	B	B
Approach Vol, veh/h		585			1480			871			652	
Approach Delay, s/veh		9.4			16.6			20.1			11.7	
Approach LOS		A			B			C			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		22.5		20.0		22.5				
Change Period (Y+Rc), s		4.0		* 4.5		4.0		4.5				
Max Green Setting (Gmax), s		16.0		* 16		16.0		18.0				
Max Q Clear Time (g_c+I1), s		15.2		10.1		7.1		20.0				
Green Ext Time (p_c), s		0.4		2.0		2.7		0.0				

### Intersection Summary

HCM 6th Ctrl Delay	15.4
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary  
 2: John S Gibson Blvd & I-110 NB Ramps

10/17/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	➡		↵	↕		↵	↕		↵	↕	
Traffic Volume (veh/h)	12	26	202	110	121	108	601	542	24	588	677	204
Future Volume (veh/h)	12	26	202	110	121	108	601	542	24	588	677	204
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	996	1841	1781	1337	1352	1856	1870	1841	1752	1841	1900
Adj Flow Rate, veh/h	13	28	23	120	132	13	653	589	23	639	736	188
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	61	4	8	38	37	3	2	4	10	4	0
Cap, veh/h	225	83	68	230	385	37	922	2598	101	607	2055	525
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.75	0.75	0.75	0.75	0.75	0.75
Sat Flow, veh/h	1263	506	415	1289	2338	228	1165	3487	136	758	2758	704
Grp Volume(v), veh/h	13	0	51	120	71	74	653	300	312	639	467	457
Grp Sat Flow(s),veh/h/ln	1263	0	921	1289	1270	1296	582	1777	1846	758	1749	1714
Q Serve(g_s), s	0.8	0.0	4.3	8.0	4.4	4.5	39.3	4.6	4.6	61.4	8.2	8.2
Cycle Q Clear(g_c), s	5.3	0.0	4.3	12.4	4.4	4.5	47.5	4.6	4.6	66.0	8.2	8.2
Prop In Lane	1.00		0.45	1.00		0.18	1.00		0.07	1.00		0.41
Lane Grp Cap(c), veh/h	225	0	152	230	209	213	922	1324	1376	607	1303	1277
V/C Ratio(X)	0.06	0.00	0.34	0.52	0.34	0.35	0.71	0.23	0.23	1.05	0.36	0.36
Avail Cap(c_a), veh/h	245	0	166	251	229	234	922	1324	1376	607	1303	1277
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.1	0.0	32.7	38.2	32.7	32.8	12.2	3.5	3.5	17.7	3.9	3.9
Incr Delay (d2), s/veh	0.1	0.0	1.3	1.8	1.0	1.0	4.6	0.4	0.4	51.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.0	2.6	1.4	1.4	4.8	1.4	1.4	21.8	2.2	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.2	0.0	34.0	40.0	33.7	33.8	16.7	3.9	3.8	68.8	4.1	4.1
LnGrp LOS	D	A	C	D	C	C	B	A	A	F	A	A
Approach Vol, veh/h		64			265			1265				1563
Approach Delay, s/veh		34.3			36.6			10.5				30.5
Approach LOS		C			D			B				C
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		70.0		18.6		70.0		18.6				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		66.0		16.0		66.0		16.0				
Max Q Clear Time (g_c+I1), s		49.5		7.3		68.0		14.4				
Green Ext Time (p_c), s		10.0		0.1		0.0		0.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				23.1								
HCM 6th LOS				C								



# HCM 6th Signalized Intersection Summary

## 1: John S Gibson Blvd & S Figueroa St & W Harry Bridges Blvd

10/16/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↑↑	↗	↵↗	↑↑↗		↵	↑↑	↗	↵	↑↑	↗
Traffic Volume (veh/h)	57	427	80	303	419	76	35	80	236	32	106	110
Future Volume (veh/h)	57	427	80	303	419	76	35	80	236	32	106	110
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	1752	1515	1189	1663	1500	1826	1633	1870	1722	1441	1796	1870
Adj Flow Rate, veh/h	62	464	0	329	455	83	38	87	257	35	115	120
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	10	26	48	16	27	5	18	2	12	31	7	2
Cap, veh/h	441	1219		840	1480	264	493	1338	549	458	642	573
Arrive On Green	0.42	0.42	0.00	0.42	0.42	0.42	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	812	2878	1007	1601	3495	623	1000	3554	1459	798	1706	1522
Grp Volume(v), veh/h	62	464	0	329	353	185	38	87	257	35	115	120
Grp Sat Flow(s),veh/h/ln	812	1439	1007	801	1365	1388	1000	1777	1459	798	1706	1522
Q Serve(g_s), s	2.3	4.7	0.0	7.6	3.6	3.8	1.1	0.7	5.7	1.2	1.9	2.3
Cycle Q Clear(g_c), s	6.1	4.7	0.0	12.3	3.6	3.8	3.4	0.7	5.7	1.9	1.9	2.3
Prop In Lane	1.00		1.00	1.00		0.45	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	441	1219		840	1156	588	493	1338	549	458	642	573
V/C Ratio(X)	0.14	0.38		0.39	0.31	0.31	0.08	0.07	0.47	0.08	0.18	0.21
Avail Cap(c_a), veh/h	441	1219		840	1156	588	493	1338	549	458	642	573
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.2	8.4	0.0	12.6	8.1	8.1	10.1	8.5	10.0	9.1	8.9	9.0
Incr Delay (d2), s/veh	0.7	0.9	0.0	1.4	0.7	1.4	0.3	0.1	2.8	0.3	0.6	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.2	0.0	1.2	0.9	1.1	0.2	0.2	1.8	0.2	0.7	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.8	9.3	0.0	14.0	8.8	9.5	10.4	8.6	12.9	9.4	9.5	9.8
LnGrp LOS	B	A		B	A	A	B	A	B	A	A	A
Approach Vol, veh/h		526			867			382			270	
Approach Delay, s/veh		9.5			10.9			11.6			9.6	
Approach LOS		A			B			B			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		22.5		20.0		22.5				
Change Period (Y+Rc), s		4.0		* 4.5		4.0		4.5				
Max Green Setting (Gmax), s		16.0		* 16		16.0		18.0				
Max Q Clear Time (g_c+I1), s		7.7		8.1		4.3		14.3				
Green Ext Time (p_c), s		1.1		2.2		1.2		2.0				

### Intersection Summary

HCM 6th Ctrl Delay	10.5
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.  
 Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

# HCM 6th Signalized Intersection Summary

## 2: John S Gibson Blvd & I-110 NB Ramps

10/16/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Traffic Volume (veh/h)	23	40	100	21	80	31	738	320	30	108	380	30
Future Volume (veh/h)	23	40	100	21	80	31	738	320	30	108	380	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	1722	1129	1781	848	462	522	1856	1826	1663	1115	1737	1900
Adj Flow Rate, veh/h	25	43	109	23	87	34	802	348	33	117	413	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	12	52	8	71	97	93	3	5	16	53	11	0
Cap, veh/h	285	75	191	196	167	62	1218	1922	181	449	1858	148
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.60	0.60	0.60	0.60	0.60	0.60
Sat Flow, veh/h	1170	283	717	560	627	233	1817	3204	302	597	3096	246
Grp Volume(v), veh/h	25	0	152	23	60	61	802	187	194	117	219	227
Grp Sat Flow(s),veh/h/ln	1170	0	1000	560	439	421	908	1735	1772	597	1650	1693
Q Serve(g_s), s	1.1	0.0	7.9	2.2	6.9	7.5	21.9	2.9	2.9	6.6	3.7	3.7
Cycle Q Clear(g_c), s	8.6	0.0	7.9	10.1	6.9	7.5	25.6	2.9	2.9	9.5	3.7	3.7
Prop In Lane	1.00		0.72	1.00		0.55	1.00		0.17	1.00		0.15
Lane Grp Cap(c), veh/h	285	0	267	196	117	112	1218	1041	1063	449	990	1016
V/C Ratio(X)	0.09	0.00	0.57	0.12	0.51	0.55	0.66	0.18	0.18	0.26	0.22	0.22
Avail Cap(c_a), veh/h	285	0	267	196	117	112	1218	1041	1063	449	990	1016
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	0.0	19.0	23.4	18.7	18.9	11.5	5.4	5.4	7.5	5.5	5.5
Incr Delay (d2), s/veh	0.6	0.0	8.6	1.2	14.9	17.8	2.8	0.4	0.4	1.4	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	2.3	0.3	1.1	1.2	3.9	0.9	0.9	0.8	1.1	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.2	0.0	27.6	24.6	33.6	36.7	14.3	5.8	5.8	8.9	6.1	6.1
LnGrp LOS	C	A	C	C	C	D	B	A	A	A	A	A
Approach Vol, veh/h		177			144			1183			563	
Approach Delay, s/veh		27.0			33.5			11.5			6.6	
Approach LOS		C			C			B			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		40.0		20.0		40.0		20.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		36.0		16.0		36.0		16.0				
Max Q Clear Time (g_c+I1), s		27.6		10.6		11.5		12.1				
Green Ext Time (p_c), s		4.7		0.4		4.1		0.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				13.0								
HCM 6th LOS				B								

# HCM 6th Signalized Intersection Summary

## 3: John S Gibson Blvd & Project Driveway

10/16/2024



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	16	23	9	335	0	459	30
Future Volume (veh/h)	16	23	9	335	0	459	30
Initial Q (Qb), veh	0	0	0	0		0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00				1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00		1.00	1.00
Work Zone On Approach	No			No		No	
Adj Sat Flow, veh/h/ln	1900	1900	507	1752		1900	507
Adj Flow Rate, veh/h	17	25	10	364		499	33
Peak Hour Factor	0.92	0.92	0.92	0.92		0.92	0.92
Percent Heavy Veh, %	0	0	94	10		0	94
Cap, veh/h	35	52	7	1803		1119	74
Arrive On Green	0.05	0.05	0.01	0.54		0.33	0.33
Sat Flow, veh/h	668	982	483	3416		3532	227
Grp Volume(v), veh/h	43	0	10	364		261	271
Grp Sat Flow(s),veh/h/ln	1690	0	483	1664		1805	1859
Q Serve(g_s), s	0.5	0.0	0.3	1.2		2.5	2.5
Cycle Q Clear(g_c), s	0.5	0.0	0.3	1.2		2.5	2.5
Prop In Lane	0.40	0.58	1.00				0.12
Lane Grp Cap(c), veh/h	89	0	7	1803		587	605
V/C Ratio(X)	0.49	0.00	1.54	0.20		0.45	0.45
Avail Cap(c_a), veh/h	381	0	109	2701		1465	1509
HCM Platoon Ratio	1.00	1.00	1.00	1.00		1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00		1.00	1.00
Uniform Delay (d), s/veh	10.2	0.0	10.9	2.6		5.9	5.9
Incr Delay (d2), s/veh	4.1	0.0	357.7	0.1		0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.7	0.0		0.5	0.5
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	14.3	0.0	368.6	2.7		6.4	6.4
LnGrp LOS	B	A	F	A		A	A
Approach Vol, veh/h	43			374		532	
Approach Delay, s/veh	14.3			12.5		6.4	
Approach LOS	B			B		A	
Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		16.5		5.7	4.8	11.7	
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5	
Max Green Setting (Gmax), s		18.0		5.0	5.0	18.0	
Max Q Clear Time (g_c+I1), s		3.2		2.5	2.3	4.5	
Green Ext Time (p_c), s		2.0		0.0	0.0	2.7	

### Intersection Summary

HCM 6th Ctrl Delay	9.2
HCM 6th LOS	A

### Notes

- User approved volume balancing among the lanes for turning movement.
- User approved ignoring U-Turning movement.

# Queues

## 3: John S Gibson Blvd & Project Driveway

10/23/2024



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	42	10	364	532
v/c Ratio	0.14	0.07	0.13	0.19
Control Delay	11.0	16.0	1.8	3.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.0	16.0	1.8	3.6
Queue Length 50th (ft)	2	1	0	0
Queue Length 95th (ft)	22	11	21	65
Internal Link Dist (ft)	537		2323	3975
Turn Bay Length (ft)	150	250		
Base Capacity (vph)	301	152	2823	2777
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	0.14	0.07	0.13	0.19
<b>Intersection Summary</b>				

# HCM 6th Signalized Intersection Summary

## 1: John S Gibson Blvd & S Figueroa St & W Harry Bridges Blvd

10/16/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘↗	↑↑↗		↘	↑↑	↗	↘	↑↑	
Traffic Volume (veh/h)	114	329	70	273	458	42	39	154	269	42	149	218
Future Volume (veh/h)	114	329	70	273	458	42	39	154	269	42	149	218
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	1278	1203	1633	1352	1767	1574	1870	1633	1455	1811	1870
Adj Flow Rate, veh/h	124	358	0	297	498	46	42	167	292	46	162	237
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	42	47	18	37	9	22	2	18	30	6	2
Cap, veh/h	443	1028		900	1457	133	387	1338	521	420	648	578
Arrive On Green	0.42	0.42	0.00	0.42	0.42	0.42	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	842	2427	1020	1734	3441	314	829	3554	1384	726	1721	1535
Grp Volume(v), veh/h	124	358	0	297	354	190	42	167	292	46	162	237
Grp Sat Flow(s),veh/h/ln	842	1214	1020	867	1230	1295	829	1777	1384	726	1721	1535
Q Serve(g_s), s	5.0	4.2	0.0	5.9	4.1	4.2	1.7	1.3	7.1	1.9	2.8	4.8
Cycle Q Clear(g_c), s	9.2	4.2	0.0	10.2	4.1	4.2	6.5	1.3	7.1	3.2	2.8	4.8
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	443	1028		900	1042	549	387	1338	521	420	648	578
V/C Ratio(X)	0.28	0.35		0.33	0.34	0.35	0.11	0.12	0.56	0.11	0.25	0.41
Avail Cap(c_a), veh/h	443	1028		900	1042	549	387	1338	521	420	648	578
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.4	8.3	0.0	11.7	8.3	8.3	12.2	8.7	10.5	9.7	9.1	9.8
Incr Delay (d2), s/veh	1.6	0.9	0.0	1.0	0.9	1.7	0.6	0.2	4.3	0.5	0.9	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.0	0.0	1.0	0.9	1.1	0.3	0.4	2.3	0.3	1.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.9	9.2	0.0	12.7	9.1	10.0	12.7	8.9	14.8	10.2	10.0	11.9
LnGrp LOS	B	A		B	A	A	B	A	B	B	B	B
Approach Vol, veh/h		482			841			501			445	
Approach Delay, s/veh		10.2			10.6			12.6			11.1	
Approach LOS		B			B			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		22.5		20.0		22.5				
Change Period (Y+Rc), s		4.0		* 4.5		4.0		4.5				
Max Green Setting (Gmax), s		16.0		* 16		16.0		18.0				
Max Q Clear Time (g_c+I1), s		9.1		11.2		6.8		12.2				
Green Ext Time (p_c), s		1.4		1.4		1.9		2.7				

### Intersection Summary

HCM 6th Ctrl Delay	11.0
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.  
 Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

# HCM 6th Signalized Intersection Summary

## 2: John S Gibson Blvd & I-110 NB Ramps

10/16/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	➡		↵	↕		↵	↕		↵	↕	
Traffic Volume (veh/h)	27	13	203	29	133	65	649	359	18	85	309	31
Future Volume (veh/h)	27	13	203	29	133	65	649	359	18	85	309	31
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	1737	996	1767	1396	551	611	1826	1856	1663	655	1811	1826
Adj Flow Rate, veh/h	29	14	221	32	145	71	705	390	20	92	336	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	11	61	9	34	91	87	5	3	16	84	6	5
Cap, veh/h	185	14	214	120	185	86	1298	2047	105	307	1894	190
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.60	0.60	0.60	0.60	0.60	0.60
Sat Flow, veh/h	1082	51	801	855	694	323	1917	3412	174	342	3157	317
Grp Volume(v), veh/h	29	0	235	32	108	108	705	201	209	92	182	188
Grp Sat Flow(s),veh/h/ln	1082	0	852	855	524	493	959	1763	1824	342	1721	1754
Q Serve(g_s), s	1.6	0.0	16.0	0.0	11.4	12.4	15.6	3.1	3.1	10.0	2.8	2.9
Cycle Q Clear(g_c), s	13.9	0.0	16.0	16.0	11.4	12.4	18.5	3.1	3.1	13.1	2.8	2.9
Prop In Lane	1.00		0.94	1.00		0.66	1.00		0.10	1.00		0.18
Lane Grp Cap(c), veh/h	185	0	227	120	140	132	1298	1058	1094	307	1032	1052
V/C Ratio(X)	0.16	0.00	1.03	0.27	0.77	0.82	0.54	0.19	0.19	0.30	0.18	0.18
Avail Cap(c_a), veh/h	185	0	227	120	140	132	1298	1058	1094	307	1032	1052
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.2	0.0	22.0	30.0	20.3	20.7	9.5	5.4	5.4	8.4	5.4	5.4
Incr Delay (d2), s/veh	1.8	0.0	69.0	5.4	32.9	41.8	1.6	0.4	0.4	2.5	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	7.2	0.6	2.5	2.8	2.8	1.0	1.0	0.8	0.9	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.0	0.0	91.0	35.4	53.2	62.5	11.2	5.8	5.8	10.9	5.7	5.7
LnGrp LOS	C	A	F	D	D	E	B	A	A	B	A	A
Approach Vol, veh/h		264			248			1115			462	
Approach Delay, s/veh		84.2			55.0			9.2			6.8	
Approach LOS		F			D			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		40.0		20.0		40.0		20.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		36.0		16.0		36.0		16.0				
Max Q Clear Time (g_c+I1), s		20.5		18.0		15.1		18.0				
Green Ext Time (p_c), s		6.3		0.0		4.1		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				23.6								
HCM 6th LOS				C								



# HCM 6th Signalized Intersection Summary

## 3: John S Gibson Blvd & Project Driveway

10/16/2024



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	26	17	22	436	0	471	21
Future Volume (veh/h)	26	17	22	436	0	471	21
Initial Q (Qb), veh	0	0	0	0		0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00				1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00		1.00	1.00
Work Zone On Approach	No			No		No	
Adj Sat Flow, veh/h/ln	522	522	522	1707		1633	1900
Adj Flow Rate, veh/h	28	18	24	474		512	23
Peak Hour Factor	0.92	0.92	0.92	0.92		0.92	0.92
Percent Heavy Veh, %	93	93	93	13		18	0
Cap, veh/h	16	10	15	1813		1016	46
Arrive On Green	0.06	0.06	0.03	0.56		0.34	0.34
Sat Flow, veh/h	283	182	497	3329		3106	136
Grp Volume(v), veh/h	47	0	24	474		262	273
Grp Sat Flow(s),veh/h/ln	475	0	497	1622		1552	1609
Q Serve(g_s), s	1.3	0.0	0.7	1.8		3.2	3.2
Cycle Q Clear(g_c), s	1.3	0.0	0.7	1.8		3.2	3.2
Prop In Lane	0.60	0.38	1.00				0.08
Lane Grp Cap(c), veh/h	27	0	15	1813		521	540
V/C Ratio(X)	1.76	0.00	1.56	0.26		0.50	0.50
Avail Cap(c_a), veh/h	102	0	106	2496		1194	1238
HCM Platoon Ratio	1.00	1.00	1.00	1.00		1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00		1.00	1.00
Uniform Delay (d), s/veh	11.0	0.0	11.3	2.7		6.2	6.2
Incr Delay (d2), s/veh	372.7	0.0	311.5	0.1		0.8	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	1.4	0.0		0.6	0.6
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	383.8	0.0	322.9	2.7		7.0	6.9
LnGrp LOS	F	A	F	A		A	A
Approach Vol, veh/h	47			498		535	
Approach Delay, s/veh	383.8			18.2		7.0	
Approach LOS	F			B		A	
Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		17.6		5.8	5.2	12.4	
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5	
Max Green Setting (Gmax), s		18.0		5.0	5.0	18.0	
Max Q Clear Time (g_c+I1), s		3.8		3.3	2.7	5.2	
Green Ext Time (p_c), s		2.7		0.0	0.0	2.7	

### Intersection Summary

HCM 6th Ctrl Delay	28.5
HCM 6th LOS	C

### Notes

- User approved volume balancing among the lanes for turning movement.
- User approved ignoring U-Turning movement.

# Queues

## 3: John S Gibson Blvd & Project Driveway

10/24/2024



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	46	24	474	535
v/c Ratio	0.28	0.16	0.17	0.22
Control Delay	16.5	17.5	1.9	3.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.5	17.5	1.9	3.7
Queue Length 50th (ft)	3	3	0	0
Queue Length 95th (ft)	#33	21	27	67
Internal Link Dist (ft)	537		2323	3975
Turn Bay Length (ft)	150	250		
Base Capacity (vph)	164	154	2736	2487
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	0.28	0.16	0.17	0.22

### Intersection Summary

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

# HCM 6th Signalized Intersection Summary

## 1: John S Gibson Blvd & S Figueroa St & W Harry Bridges Blvd

10/16/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↑↑	↗	↵↗	↑↑↗		↵	↑↑	↗	↵	↑↑	↗
Traffic Volume (veh/h)	158	444	68	399	508	66	33	155	361	62	199	53
Future Volume (veh/h)	158	444	68	399	508	66	33	155	361	62	199	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1722	1455	1767	1648	1856	1678	1900	1722	1604	1870	1885
Adj Flow Rate, veh/h	172	483	0	434	552	72	36	168	392	67	216	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	12	30	9	17	3	15	0	12	20	2	1
Cap, veh/h	436	1386		880	1709	220	489	1359	549	421	1049	275
Arrive On Green	0.42	0.42	0.00	0.42	0.42	0.42	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	807	3272	1233	1672	4035	519	991	3610	1459	728	2785	731
Grp Volume(v), veh/h	172	483	0	434	408	216	36	168	392	67	136	138
Grp Sat Flow(s),veh/h/ln	807	1636	1233	836	1500	1555	991	1805	1459	728	1777	1739
Q Serve(g_s), s	7.7	4.2	0.0	10.1	3.9	3.9	1.1	1.3	9.7	2.8	2.2	2.3
Cycle Q Clear(g_c), s	11.6	4.2	0.0	14.3	3.9	3.9	3.4	1.3	9.7	4.1	2.2	2.3
Prop In Lane	1.00		1.00	1.00		0.33	1.00		1.00	1.00		0.42
Lane Grp Cap(c), veh/h	436	1386		880	1270	658	489	1359	549	421	669	655
V/C Ratio(X)	0.39	0.35		0.49	0.32	0.33	0.07	0.12	0.71	0.16	0.20	0.21
Avail Cap(c_a), veh/h	436	1386		880	1270	658	489	1359	549	421	669	655
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.1	8.3	0.0	13.1	8.2	8.2	10.1	8.7	11.3	10.0	8.9	9.0
Incr Delay (d2), s/veh	2.7	0.7	0.0	2.0	0.7	1.3	0.3	0.2	7.7	0.8	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.2	0.0	1.7	1.0	1.2	0.2	0.4	3.6	0.4	0.8	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.8	9.0	0.0	15.1	8.8	9.5	10.4	8.9	19.0	10.8	9.6	9.7
LnGrp LOS	B	A		B	A	A	B	A	B	B	A	A
Approach Vol, veh/h		655			1058			596			341	
Approach Delay, s/veh		10.5			11.5			15.6			9.9	
Approach LOS		B			B			B			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		22.5		20.0		22.5				
Change Period (Y+Rc), s		4.0		* 4.5		4.0		4.5				
Max Green Setting (Gmax), s		16.0		* 16		16.0		18.0				
Max Q Clear Time (g_c+I1), s		11.7		13.6		6.1		16.3				
Green Ext Time (p_c), s		1.1		1.0		1.4		1.1				

### Intersection Summary

HCM 6th Ctrl Delay	12.0
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

# HCM 6th Signalized Intersection Summary

## 2: John S Gibson Blvd & I-110 NB Ramps

10/16/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↕		↖	↕		↖	↕	
Traffic Volume (veh/h)	15	8	125	34	72	44	556	419	12	123	514	25
Future Volume (veh/h)	15	8	125	34	72	44	556	419	12	123	514	25
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	1900	1530	1811	1292	774	700	1870	1870	1781	1707	1811	1900
Adj Flow Rate, veh/h	16	9	136	37	78	48	604	455	13	134	559	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	25	6	41	76	81	2	2	8	13	6	0
Cap, veh/h	366	22	327	271	241	137	1076	2117	60	577	2005	97
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.60	0.60	0.60	0.60	0.60	0.60
Sat Flow, veh/h	1285	81	1227	859	902	514	1609	3528	101	844	3341	161
Grp Volume(v), veh/h	16	0	145	37	62	64	604	229	239	134	287	299
Grp Sat Flow(s),veh/h/ln	1285	0	1309	859	735	681	805	1777	1852	844	1721	1782
Q Serve(g_s), s	0.6	0.0	5.5	2.2	4.1	4.5	17.3	3.5	3.6	5.2	4.8	4.8
Cycle Q Clear(g_c), s	5.1	0.0	5.5	7.7	4.1	4.5	22.2	3.5	3.6	8.8	4.8	4.8
Prop In Lane	1.00		0.94	1.00		0.75	1.00		0.05	1.00		0.09
Lane Grp Cap(c), veh/h	366	0	349	271	196	182	1076	1066	1111	577	1032	1069
V/C Ratio(X)	0.04	0.00	0.42	0.14	0.32	0.35	0.56	0.21	0.22	0.23	0.28	0.28
Avail Cap(c_a), veh/h	366	0	349	271	196	182	1076	1066	1111	577	1032	1069
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.9	0.0	18.1	21.3	17.6	17.8	11.1	5.5	5.5	7.5	5.8	5.8
Incr Delay (d2), s/veh	0.2	0.0	3.6	1.1	4.2	5.2	2.1	0.5	0.4	0.9	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.9	0.5	0.9	0.9	2.8	1.1	1.2	0.9	1.5	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.1	0.0	21.8	22.4	21.9	23.0	13.2	6.0	6.0	8.5	6.4	6.4
LnGrp LOS	C	A	C	C	C	C	B	A	A	A	A	A
Approach Vol, veh/h		161			163			1072			720	
Approach Delay, s/veh		21.6			22.4			10.0			6.8	
Approach LOS		C			C			B			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		40.0		20.0		40.0		20.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		36.0		16.0		36.0		16.0				
Max Q Clear Time (g_c+I1), s		24.2		7.5		10.8		9.7				
Green Ext Time (p_c), s		5.7		0.5		4.7		0.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				10.8								
HCM 6th LOS				B								

# HCM 6th Signalized Intersection Summary

## 3: John S Gibson Blvd & Project Driveway

10/16/2024



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	9	10	8	540	0	655	11
Future Volume (veh/h)	9	10	8	540	0	655	11
Initial Q (Qb), veh	0	0	0	0		0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00				1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00		1.00	1.00
Work Zone On Approach	No			No		No	
Adj Sat Flow, veh/h/ln	581	581	581	1767		1767	1900
Adj Flow Rate, veh/h	10	11	9	587		712	12
Peak Hour Factor	0.92	0.92	0.92	0.92		0.92	0.92
Percent Heavy Veh, %	89	89	89	9		9	0
Cap, veh/h	7	7	7	2000		1338	23
Arrive On Green	0.03	0.03	0.01	0.60		0.40	0.40
Sat Flow, veh/h	237	261	553	3445		3466	57
Grp Volume(v), veh/h	22	0	9	587		354	370
Grp Sat Flow(s),veh/h/ln	522	0	553	1678		1678	1756
Q Serve(g_s), s	0.7	0.0	0.3	2.1		3.9	3.9
Cycle Q Clear(g_c), s	0.7	0.0	0.3	2.1		3.9	3.9
Prop In Lane	0.45	0.50	1.00				0.03
Lane Grp Cap(c), veh/h	15	0	7	2000		665	696
V/C Ratio(X)	1.48	0.00	1.34	0.29		0.53	0.53
Avail Cap(c_a), veh/h	109	0	115	2522		1261	1319
HCM Platoon Ratio	1.00	1.00	1.00	1.00		1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00		1.00	1.00
Uniform Delay (d), s/veh	11.6	0.0	11.8	2.4		5.5	5.5
Incr Delay (d2), s/veh	279.6	0.0	278.6	0.1		0.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.5	0.0		0.6	0.6
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	291.2	0.0	290.5	2.5		6.2	6.2
LnGrp LOS	F	A	F	A		A	A
Approach Vol, veh/h	22			596		724	
Approach Delay, s/veh	291.2			6.8		6.2	
Approach LOS	F			A		A	
Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		18.8		5.2	4.8	14.0	
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5	
Max Green Setting (Gmax), s		18.0		5.0	5.0	18.0	
Max Q Clear Time (g_c+I1), s		4.1		2.7	2.3	5.9	
Green Ext Time (p_c), s		3.4		0.0	0.0	3.6	

### Intersection Summary

HCM 6th Ctrl Delay	11.1
HCM 6th LOS	B

### Notes

- User approved volume balancing among the lanes for turning movement.
- User approved ignoring U-Turning movement.

# Queues

## 3: John S Gibson Blvd & Project Driveway

10/24/2024



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	21	9	587	724
v/c Ratio	0.13	0.06	0.19	0.24
Control Delay	13.9	16.2	1.0	2.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	13.9	16.2	1.0	2.7
Queue Length 50th (ft)	1	1	0	0
Queue Length 95th (ft)	18	12	33	91
Internal Link Dist (ft)	537		2323	3975
Turn Bay Length (ft)	150	250		
Base Capacity (vph)	157	155	3110	2972
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	0.06	0.19	0.24

### Intersection Summary



# HCM 6th Signalized Intersection Summary

## 1: John S Gibson Blvd & S Figueroa St & W Harry Bridges Blvd

10/17/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷	↷	↶↷	↷↶↷		↶	↷	↷	↶	↷	↷
Traffic Volume (veh/h)	31	394	199	399	452	86	153	110	359	112	179	120
Future Volume (veh/h)	31	394	199	399	452	86	153	110	359	112	179	120
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	1811	1559	863	1604	1530	1841	1470	1870	1604	1559	1618	1885
Adj Flow Rate, veh/h	34	428	0	434	491	93	166	120	390	122	195	130
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	23	70	20	25	4	29	2	20	23	19	1
Cap, veh/h	434	1255		859	1499	278	415	1338	512	433	679	431
Arrive On Green	0.42	0.42	0.00	0.42	0.42	0.42	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	805	2962	731	1596	3539	656	829	3554	1359	742	1805	1145
Grp Volume(v), veh/h	34	428	0	434	384	200	166	120	390	122	165	160
Grp Sat Flow(s),veh/h/ln	805	1481	731	798	1392	1411	829	1777	1359	742	1537	1412
Q Serve(g_s), s	1.3	4.1	0.0	10.7	3.9	4.0	7.5	0.9	10.7	5.4	3.2	3.4
Cycle Q Clear(g_c), s	5.3	4.1	0.0	14.8	3.9	4.0	10.9	0.9	10.7	6.3	3.2	3.4
Prop In Lane	1.00		1.00	1.00		0.46	1.00		1.00	1.00		0.81
Lane Grp Cap(c), veh/h	434	1255		859	1179	598	415	1338	512	433	579	532
V/C Ratio(X)	0.08	0.34		0.50	0.33	0.33	0.40	0.09	0.76	0.28	0.28	0.30
Avail Cap(c_a), veh/h	434	1255		859	1179	598	415	1338	512	433	579	532
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.0	8.3	0.0	13.3	8.2	8.2	13.1	8.6	11.6	10.6	9.3	9.3
Incr Delay (d2), s/veh	0.4	0.7	0.0	2.1	0.7	1.5	2.9	0.1	10.3	1.6	1.2	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(50%),veh/ln	0.2	1.1	0.0	1.8	1.0	1.2	1.4	0.3	3.9	0.9	1.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.4	9.0	0.0	15.4	8.9	9.7	16.0	8.7	21.9	12.2	10.5	10.8
LnGrp LOS	B	A		B	A	A	B	A	C	B	B	B
Approach Vol, veh/h		462			1018			676			447	
Approach Delay, s/veh		9.1			11.8			18.1			11.1	
Approach LOS		A			B			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		22.5		20.0		22.5				
Change Period (Y+Rc), s		4.0		* 4.5		4.0		4.5				
Max Green Setting (Gmax), s		16.0		* 16		16.0		18.0				
Max Q Clear Time (g_c+I1), s		12.9		7.3		8.3		16.8				
Green Ext Time (p_c), s		1.1		2.0		1.7		0.8				

### Intersection Summary

HCM 6th Ctrl Delay	12.8
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.  
 Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary  
 2: John S Gibson Blvd & I-110 NB Ramps

10/17/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↕		↖	↕		↖	↕	
Traffic Volume (veh/h)	25	64	57	54	133	119	634	427	53	342	394	46
Future Volume (veh/h)	25	64	57	54	133	119	634	427	53	342	394	46
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	1900	981	1381	1411	655	685	1841	1841	1485	996	1781	1900
Adj Flow Rate, veh/h	27	70	62	59	145	129	689	464	58	372	428	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	62	35	33	84	82	4	4	28	61	8	0
Cap, veh/h	156	136	120	248	183	151	1149	1913	238	350	1867	217
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.61	0.61	0.61	0.61	0.61	0.61
Sat Flow, veh/h	1123	480	425	949	647	534	1750	3130	389	469	3055	355
Grp Volume(v), veh/h	27	0	132	59	139	135	689	258	264	372	236	242
Grp Sat Flow(s),veh/h/ln	1123	0	905	949	622	559	875	1749	1771	469	1692	1718
Q Serve(g_s), s	1.8	0.0	9.2	4.2	15.5	17.2	22.1	5.1	5.1	40.9	4.7	4.8
Cycle Q Clear(g_c), s	19.0	0.0	9.2	13.4	15.5	17.2	26.9	5.1	5.1	46.0	4.7	4.8
Prop In Lane	1.00		0.47	1.00		0.96	1.00		0.22	1.00		0.21
Lane Grp Cap(c), veh/h	156	0	256	248	176	158	1149	1069	1082	350	1034	1050
V/C Ratio(X)	0.17	0.00	0.52	0.24	0.79	0.85	0.60	0.24	0.24	1.06	0.23	0.23
Avail Cap(c_a), veh/h	227	0	312	307	215	193	1149	1069	1082	350	1034	1050
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.5	0.0	22.7	28.3	24.9	25.5	12.7	6.7	6.7	22.8	6.6	6.6
Incr Delay (d2), s/veh	0.5	0.0	1.6	0.5	14.8	25.5	2.3	0.5	0.5	65.6	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	2.0	1.0	2.9	3.3	4.1	1.7	1.8	12.7	1.5	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.0	0.0	24.3	28.8	39.8	51.0	15.0	7.2	7.2	88.4	6.7	6.7
LnGrp LOS	D	A	C	C	D	D	B	A	A	F	A	A
Approach Vol, veh/h		159			333			1211				850
Approach Delay, s/veh		26.1			42.4			11.7				42.5
Approach LOS		C			D			B				D
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		50.0		25.3		50.0		25.3				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		46.0		26.0		46.0		26.0				
Max Q Clear Time (g_c+I1), s		28.9		21.0		48.0		19.2				
Green Ext Time (p_c), s		7.7		0.3		0.0		1.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				26.8								
HCM 6th LOS				C								

# HCM 6th Signalized Intersection Summary

## 3: John S Gibson Blvd & Project Driveway

10/17/2024



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	28	43	16	594	0	722	55
Future Volume (veh/h)	28	43	16	594	0	722	55
Initial Q (Qb), veh	0	0	0	0		0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00				1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00		1.00	1.00
Work Zone On Approach	No			No		No	
Adj Sat Flow, veh/h/ln	462	462	462	1618		1455	1900
Adj Flow Rate, veh/h	30	47	17	646		785	60
Peak Hour Factor	0.92	0.92	0.92	0.92		0.92	0.92
Percent Heavy Veh, %	97	97	97	19		30	0
Cap, veh/h	13	20	10	1883		1136	87
Arrive On Green	0.08	0.08	0.02	0.61		0.44	0.44
Sat Flow, veh/h	158	247	440	3156		2676	199
Grp Volume(v), veh/h	78	0	17	646		417	428
Grp Sat Flow(s),veh/h/ln	410	0	440	1537		1383	1420
Q Serve(g_s), s	2.3	0.0	0.6	3.0		7.1	7.1
Cycle Q Clear(g_c), s	2.3	0.0	0.6	3.0		7.1	7.1
Prop In Lane	0.38	0.60	1.00				0.14
Lane Grp Cap(c), veh/h	33	0	10	1883		603	620
V/C Ratio(X)	2.37	0.00	1.75	0.34		0.69	0.69
Avail Cap(c_a), veh/h	70	0	75	1891		850	873
HCM Platoon Ratio	1.00	1.00	1.00	1.00		1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00		1.00	1.00
Uniform Delay (d), s/veh	13.5	0.0	14.3	2.8		6.7	6.7
Incr Delay (d2), s/veh	700.2	0.0	413.8	0.1		1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	1.2	0.1		1.2	1.3
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	713.6	0.0	428.1	2.9		8.1	8.0
LnGrp LOS	F	A	F	A		A	A
Approach Vol, veh/h	78			663		845	
Approach Delay, s/veh	713.6			13.8		8.1	
Approach LOS	F			B		A	
Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		22.4		6.8	5.1	17.3	
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5	
Max Green Setting (Gmax), s		18.0		5.0	5.0	18.0	
Max Q Clear Time (g_c+I1), s		5.0		4.3	2.6	9.1	
Green Ext Time (p_c), s		3.7		0.0	0.0	3.6	
<b>Intersection Summary</b>							
HCM 6th Ctrl Delay			45.2				
HCM 6th LOS			D				
<b>Notes</b>							
User approved volume balancing among the lanes for turning movement.							
User approved ignoring U-Turning movement.							

# HCM 6th Signalized Intersection Summary

## 1: John S Gibson Blvd & S Figueroa St & W Harry Bridges Blvd

10/17/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘↗	↑↑↑		↘	↑↑	↗	↘	↑↑	
Traffic Volume (veh/h)	53	324	160	350	475	83	122	164	343	51	329	168
Future Volume (veh/h)	53	324	160	350	475	83	122	164	343	51	329	168
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	1737	1218	833	1530	1292	1856	1604	1870	1544	1411	1722	1856
Adj Flow Rate, veh/h	58	352	0	380	516	90	133	178	373	55	358	183
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	11	46	72	25	41	3	20	2	24	33	12	3
Cap, veh/h	398	980		861	1284	220	352	1338	493	391	794	399
Arrive On Green	0.42	0.42	0.00	0.42	0.42	0.42	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	756	2315	706	1633	3032	519	741	3554	1309	646	2108	1059
Grp Volume(v), veh/h	58	352	0	380	398	208	133	178	373	55	276	265
Grp Sat Flow(s),veh/h/ln	756	1157	706	816	1176	1199	741	1777	1309	646	1636	1531
Q Serve(g_s), s	2.5	4.4	0.0	8.8	5.0	5.1	7.0	1.4	10.6	2.6	5.4	5.5
Cycle Q Clear(g_c), s	7.6	4.4	0.0	13.2	5.0	5.1	12.5	1.4	10.6	4.0	5.4	5.5
Prop In Lane	1.00		1.00	1.00		0.43	1.00		1.00	1.00		0.69
Lane Grp Cap(c), veh/h	398	980		861	996	508	352	1338	493	391	616	577
V/C Ratio(X)	0.15	0.36		0.44	0.40	0.41	0.38	0.13	0.76	0.14	0.45	0.46
Avail Cap(c_a), veh/h	398	980		861	996	508	352	1338	493	391	616	577
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.2	8.3	0.0	12.8	8.5	8.5	14.7	8.7	11.6	10.0	9.9	10.0
Incr Delay (d2), s/veh	0.8	1.0	0.0	1.6	1.2	2.4	3.1	0.2	10.4	0.8	2.4	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.0	0.0	1.5	1.1	1.3	1.3	0.5	3.8	0.4	1.9	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.0	9.4	0.0	14.4	9.7	11.0	17.8	8.9	22.0	10.8	12.3	12.6
LnGrp LOS	B	A		B	A	B	B	A	C	B	B	B
Approach Vol, veh/h		410			986			684			596	
Approach Delay, s/veh		9.7			11.8			17.7			12.3	
Approach LOS		A			B			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		22.5		20.0		22.5				
Change Period (Y+Rc), s		4.0		* 4.5		4.0		4.5				
Max Green Setting (Gmax), s		16.0		* 16		16.0		18.0				
Max Q Clear Time (g_c+I1), s		14.5		9.6		7.5		15.2				
Green Ext Time (p_c), s		0.6		1.4		2.5		1.7				

### Intersection Summary

HCM 6th Ctrl Delay	13.1
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.  
 Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary  
 2: John S Gibson Blvd & I-110 NB Ramps

10/17/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	69	142	65	196	102	507	476	82	407	408	82
Future Volume (veh/h)	41	69	142	65	196	102	507	476	82	407	408	82
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	1737	625	1618	1085	566	611	1796	1856	892	1129	1826	1885
Adj Flow Rate, veh/h	45	75	36	71	213	15	551	517	75	442	443	72
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	11	86	19	55	90	87	7	3	68	52	5	1
Cap, veh/h	205	117	56	190	298	21	1070	1865	270	355	1804	291
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.60	0.60	0.60	0.60	0.60	0.60
Sat Flow, veh/h	1070	399	192	744	1020	71	1650	3091	447	498	2990	483
Grp Volume(v), veh/h	45	0	111	71	112	116	551	294	298	442	256	259
Grp Sat Flow(s),veh/h/ln	1070	0	591	744	538	553	825	1763	1775	498	1735	1739
Q Serve(g_s), s	3.0	0.0	12.5	7.0	14.1	14.4	17.8	6.1	6.1	39.9	5.2	5.3
Cycle Q Clear(g_c), s	17.4	0.0	12.5	19.5	14.1	14.4	23.1	6.1	6.1	46.0	5.2	5.3
Prop In Lane	1.00		0.32	1.00		0.13	1.00		0.25	1.00		0.28
Lane Grp Cap(c), veh/h	205	0	172	190	157	161	1070	1063	1071	355	1046	1049
V/C Ratio(X)	0.22	0.00	0.64	0.37	0.71	0.72	0.52	0.28	0.28	1.24	0.24	0.25
Avail Cap(c_a), veh/h	258	0	202	226	183	189	1070	1063	1071	355	1046	1049
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.0	0.0	23.5	32.0	24.1	24.2	12.4	7.2	7.2	23.5	7.0	7.1
Incr Delay (d2), s/veh	0.5	0.0	5.4	1.2	10.1	10.6	1.8	0.6	0.6	131.8	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	1.9	1.3	2.1	2.3	3.2	2.1	2.2	19.5	1.7	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.5	0.0	28.9	33.3	34.2	34.8	14.2	7.8	7.9	155.3	7.2	7.2
LnGrp LOS	C	A	C	C	C	C	B	A	A	F	A	A
Approach Vol, veh/h		156			299			1143				957
Approach Delay, s/veh		30.0			34.2			10.9				75.6
Approach LOS		C			C			B				E
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		50.0		26.2		50.0		26.2				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		46.0		26.0		46.0		26.0				
Max Q Clear Time (g_c+I1), s		25.1		19.4		48.0		21.5				
Green Ext Time (p_c), s		8.2		0.4		0.0		0.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				39.0								
HCM 6th LOS				D								

# HCM 6th Signalized Intersection Summary

## 3: John S Gibson Blvd & Project Driveway

10/17/2024



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	48	30	40	581	0	801	38
Future Volume (veh/h)	48	30	40	581	0	801	38
Initial Q (Qb), veh	0	0	0	0		0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00				1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00		1.00	1.00
Work Zone On Approach	No			No		No	
Adj Sat Flow, veh/h/ln	477	477	477	1648		1500	1900
Adj Flow Rate, veh/h	52	33	43	632		871	41
Peak Hour Factor	0.92	0.92	0.92	0.92		0.92	0.92
Percent Heavy Veh, %	96	96	96	17		27	0
Cap, veh/h	22	14	23	1972		1210	57
Arrive On Green	0.08	0.08	0.05	0.63		0.44	0.44
Sat Flow, veh/h	263	167	455	3214		2846	130
Grp Volume(v), veh/h	86	0	43	632		448	464
Grp Sat Flow(s),veh/h/ln	434	0	455	1566		1425	1476
Q Serve(g_s), s	2.6	0.0	1.6	2.9		8.1	8.1
Cycle Q Clear(g_c), s	2.6	0.0	1.6	2.9		8.1	8.1
Prop In Lane	0.60	0.38	1.00				0.09
Lane Grp Cap(c), veh/h	36	0	23	1972		622	645
V/C Ratio(X)	2.36	0.00	1.90	0.32		0.72	0.72
Avail Cap(c_a), veh/h	69	0	72	1972		816	845
HCM Platoon Ratio	1.00	1.00	1.00	1.00		1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00		1.00	1.00
Uniform Delay (d), s/veh	14.4	0.0	14.9	2.7		7.3	7.3
Incr Delay (d2), s/veh	687.4	0.0	459.0	0.1		2.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	0.0	3.0	0.2		1.7	1.7
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	701.8	0.0	473.9	2.8		9.4	9.3
LnGrp LOS	F	A	F	A		A	A
Approach Vol, veh/h	86			675		912	
Approach Delay, s/veh	701.8			32.8		9.4	
Approach LOS	F			C		A	
Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		24.3		7.1	6.1	18.2	
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5	
Max Green Setting (Gmax), s		18.0		5.0	5.0	18.0	
Max Q Clear Time (g_c+I1), s		4.9		4.6	3.6	10.1	
Green Ext Time (p_c), s		3.6		0.0	0.0	3.6	

### Intersection Summary

HCM 6th Ctrl Delay	54.4
HCM 6th LOS	D

### Notes

- User approved volume balancing among the lanes for turning movement.
- User approved ignoring U-Turning movement.

# HCM 6th Signalized Intersection Summary

## 1: John S Gibson Blvd & S Figueroa St & W Harry Bridges Blvd

10/17/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷	↷	↶↷	↷		↶	↷	↷	↶	↷	↷
Traffic Volume (veh/h)	70	468	134	666	604	95	170	209	438	71	471	58
Future Volume (veh/h)	70	468	134	666	604	95	170	209	438	71	471	58
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	1781	1515	1841	1767	1841	1856	1900	1767	1841	1885	1885
Adj Flow Rate, veh/h	76	509	0	724	657	103	185	227	476	77	512	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	8	26	4	9	4	3	0	9	4	1	1
Cap, veh/h	392	1434		886	1784	276	384	1359	564	414	1209	148
Arrive On Green	0.42	0.42	0.00	0.42	0.42	0.42	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	706	3385	1284	1700	4212	653	831	3610	1497	732	3211	394
Grp Volume(v), veh/h	76	509	0	724	500	260	185	227	476	77	285	290
Grp Sat Flow(s),veh/h/ln	706	1692	1284	850	1608	1649	831	1805	1497	732	1791	1814
Q Serve(g_s), s	3.5	4.3	0.0	13.7	4.5	4.6	9.0	1.8	12.4	3.3	5.0	5.0
Cycle Q Clear(g_c), s	8.1	4.3	0.0	18.0	4.5	4.6	14.1	1.8	12.4	5.1	5.0	5.0
Prop In Lane	1.00		1.00	1.00		0.40	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	392	1434		886	1362	698	384	1359	564	414	674	683
V/C Ratio(X)	0.19	0.36		0.82	0.37	0.37	0.48	0.17	0.84	0.19	0.42	0.42
Avail Cap(c_a), veh/h	392	1434		886	1362	698	384	1359	564	414	674	683
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.2	8.3	0.0	16.1	8.4	8.4	15.1	8.8	12.1	10.5	9.8	9.8
Incr Delay (d2), s/veh	1.1	0.7	0.0	8.3	0.8	1.5	4.3	0.3	14.4	1.0	1.9	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.3	0.0	4.2	1.3	1.5	1.9	0.6	5.4	0.5	1.9	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.3	9.0	0.0	24.4	9.1	9.9	19.4	9.1	26.5	11.5	11.8	11.8
LnGrp LOS	B	A		C	A	A	B	A	C	B	B	B
Approach Vol, veh/h		585			1484			888			652	
Approach Delay, s/veh		9.4			16.7			20.6			11.7	
Approach LOS		A			B			C			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		22.5		20.0		22.5				
Change Period (Y+Rc), s		4.0		* 4.5		4.0		4.5				
Max Green Setting (Gmax), s		16.0		* 16		16.0		18.0				
Max Q Clear Time (g_c+I1), s		16.1		10.1		7.1		20.0				
Green Ext Time (p_c), s		0.0		2.0		2.7		0.0				

### Intersection Summary

HCM 6th Ctrl Delay	15.6
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



# HCM 6th Signalized Intersection Summary

## 2: John S Gibson Blvd & I-110 NB Ramps

10/17/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	➡		↵	↕		↵	↕		↵	↕	
Traffic Volume (veh/h)	22	26	202	110	121	108	601	545	24	588	680	217
Future Volume (veh/h)	22	26	202	110	121	108	601	545	24	588	680	217
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	1900	996	1841	1781	1337	1352	1856	1870	1841	1752	1841	1900
Adj Flow Rate, veh/h	24	28	46	120	132	17	653	592	23	639	739	203
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	61	4	8	38	37	3	2	4	10	4	0
Cap, veh/h	302	70	115	276	467	59	847	2359	92	567	1833	504
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.68	0.68	0.68	0.68	0.68	0.68
Sat Flow, veh/h	1258	339	557	1263	2268	287	1145	3487	135	756	2711	745
Grp Volume(v), veh/h	24	0	74	120	73	76	653	301	314	639	477	465
Grp Sat Flow(s),veh/h/ln	1258	0	896	1263	1270	1285	573	1777	1846	756	1749	1707
Q Serve(g_s), s	1.1	0.0	4.9	6.2	3.3	3.4	37.7	4.5	4.5	41.5	8.3	8.3
Cycle Q Clear(g_c), s	4.5	0.0	4.9	11.0	3.3	3.4	46.0	4.5	4.5	46.0	8.3	8.3
Prop In Lane	1.00		0.62	1.00		0.22	1.00		0.07	1.00		0.44
Lane Grp Cap(c), veh/h	302	0	185	276	262	265	847	1202	1248	567	1183	1154
V/C Ratio(X)	0.08	0.00	0.40	0.44	0.28	0.29	0.77	0.25	0.25	1.13	0.40	0.40
Avail Cap(c_a), veh/h	524	0	342	498	485	491	847	1202	1248	567	1183	1154
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	0.0	23.4	28.1	22.7	22.8	15.6	4.3	4.3	17.1	4.9	4.9
Incr Delay (d2), s/veh	0.1	0.0	1.4	1.1	0.6	0.6	6.7	0.5	0.5	77.7	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.0	1.9	1.0	1.0	5.0	1.3	1.4	21.3	2.2	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.8	0.0	24.8	29.2	23.3	23.4	22.3	4.8	4.8	94.8	5.1	5.1
LnGrp LOS	C	A	C	C	C	C	C	A	A	F	A	A
Approach Vol, veh/h		98			269			1268			1581	
Approach Delay, s/veh		24.8			26.0			13.8			41.4	
Approach LOS		C			C			B			D	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		50.0		18.0		50.0		18.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		46.0		26.0		46.0		26.0				
Max Q Clear Time (g_c+I1), s		48.0		6.9		48.0		13.0				
Green Ext Time (p_c), s		0.0		0.4		0.0		1.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			28.7									
HCM 6th LOS			C									

# HCM 6th Signalized Intersection Summary

## 3: John S Gibson Blvd & Project Driveway

10/17/2024



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	16	16	13	801	0	1252	19
Future Volume (veh/h)	16	16	13	801	0	1252	19
Initial Q (Qb), veh	0	0	0	0		0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00				1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00		1.00	1.00
Work Zone On Approach	No			No		No	
Adj Sat Flow, veh/h/ln	522	522	522	1826		1826	1900
Adj Flow Rate, veh/h	17	17	14	871		1361	21
Peak Hour Factor	0.92	0.92	0.92	0.92		0.92	0.92
Percent Heavy Veh, %	93	93	93	5		5	0
Cap, veh/h	10	10	9	2333		1788	28
Arrive On Green	0.04	0.04	0.02	0.67		0.51	0.51
Sat Flow, veh/h	228	228	497	3561		3588	54
Grp Volume(v), veh/h	35	0	14	871		675	707
Grp Sat Flow(s),veh/h/ln	469	0	497	1735		1735	1816
Q Serve(g_s), s	1.3	0.0	0.6	3.5		9.8	9.8
Cycle Q Clear(g_c), s	1.3	0.0	0.6	3.5		9.8	9.8
Prop In Lane	0.49	0.49	1.00				0.03
Lane Grp Cap(c), veh/h	20	0	9	2333		887	928
V/C Ratio(X)	1.78	0.00	1.54	0.37		0.76	0.76
Avail Cap(c_a), veh/h	74	0	79	2333		991	1038
HCM Platoon Ratio	1.00	1.00	1.00	1.00		1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00		1.00	1.00
Uniform Delay (d), s/veh	15.1	0.0	15.5	2.3		6.2	6.2
Incr Delay (d2), s/veh	391.9	0.0	332.0	0.1		3.1	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.9	0.0		2.3	2.4
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	407.0	0.0	347.5	2.4		9.3	9.2
LnGrp LOS	F	A	F	A		A	A
Approach Vol, veh/h	35			885		1382	
Approach Delay, s/veh	407.0			7.8		9.2	
Approach LOS	F			A		A	
Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		25.7		5.8	5.1	20.6	
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5	
Max Green Setting (Gmax), s		18.0		5.0	5.0	18.0	
Max Q Clear Time (g_c+I1), s		5.5		3.3	2.6	11.8	
Green Ext Time (p_c), s		4.9		0.0	0.0	4.3	

### Intersection Summary

HCM 6th Ctrl Delay	14.7
HCM 6th LOS	B

### Notes

- User approved volume balancing among the lanes for turning movement.
- User approved ignoring U-Turning movement.

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*APPENDIX D – TRIP GENERATION DATA*

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Trip rate based on acreage	Acres	daily trips	trip rate
Empirical New Dock Log	10	518	51.85 trips/ac

## JSG Support Yard

Opening Year	Acres	trip rate	daily trips
Opening Year With Project	18.6	51.85	966
Opening Year Without Project		51.85	0

Horizon Year	Acres	trip rate	daily trips
Horizon Year With Project	18.6	96.31	1794
Horizon Year Without Project	0.0	51.85	0

Temp. Dist:

2-shift (Innovative)

Unadjusted

JSG Support Yard - Project

	Pickup	Dropoff	Inbound		Outbound		PCE		Temporal Distribution		
			Bobtail	Chassis	Bobtail	Chassis	In	Out	Vehicles	%	
12:00 AM		1.18%	1.38%	6	7	7	6	21	20	26	2.69%
1:00 AM		0.74%	1.06%	4	5	5	4	15	14	18	1.86%
2:00 AM		0.02%	0.23%	0	1	1	0	2	1	2	0.21%
3:00 AM		0.00%	0.00%	0	0	0	0	0	0	0	0.00%
4:00 AM		0.00%	0.00%	0	0	0	0	0	0	0	0.00%
5:00 AM		0.00%	0.00%	0	0	0	0	0	0	0	0.00%
6:00 AM		0.00%	0.00%	0	0	0	0	0	0	0	0.00%
7:00 AM		3.76%	1.38%	18	7	7	18	36	44	50	5.17%
8:00 AM		5.61%	2.15%	27	10	10	27	52	66	74	7.64%
9:00 AM		4.78%	2.81%	23	14	14	23	56	63	74	7.64%
10:00 AM		3.75%	3.76%	18	18	18	18	58	58	72	7.44%
11:00 AM		3.30%	4.34%	16	21	21	16	61	57	74	7.64%
12:00 PM		2.85%	4.35%	14	21	21	14	59	53	70	7.23%
1:00 PM		2.87%	5.64%	14	27	27	14	71	60	82	8.47%
2:00 PM		2.77%	5.54%	13	27	27	13	70	58	80	8.26%
3:00 PM		2.33%	4.50%	11	22	22	11	57	48	66	6.82%
4:00 PM		1.56%	1.84%	8	9	9	8	28	27	34	3.51%
5:00 PM		2.22%	1.06%	11	5	5	11	23	28	32	3.31%
6:00 PM		2.90%	1.45%	14	7	7	14	31	36	42	4.34%
7:00 PM		2.58%	1.58%	12	8	8	12	30	34	40	4.13%
8:00 PM		2.30%	1.60%	11	8	8	11	29	32	38	3.93%
9:00 PM		1.82%	1.73%	9	8	8	9	27	28	34	3.51%
10:00 PM		1.46%	1.64%	7	8	8	7	24	24	30	3.10%
11:00 PM		1.18%	1.95%	6	9	9	6	25	23	30	3.10%
				0	242	242	242	242			

Temp. Dist: **2-shift (Innovative)**

**JSG Suport Yard - Project**

Pickup	Dropoff	Inbound		Outbound		PCE		Temporal Distribution		
		Bobtail	Chassis	Bobtail	Chassis	In	Out	Vehicles	%	
12:00 AM	1.18%	1.38%	11	12	12	11	37	36	46	2.56%
1:00 AM	0.74%	1.06%	7	10	10	7	28	26	34	1.89%
2:00 AM	0.02%	0.23%	0	2	2	0	4	2	4	0.22%
3:00 AM	0.00%	0.00%	0	0	0	0	0	0	0	0.00%
4:00 AM	0.00%	0.00%	0	0	0	0	0	0	0	0.00%
5:00 AM	0.00%	0.00%	0	0	0	0	0	0	0	0.00%
6:00 AM	0.00%	0.00%	0	0	0	0	0	0	0	0.00%
7:00 AM	3.76%	1.38%	34	12	12	34	65	82	92	5.12%
8:00 AM	5.61%	2.15%	50	19	19	50	98	123	138	7.68%
9:00 AM	4.78%	2.81%	43	25	25	43	102	116	136	7.56%
10:00 AM	3.75%	3.76%	34	34	34	34	109	109	136	7.56%
11:00 AM	3.30%	4.34%	30	39	39	30	114	107	138	7.68%
12:00 PM	2.85%	4.35%	26	39	39	26	109	99	130	7.23%
1:00 PM	2.87%	5.64%	26	51	51	26	133	113	154	8.57%
2:00 PM	2.77%	5.54%	25	50	50	25	130	110	150	8.34%
3:00 PM	2.33%	4.50%	21	40	40	21	105	90	122	6.79%
4:00 PM	1.56%	1.84%	14	16	16	14	49	47	60	3.34%
5:00 PM	2.22%	1.06%	20	10	10	20	44	52	60	3.34%
6:00 PM	2.90%	1.45%	26	13	13	26	57	68	78	4.34%
7:00 PM	2.58%	1.58%	23	14	14	23	56	63	74	4.12%
8:00 PM	2.30%	1.60%	21	14	14	21	53	59	70	3.89%
9:00 PM	1.82%	1.73%	16	16	16	16	51	51	64	3.56%
10:00 PM	1.46%	1.64%	13	15	15	13	46	44	56	3.11%
11:00 PM	1.18%	1.95%	11	17	17	11	47	42	56	3.11%
Total:			451	448	448	451				





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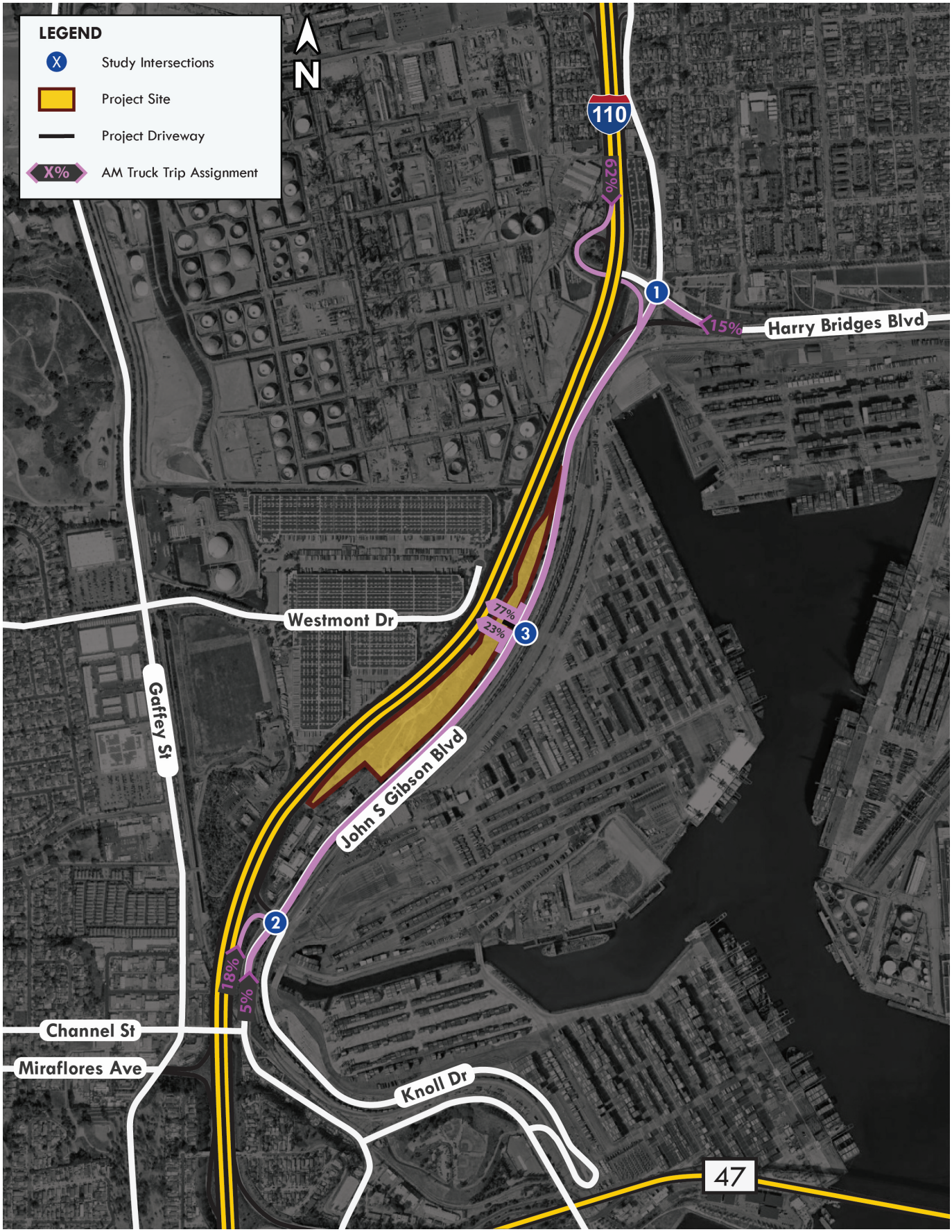
*APPENDIX E – ADDITIONAL TRIP DISTRIBUTION FIGURES*

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**LEGEND**





-  Study Intersections
-  Project Site
-  Project Driveway
-  AM Truck Trip Assignment

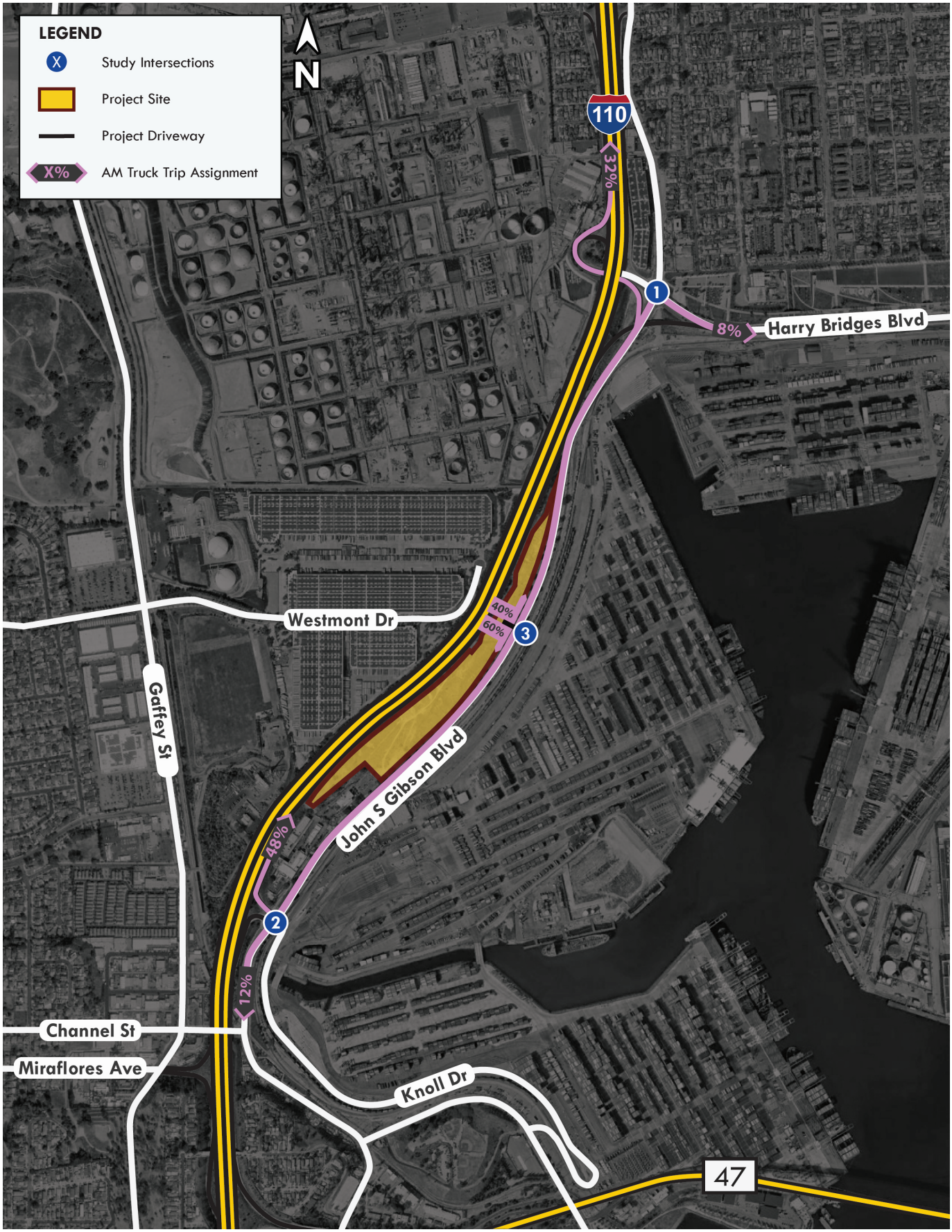


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**LEGEND**





-  Study Intersections
-  Project Site
-  Project Driveway
-  AM Truck Trip Assignment

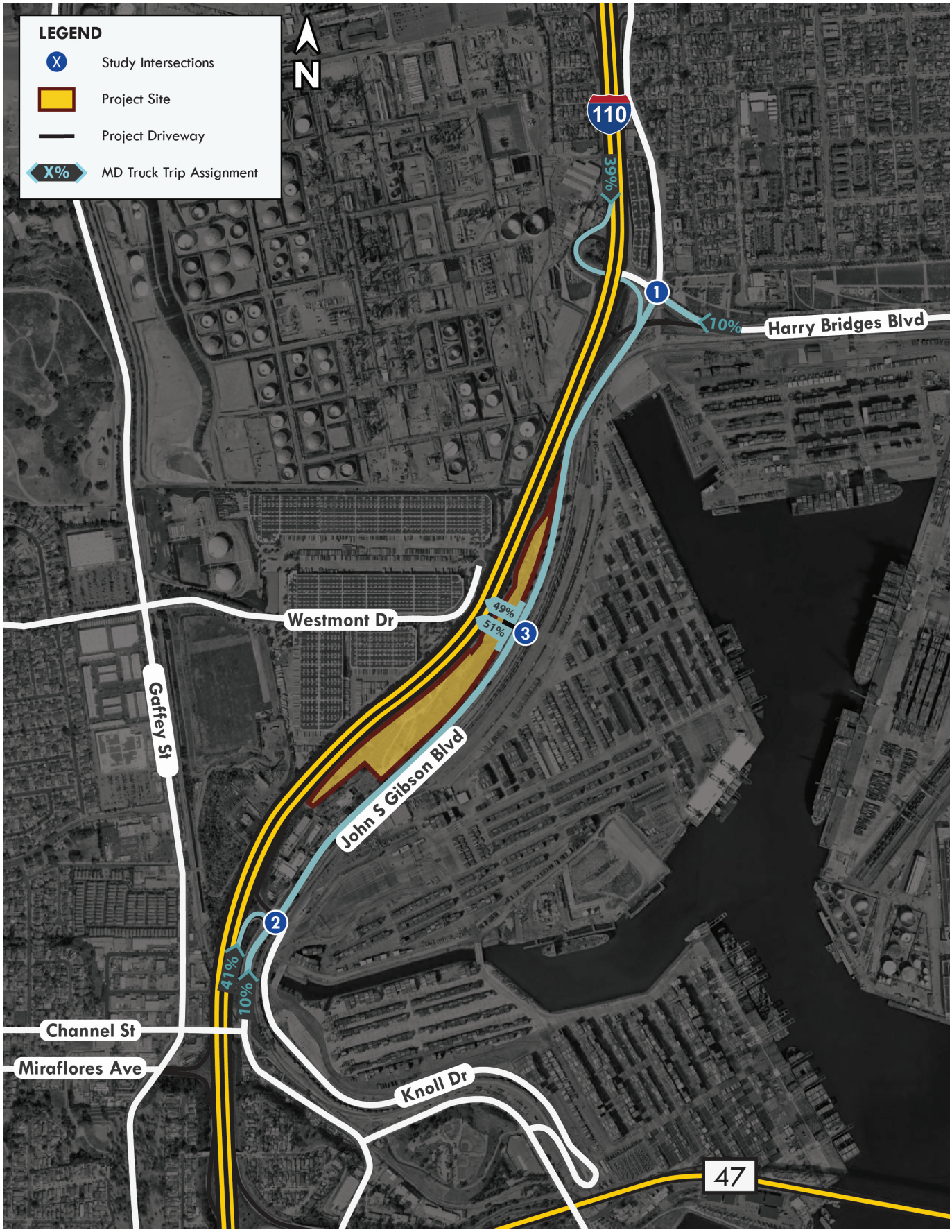


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**LEGEND**

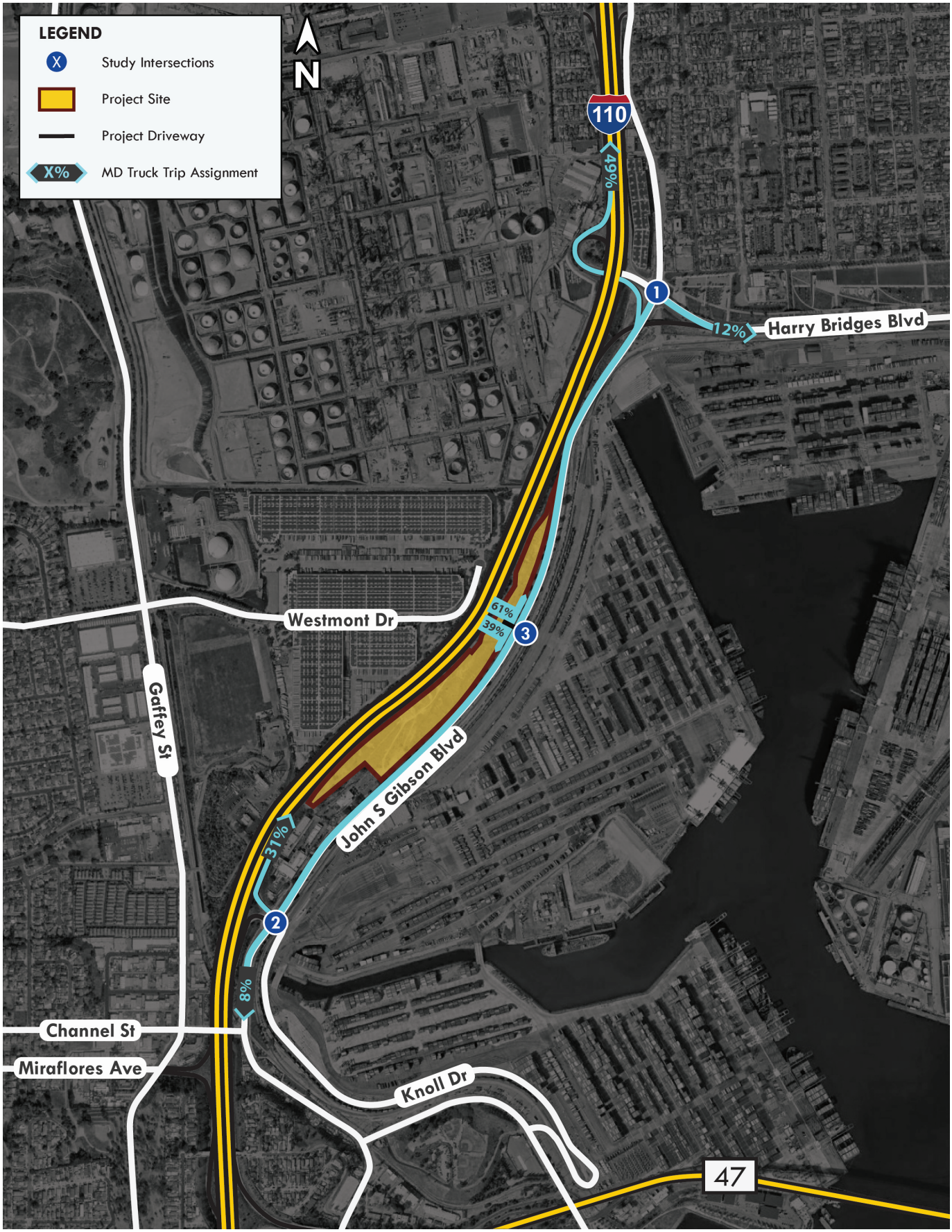
-  Study Intersections
-  Project Site
-  Project Driveway
-  MD Truck Trip Assignment





**LEGEND**





-  Study Intersections
-  Project Site
-  Project Driveway
-  MD Truck Trip Assignment

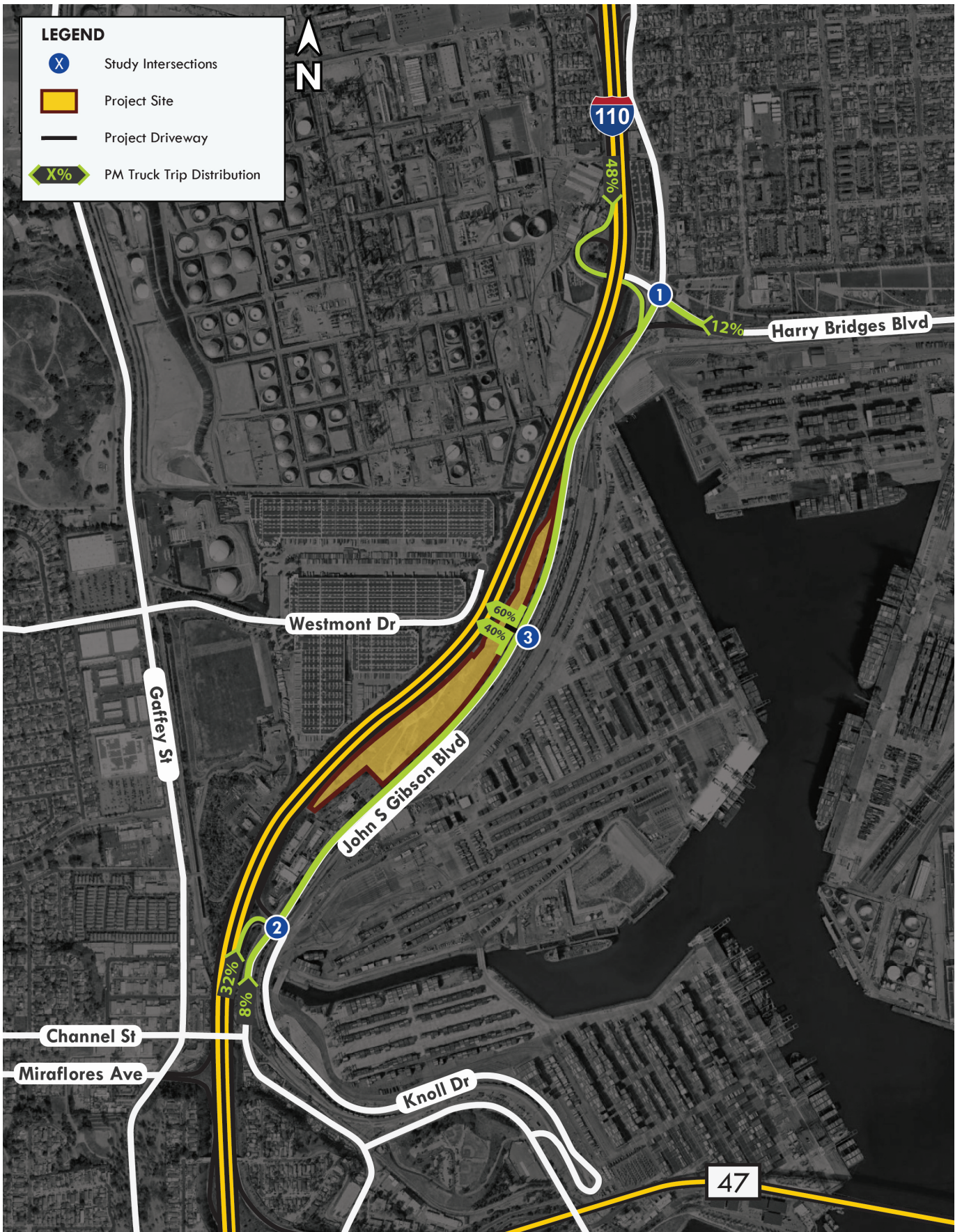


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**LEGEND**

-  Study Intersections
-  Project Site
-  Project Driveway
-  PM Truck Trip Distribution





**LEGEND**

-  Study Intersections
-  Project Site
-  Project Driveway
-  PM Truck Trip Distribution

