

 **Volume 1 – Traffic Impact Analysis**

**Texas Odyssey TIA**  
Dallas, Texas

May 23, 2018

Kimley-Horn and Associates, Inc.  
Dallas, Texas

Project #064529800  
Registered Firm F-928

**Kimley»»Horn**

**Traffic Impact Analysis**

**Texas Odyssey  
Dallas, Texas**

PRELIMINARY	
FOR REVIEW ONLY	
Not for construction or permit purposes.	
<b>Kimley»Horn</b>	
Engineer	SCOT A. JOHNSON
P.E. No.	92615
Date	05/23/2018

Prepared by:

Kimley-Horn and Associates, Inc.  
13455 Noel Road, Two Galleria Tower, Suite 700  
Dallas, Texas 75240  
Registered Firm F-928

Contact:

Mark Goode, P.E.  
Scot Johnson, P.E., PTOE  
Christian DeLuca, EIT  
Jake Halter, EIT  
972-770-1300  
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## EXECUTIVE SUMMARY

The proposed Texas Odyssey development is located between the Trinity River and downtown Dallas. It's entry points are on the south side of Riverfront Boulevard between Cadiz Street and Corinth Street. This study is intended to identify traffic generation characteristics, identify potential traffic related impacts on the local street system, and to develop mitigation measures required for identified impacts. The site as proposed will replace the vacant lot with a 600-foot Ferris wheel with 27 capsules soon to be known as the Eye-of-Texas. The lot will also house 60,000 SF of retail space for the Ferris wheel riders and 20,000 SF of restaurant, most of which will be accessory uses for the Ferris wheel and will not independently attract vehicle traffic.

The following existing intersections were selected to be part of this study:

- Cadiz Street @ Griffin Street
- Cadiz Street @ Lamar Street
- Cadiz Street @ Hotel Street
- Cadiz Street @ Riverfront Boulevard
- Riverfront Boulevard @ Corinth Street
- Corinth Street @ Cockrell Avenue
- Corinth Street @ Lamar Street
- Lamar Street @ Cockrell Avenue
- Riverfront Boulevard @ I-35E South On-Ramp
- Riverfront Boulevard @ I-35E South/30 East Off-Ramp

The analysis also included the following proposed driveways:

- Drive 1, which is a full-access driveway to Riverfront Boulevard;
- Drive 2, is restricted to right-in/right-out movements onto Riverfront Boulevard;
- Drive 3, which is a full-access driveway to Turtle Creek Boulevard;

In this report, Drive 1 is a full access driveway that will be constructed primarily for the inbound movement, Drive 1 and Drive 2 will also serve as a pick-up/drop-off loop for the site. Drive 2 is a right-in/right-out driveway. Drive 3 will primarily serve the site parking garage and will have the most amount of site-generated traffic.

Traffic operations were analyzed at the study intersections for existing volumes, 2020 and 2025 background traffic volumes, and 2020 and 2025 background plus site-generated traffic volumes. The future years correspond to the expected buildout year of the site and a key future study year. Conditions were analyzed for the typical weekend and PM peak hours.

The background traffic conditions included existing traffic with compound growth rates, plus explicit modeling of the following development in 2025:

- The Texas Central Bullet Train Dallas train station, a large development located on the north side of Riverfront Boulevard, east of Cadiz Street.

At full capacity, the proposed Texas Odyssey development is expected to generate approximately 585 new weekend peak hour one-way trips and 662 new weekday PM peak hour one-way trips. The distribution of the site-generated traffic volumes onto the street system was based on the surrounding roadway network, existing traffic patterns, and the project's proposed access locations.

Based on the analysis presented in this report, the proposed Texas Odyssey development, can be successfully incorporated into the surrounding roadway network. The proposed site driveways provide an acceptable level of access for the development. The site-generated traffic does not significantly affect the existing vehicle traffic operations.

The northbound approach of the intersection of Corinth Street and Lamar Street is approximately 40' wide with one left turn lane, 2 through lanes, and one through-right shared lane. The intersection has a heavy right-turning movement, whereas it has a relatively light through movement. The right turning movement has an excessive delay due to having only one lane to turn from and competing with through vehicles for position in the shared lane. It is recommended that the intersection be reconfigured to dedicate the through-right turn lane as a right-turn only lane and the adjacent through lane as a through-right shared lane to accommodate the heavy right turn movement.

The following site roadway improvements are recommended to provide reasonable access to and from the site:

On Riverfront Boulevard at Drive 1 (the western driveway):

1. Construct a westbound left-turn lane.
2. Construct an eastbound right-turn lane to prevent the right-hook conflict between bicyclists in the bike lane and right-turning vehicles.

On Riverfront Boulevard at Drive 2 (the central driveway):

1. Construct an eastbound right-turn lane to prevent the right-hook conflict between bicyclists in the bike lane and right-turning vehicles.

On Riverfront Boulevard at Drive 3 (the eastern driveway):

1. Construct a westbound left-turn lane.
2. Construct an eastbound right-turn lane to prevent the right-hook conflict between bicyclists in the bike lane and right-turning vehicles.

## I. INTRODUCTION

### A. Purpose

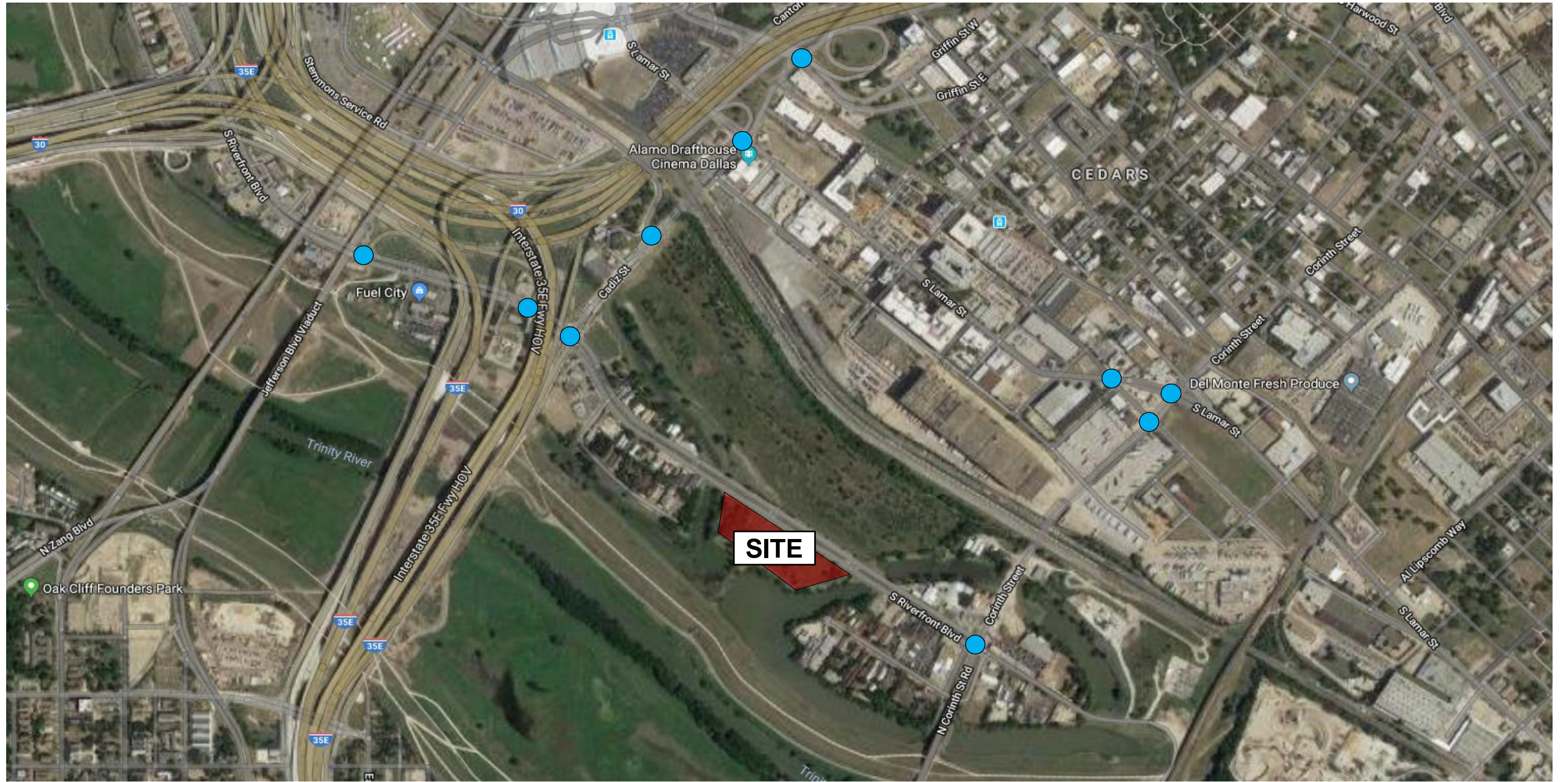
Kimley-Horn was retained to conduct a Traffic Impact Analysis (TIA) of future traffic conditions associated with the development of the Texas Odyssey (Eye-of-Texas) site located on the southside of Riverfront Boulevard between Cadiz Street and Corinth Street. A site vicinity map is provided as **Exhibit 1**. **Exhibit 2** shows the proposed conceptual site plan. This study is intended to identify traffic generation characteristics, identify potential traffic related impacts on the local street system, and to develop mitigation measures required for identified impacts.

### B. Methodology

Traffic operations were analyzed at the study intersections for Weekend (Saturday) and Weekday PM peak hours for the following scenarios.

- 2018 existing traffic
- 2020 background traffic
- 2020 background plus site traffic
- 2025 background traffic
- 2025 background plus site traffic


The capacity analyses were conducted using the *Synchro*<sup>™</sup> software package and its *Highway Capacity Manual* reports for both signalized and unsignalized intersections.




**EXHIBIT 1**

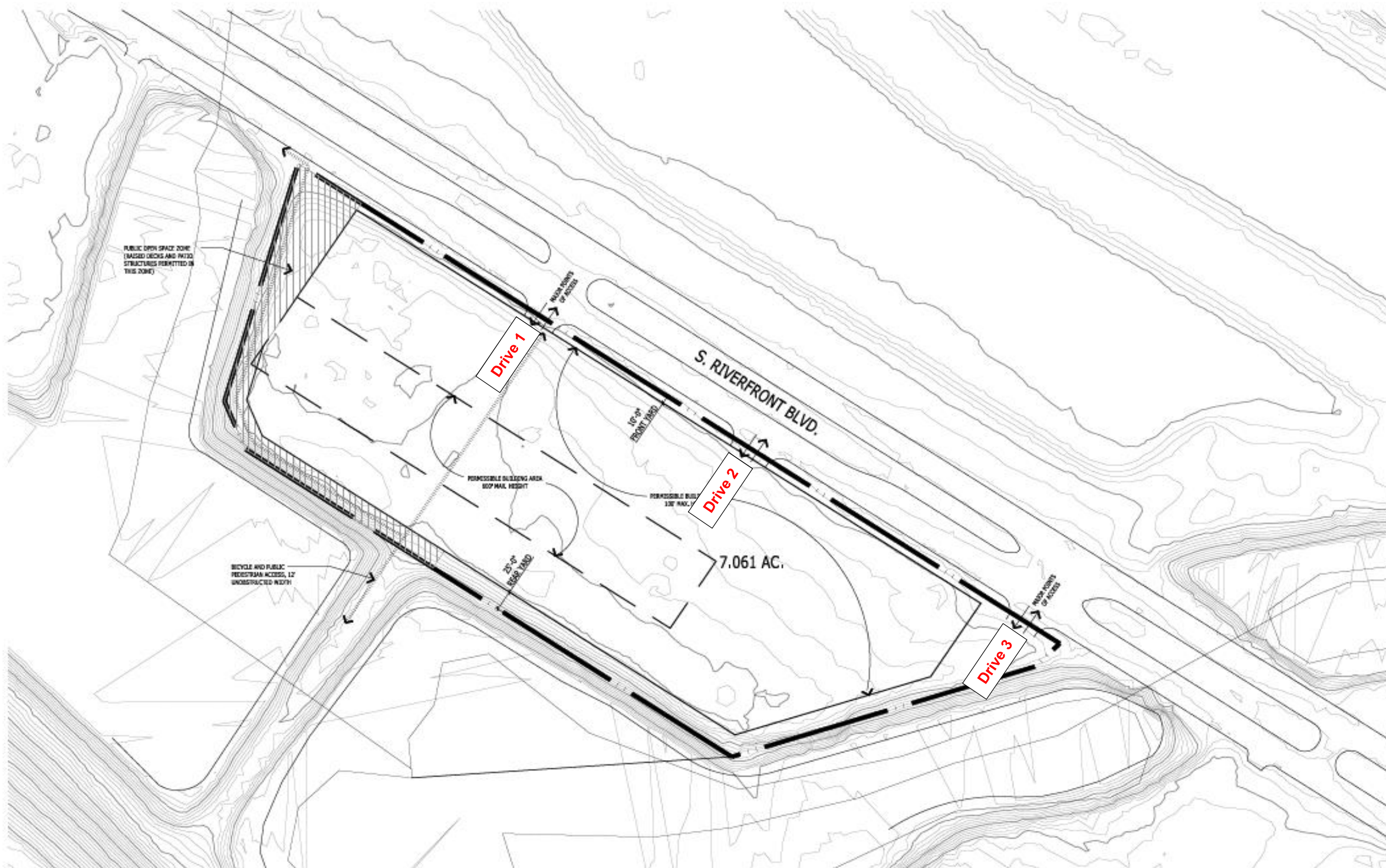
Vicinity Map  
EOT - Dallas, Texas



**LEGEND:**  
 = Study Intersection

North  
  
 Not To Scale





## DEVELOPMENT SUMMARY

LAND USES:  
 OUTDOOR COMMERCIAL AMUSEMENT: 7.061 AC.

MAXIMUM LOT COVERAGE:  
 NO MAXIMUM COVERAGE (PER PD 800)

NET RESIDENTIAL DENSITY: N/A

FLOOR AREA RATIO FOR EACH USE:  
 OUTDOOR COMMERCIAL AMUSEMENT: 4:1

MAXIMUM HEIGHT:  
 100' & 60' (AS SHOWN ON CONCEPT PLAN)

PROPOSED SETBACKS:  
 RIVERFRONT: 10'  
 REAR: 25'  
 SIDES: 25' AND AS SHOWN

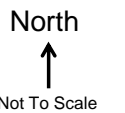
ZONING CASE NO:

## VICINITY MAP



## EXHIBIT 2

Conceptual Site Plan  
 EOT - Dallas, Texas



Not To Scale

## II. EXISTING AND FUTURE AREA CONDITIONS

### A. Roadway Characteristics

The following signalized intersections were evaluated as part of this study:

- Cadiz Street @ Griffin Street
- Cadiz Street @ Lamar Street
- Cadiz Street @ Hotel Street
- Cadiz Street @ Riverfront Boulevard
- Riverfront Boulevard @ Corinth Street
- Corinth Street @ Cockrell Avenue
- Corinth Street @ Lamar Street

The following unsignalized intersections were evaluated as part of this study:

- Lamar Street @ Cockrell Avenue
- Riverfront Boulevard @ I-35E South On-Ramp
- Riverfront Boulevard @ I-35E South/30 East Off-Ramp

The major study area roadways are described below.

**Riverfront Boulevard** – is a four-lane divided road that runs southeast-northwest parallel to the Trinity River near the site with bike lanes on the outer edge of the travel lanes in either direction. In the project vicinity, Riverfront Boulevard has intersections with Corinth Street, Dearborn Street, Cadiz Street, the I-35E on- and off-ramps, and various commercial driveways. On the City of Dallas Thoroughfare Plan, Riverfront Boulevard is classified as a six-lane Principal Arterial (SPCL 6D). The speed limit near the site is posted at 35 mph.

**Corinth Street** – is a four-lane undivided road that runs northeast-southwest from the Oak Cliff area across the Trinity River into the Cedars area. In the project vicinity, Corinth Street has intersections with Riverfront Boulevard, Austin Street, Cockrell Avenue, Lamar Street, and various commercial driveways. On the City of Dallas Thoroughfare Plan, Corinth Street is classified as a four-lane Principal Arterial (S-4-D). The speed limit near the site is assumed to be 30 mph.

**Cadiz Street** – is a variable width, undivided road that runs northeast-southwest from I-35E, on the north side of the Trinity, to the downtown area. In the project vicinity, Cadiz Street has intersections with Riverfront Boulevard, Lamar Street, Griffin Street, and various commercial driveways before crossing over I-30 into downtown. On the City of Dallas Thoroughfare Plan, Cadiz Street is classified as a central business district (CBD) road. CBD roads are only classified by being either one-way or two-way. South of riverfront Boulevard, Cadiz Street is one-way northbound. Between Riverfront Boulevard

and Lamar Street, Cadiz Street is two-way. North of Lamar Street, Cadiz Street is one-way northbound. The speed limit near the site is posted at 30 mph.

**Lamar Street** – is a five-lane undivided road that runs southeast-northwest from South Dallas to downtown. There is a two-way left-turn lane running the length of Lamar Street. In the project vicinity, Lamar Street has intersections with Corinth Street, Cockrell Avenue, Cadiz Street, various local streets, and an assortment of commercial driveways. On the City of Dallas Thoroughfare Plan, Lamar Street is classified as a five-lane Principal Arterial (SPCL 5U). The speed limit near the site is posted at 30 mph.

**Griffin Street** – is a six-lane divided road that runs from downtown to the Cedars area. In the project vicinity, Griffin Street intersects Cadiz Street. On the City of Dallas Thoroughfare Plan, Griffin Street is designated as CBD road. East of Cadiz Street, Griffin Street is not classified. West of Cadiz Street, Griffin Street is classified as a two-way CBD road. The speed limit near the site is assumed to be 30 mph.

**Cockrell Avenue** – is a wide, two-lane undivided road that runs southeast-northwest through the Cedars area. Cockrell Avenue intersects Lamar Street and Corinth Street among other local streets and commercial driveways. On the City of Dallas Thoroughfare Plan, Cockrell Avenue is not classified. The speed limit near the site is assumed to be 30 mph.

**Hotel Street** – is a four-lane undivided road that runs from Reunion Tower to Cadiz Street. On the City of Dallas Thoroughfare Plan, Hotel Street is classified as a two-way CBD road. The speed limit near the site is assumed to be 30 mph.

**Exhibit 3** illustrates the existing intersection geometry used for the traffic analysis.

## **B. Existing Study Area**

The property is located within PD 800. The property is currently undeveloped.

## **C. Proposed Site Improvements**

The site as proposed will include a 27-Capsule Ferris Wheel; 60,000 SF of retail, which is exclusively intended for Ferris Wheel riders; and 20,000 SF of quality restaurant.

The site would have access via a total of four driveways, but the westernmost driveway for the site is not open to site traffic and was not modelled in this analysis. The three driveways to be modeled in this analysis are as follows:

**Drive 1** – would be a full-access driveway to Riverfront Boulevard approximately a quarter of a mile west of the intersection of Riverfront Boulevard and Corinth Street at an existing median opening. The median opening is the fourth from Corinth Street. One lane will be constructed for the inbound movement, and two lanes will be constructed for

the outbound movement. Drive 1 and Drive 2 will also serve as a pick-up/drop-off loop for the site. Drive 1 will be designated for mainly the inbound pick-up/drop-off traffic and Drive 2 will be designated for mainly the outbound pick-up/drop-off traffic. An eastbound right-turn lane is recommended to be constructed to separate right-turning vehicles from bicyclists in the bike lane. A westbound left-turn is recommended to be constructed as well.

**Drive 2** – would be a right-in/right-out driveway to Riverfront Boulevard approximately 300 feet east of the intersection of Riverfront Boulevard and Drive 1. One lane will be constructed for the inbound movement, and one lane will be constructed for the outbound movement. Drive 2 will be designated for mainly the outbound pick-up/drop-off traffic (see Drive 1 description). An eastbound right-turn lane is recommended to be constructed to separate right-turning vehicles from bicyclists in the bike lane.

**Drive 3** – would be a full-access driveway to Riverfront Boulevard approximately 1,000 feet west of the intersection of Riverfront Boulevard and Corinth Street at an existing median opening. The median opening is the third from Corinth Street. One lane will be constructed for the inbound movement, and two lanes will be constructed for the outbound movement. Drive 3 will primarily serve the site parking garage. An eastbound right-turn lane is recommended to be constructed to separate right-turning vehicles from bicyclists in the bike lane. A westbound left-turn is recommended to be constructed as well.

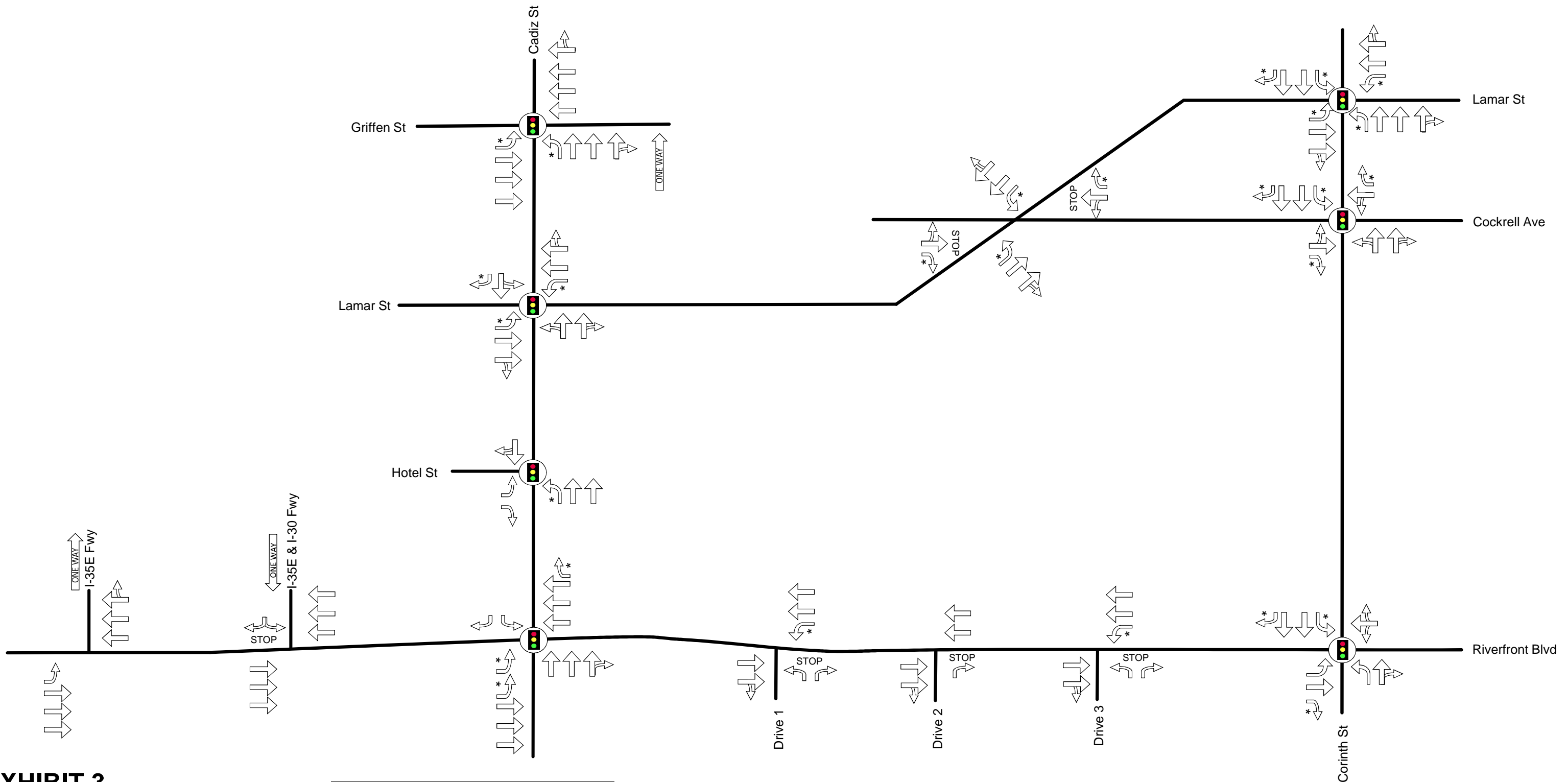
Intersection sight distance at the proposed driveways are acceptable, with each on flat and relatively straight segments of their respective roadway.

#### **D. Existing Traffic Volumes**

24-hour machine counts were collected near the site on Riverfront Boulevard, Cadiz Street, and Corinth Street. **Exhibit 4** shows the existing weekday AM and PM peak hour traffic volumes. The raw count sheets are provided in the **Appendix**, as well as a comparison between the 24-hour volumes collected and previous 24-hour counts.

The 24-hour count showed the daily volume on the roadway link as follows:

- Riverfront Boulevard: 14,814 vehicles per day (vpd)
- Cadiz Street: 10,885 vpd
- Corinth Street (between Riverfront Boulevard and Austin Street): 16,419 vpd
- Corinth Street (south of Riverfront Boulevard): 14,715 vpd

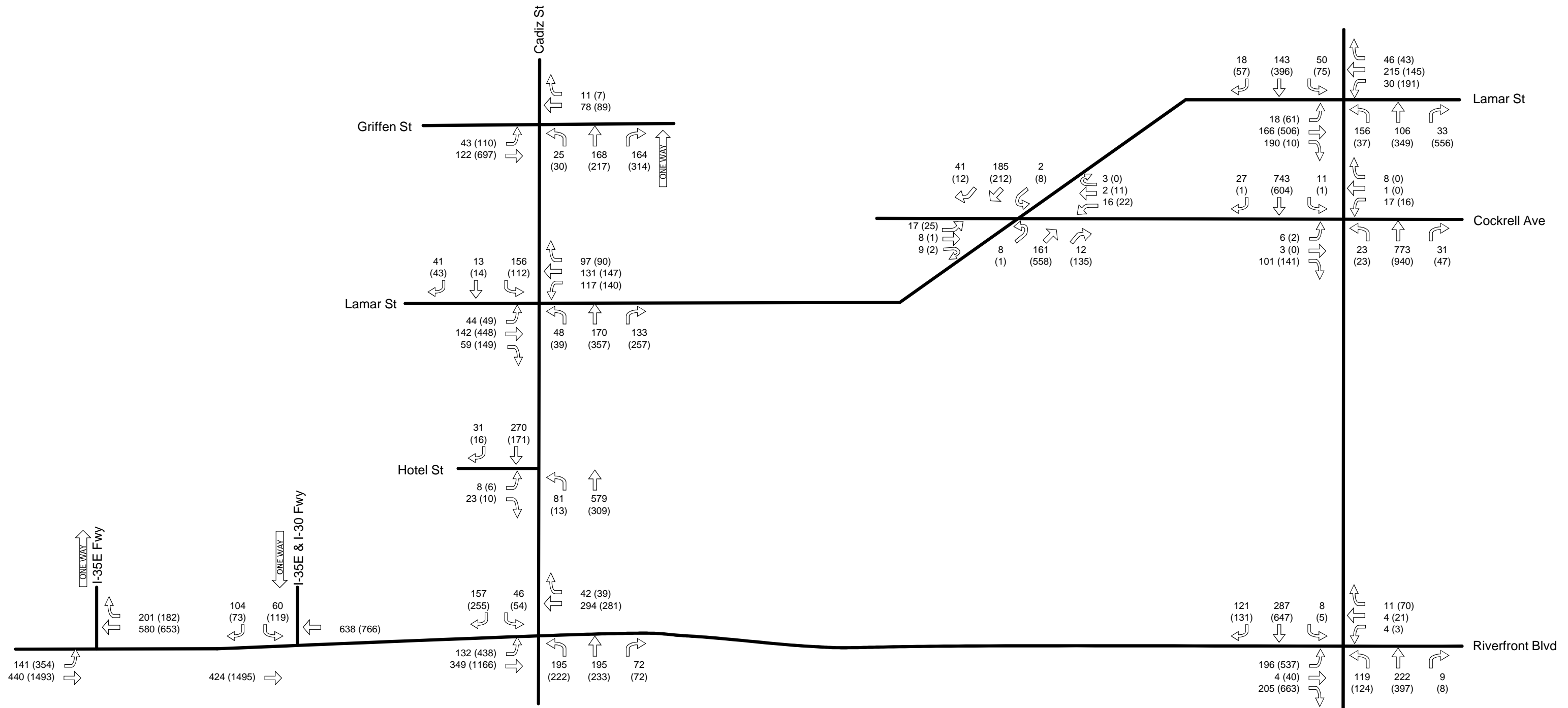


**EXHIBIT 3**  
 Lane Assignment and Intersection Control  
 EOT - Dallas, Texas



LEGEND:	
	= Signalized Intersection
STOP	= Stop-Controlled Approach
	= Travel Lane
*	= Turn Bay
	= Driveway Lanes or Off-Site Improvements
TWLTL	= Two-Way Left Turn Lane

North  
  
 Not To Scale



# EXHIBIT 4

2018 Existing Traffic Volumes  
EOT - Dallas, Texas



**LEGEND:**  
 X (Y)  
 X = Weekend Peak Hour Turning Movements  
 Y = Weekday PM Peak Hour Turning Movements  
 Volumes may not sum from point to point due to rounding  
 and presence of smaller driveways not included in analysis.

North  
 Not To Scale

### III. PROJECT TRAFFIC CHARACTERISTICS

#### A. Site-Generated Traffic

Site-generated traffic estimates are determined through a process known as trip generation. Typically, rates and equations are applied to the proposed land use to estimate traffic generated by the development during a specific time interval. The acknowledged source for trip generation rates is the 10th edition of *Trip Generation Manual* published by the Institute of Transportation Engineers (ITE). The trips indicated are actually one-way trips or *trip ends*, where one vehicle entering and exiting the site is counted as one inbound trip and one outbound trip. ITE establishes trip rates from multiple nationwide studies, however ITE does not publish every land-use development possible. For example, the development of this site is unique being that there are only a few of these large Ferris wheels currently operating worldwide. Therefore, ITE cannot be used for the Texas Odyssey Ferris wheel development. The retail and restaurant land-use on the site will use ITE trip generation rates.

The trip generation for the Texas Odyssey is calculated based on capacity data for the ride. The capacity per hour is 1,194 persons and is assumed to be full during our study peak hours. The trip generation used 2.5 persons per vehicle entering and exiting the site. The 2.5 persons per vehicles also accounts for the large number of people arriving by shuttles and busses. This assumption is common for events, including concerts and sporting games

**Table 1** shows the assumptions and trip generation for the Texas Odyssey.

**Table 1 – Trip Generation Texas Odyssey**

<b>Assumptions</b>	<b>#</b>
Wheel Capsules	27
Capsule Capacity	28
<b>Wheel Max Capacity</b>	756
Rotations Per Hour (38 min rotation)	1.58
<b>Wheel Capacity Per Hour</b>	1194
Persons per Vehicle	2.50
<b>Peak Hour Vehicle Trips</b>	478

Reductions to the base trip generation estimates are sometimes applied due to internal capture. Internal capture is the tendency for customers or tenants to visit several parts of the mixed-use development in one trip, but be counted twice in the trip generation since the formulae assume the residential, hotel, and office developments are isolated.

Internal capture reduces the number of trips leaving the site, and results in a projection of internal trips and external trips.

The retail land-use on-site for this development is specific to the Ferris wheel and intended solely for its riders. This area also includes a large square footage dedicated to education related to the wheel. The trips to the retail portion of the site will be entirely internal trips. The restaurant located on site is developed with the purpose of attracting both the Texas Odyssey riders and the general public, the internal capture for the restaurant is assumed to be 50%.

No reductions were taken for pass-by trips or multimodal use.

**Table 2** shows the resulting weekday daily, weekend peak hour and weekday PM peak hour trip generation for the proposed development, showing new external trips.

**Table 2 – Total Trip Generation**

Land Uses	Amount	Units	ITE Code	Daily One-Way Trips	Saturday Peak Hour One-Way Trips			Midweek PM Peak Hour One-Way Trips		
					IN	OUT	TOTAL	IN	OUT	TOTAL
Texas Odyssey	27	Caps	-	7,576	239	239	478	239	239	478
Retail/Shopping Center	60,000	SF	820	2,265	140	130	270	126	126	253
Quality Restaurant	20,000	SF	931	1,677	126	88	214	105	51	156
<b>Development Totals</b>										
<b>Raw Trip Generation Total:</b>				11,518	505	456	962	470	416	886
<b>Internal Capture Total:</b>				3,104	204	173	377	179	152	331
<b>Total Net New External Vehicle Trips:</b>				<b>8,415</b>	<b>302</b>	<b>283</b>	<b>585</b>	<b>291</b>	<b>264</b>	<b>556</b>

Trip Generation rates based on ITE's *Trip Generation Manual*, 10th Edition.

Internal Capture procedure from *ITE Trip Generation Handbook*, 3rd Edition (2014).

**B. Trip Distribution and Assignment**

The distribution of the site-generated traffic volumes into and out of the site driveways and onto the street system was based on the area street system characteristics, existing traffic patterns, relative residential density, and the locations of the proposed driveway access to/from the site.

The corresponding inbound and outbound traffic assignment, where the directional distribution is applied using the most probable paths to and from the site, can be found in **Exhibit 5**.

**Exhibit 6** shows the resulting site-generated weekend and weekday PM peak hour turning movements after multiplying the new external trip generation for each phase by the respective traffic assignment percentages.



**C. Other Development Traffic Modelling**

Using the same procedure as was used to develop the Texas Odyssey site-generated traffic and distribute that traffic on the roadway network, traffic was developed and distributed for the Texas Bullet Train Dallas station as well. The trip generation for the Texas Bullet Train was estimated based on the 2026 trip estimate published by Texas Central. The background trips added during peak hour for the station was 913 one-way trips. The distribution and volumes for this development can be found in the **Appendix**.

**D. Development of 2020 Background Traffic**

In order to obtain 2020 background traffic, the existing traffic counts and historic counts near the site were compared to find expected growth trends within the study area. Based on the recent growth in the area, an annual growth rate of 1% was assumed for the background traffic through 2020. To calculate the 2020 background traffic, the existing 2018 traffic counts were grown by 1% annually for two years. The resulting 2020 background weekend and PM peak hour traffic volumes are shown in **Exhibit 7**.

**E. Development of 2020 Total Traffic**

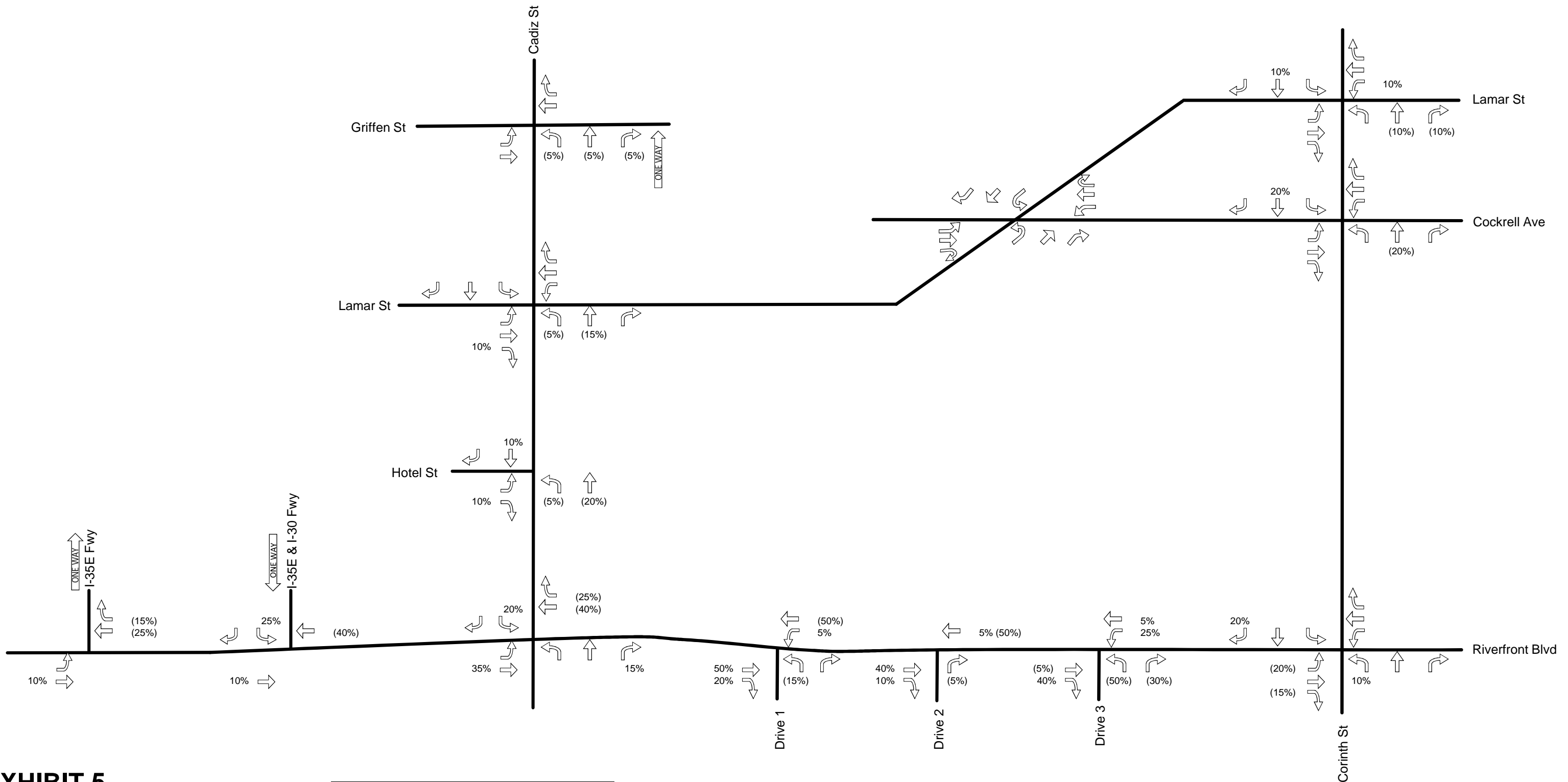
Site traffic volumes were added to the background volumes to represent the estimated total (background plus site-generated) traffic conditions for the 2020 study year after completion of the proposed development. **Exhibit 8** shows the resulting 2020 weekend and PM peak hour total traffic volumes.

**F. Development of 2025 Background**

The background and total traffic volumes in the 2025 study year were calculated in a similar manner to the 2020 traffic volumes by adding five years of 1% growth over the 2020 background volumes. The 2025 background traffic, unlike the 2020 background, includes the trips from the Texas Bullet Train Dallas train station. **Exhibit 9** shows the resulting 2025 weekend and PM peak hour background traffic volumes.

**G. Development of 2025 Total Traffic**

Total traffic volumes in the 2025 study year were calculated in a similar manner to the 2020 total traffic volumes and **Exhibit 10** shows the resulting 2025 weekend and PM peak hour total traffic volumes after the addition of the site-generated traffic.

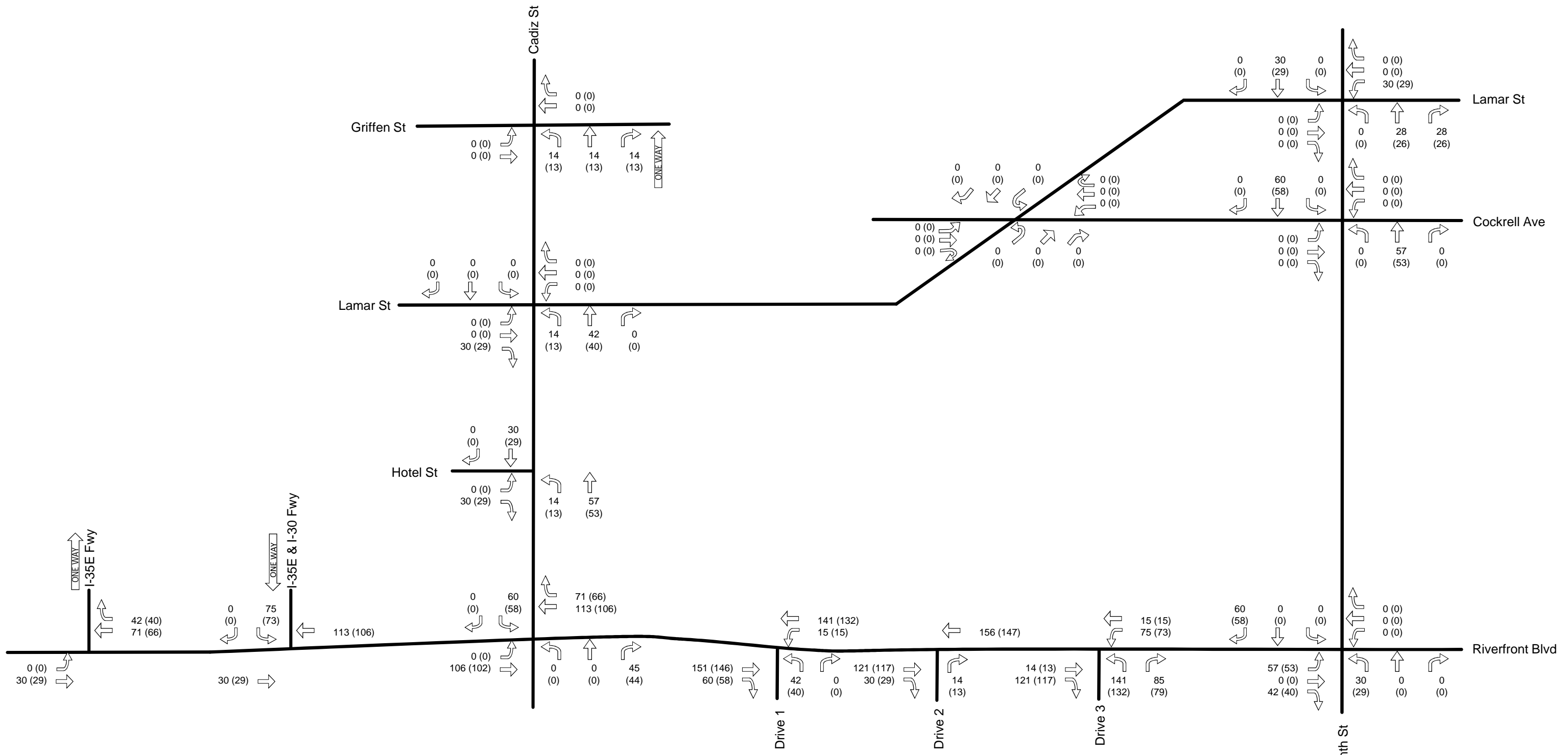


**EXHIBIT 5**  
 Trip Distribution and Traffic Assignment  
 EOT - Dallas, Texas

**LEGEND:**  
 X% (Y%)  
 X% = Percentage of Inbound Site-Generated Traffic  
 (Y%) = Percentage of Outbound Site-Generated Traffic



North  
 ↑  
 Not To Scale



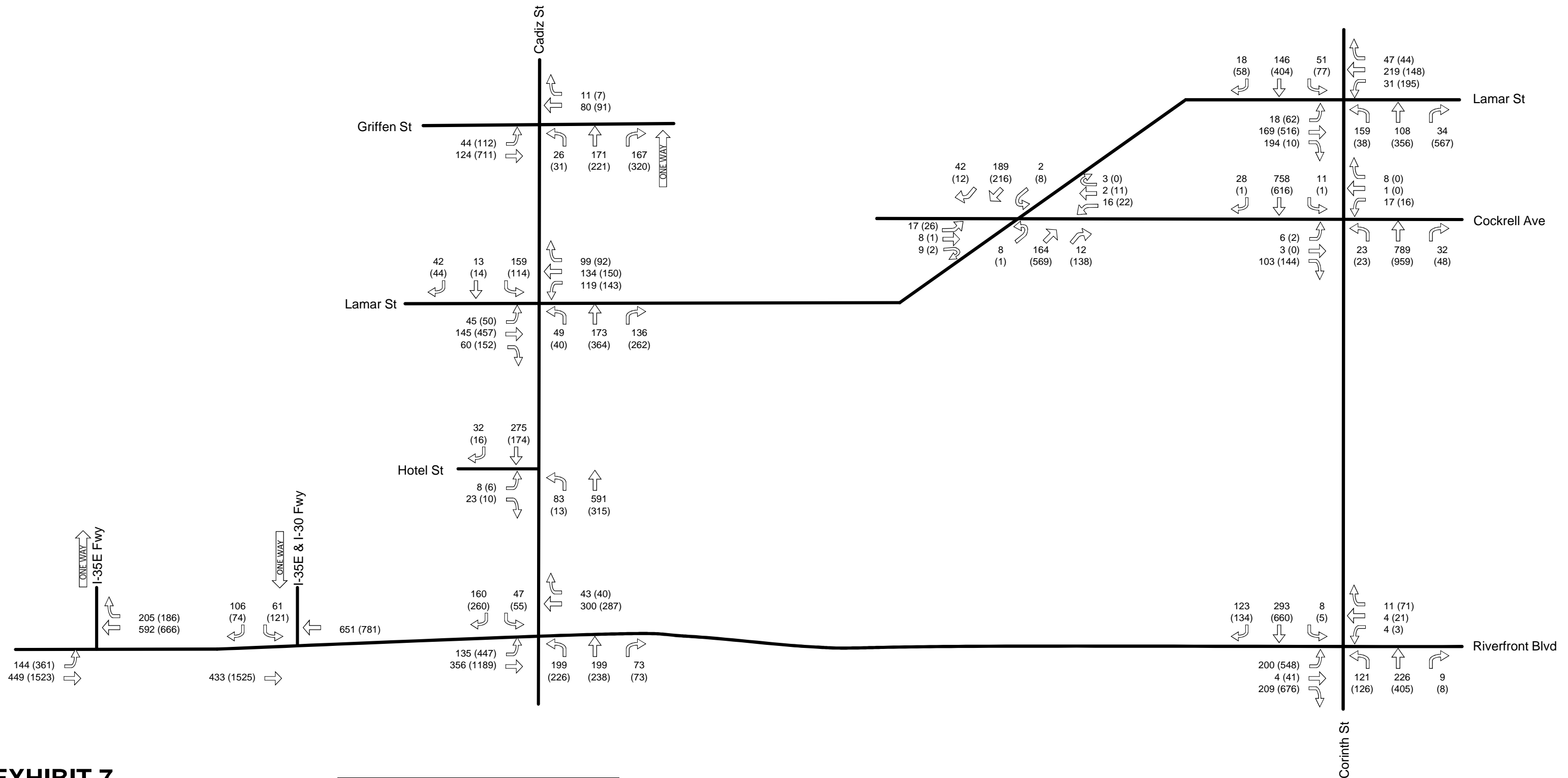
# EXHIBIT 6

Site-Generated Traffic Volumes  
EOT - Dallas, Texas



**LEGEND:**  
 X (Y)  
 X = Weekend Peak Hour Turning Movements  
 Y = Weekday PM Peak Hour Turning Movements  
 Volumes may not sum from point to point due to rounding  
 and presence of smaller driveways not included in analysis.

North  
 ↑  
 Not To Scale



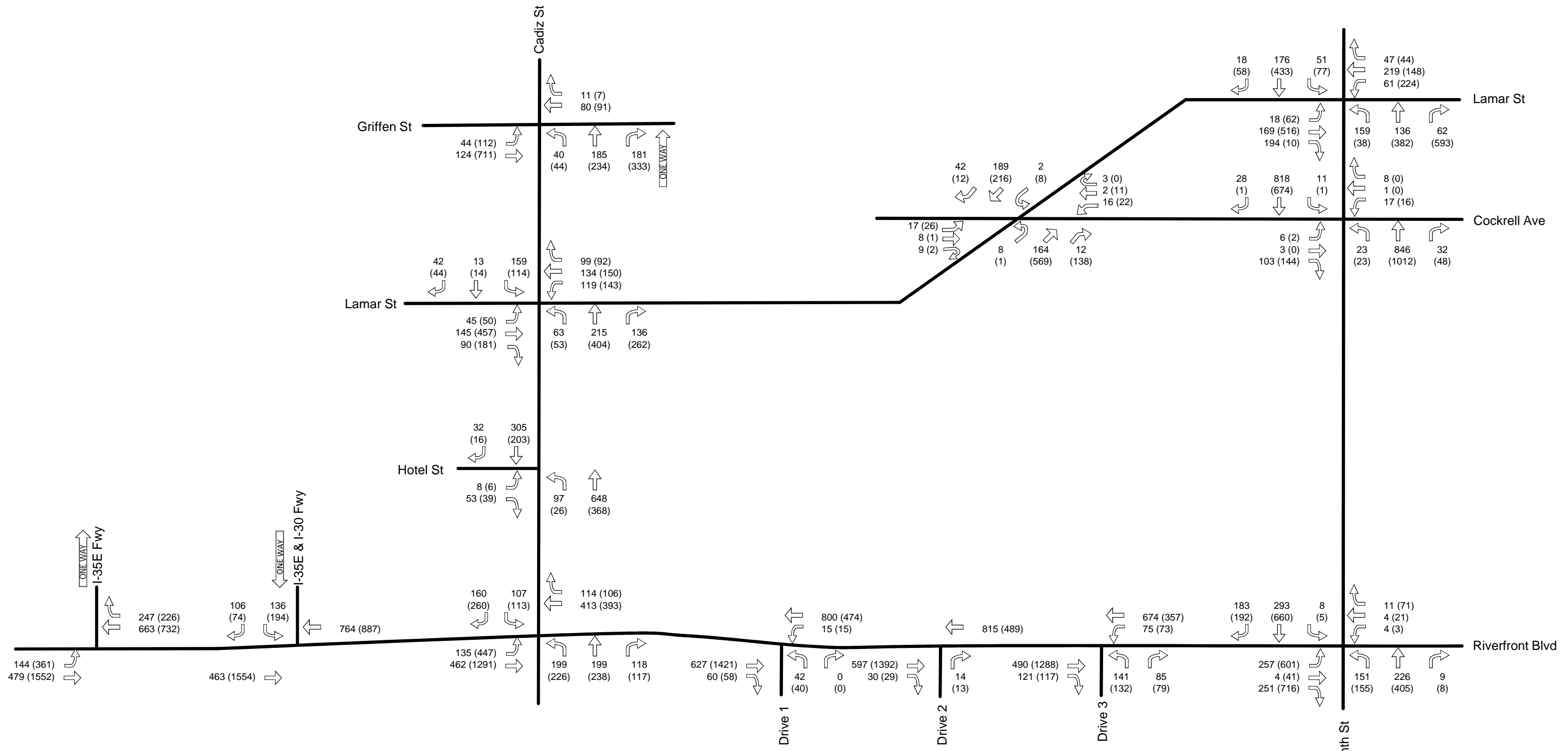
# EXHIBIT 7

2020 Background Traffic Volumes  
EOT - Dallas, Texas



**LEGEND:**  
 X (Y)  
 X = Weekend Peak Hour Turning Movements  
 Y = Weekday PM Peak Hour Turning Movements  
 Volumes may not sum from point to point due to rounding  
 and presence of smaller driveways not included in analysis.

North  
 Not To Scale

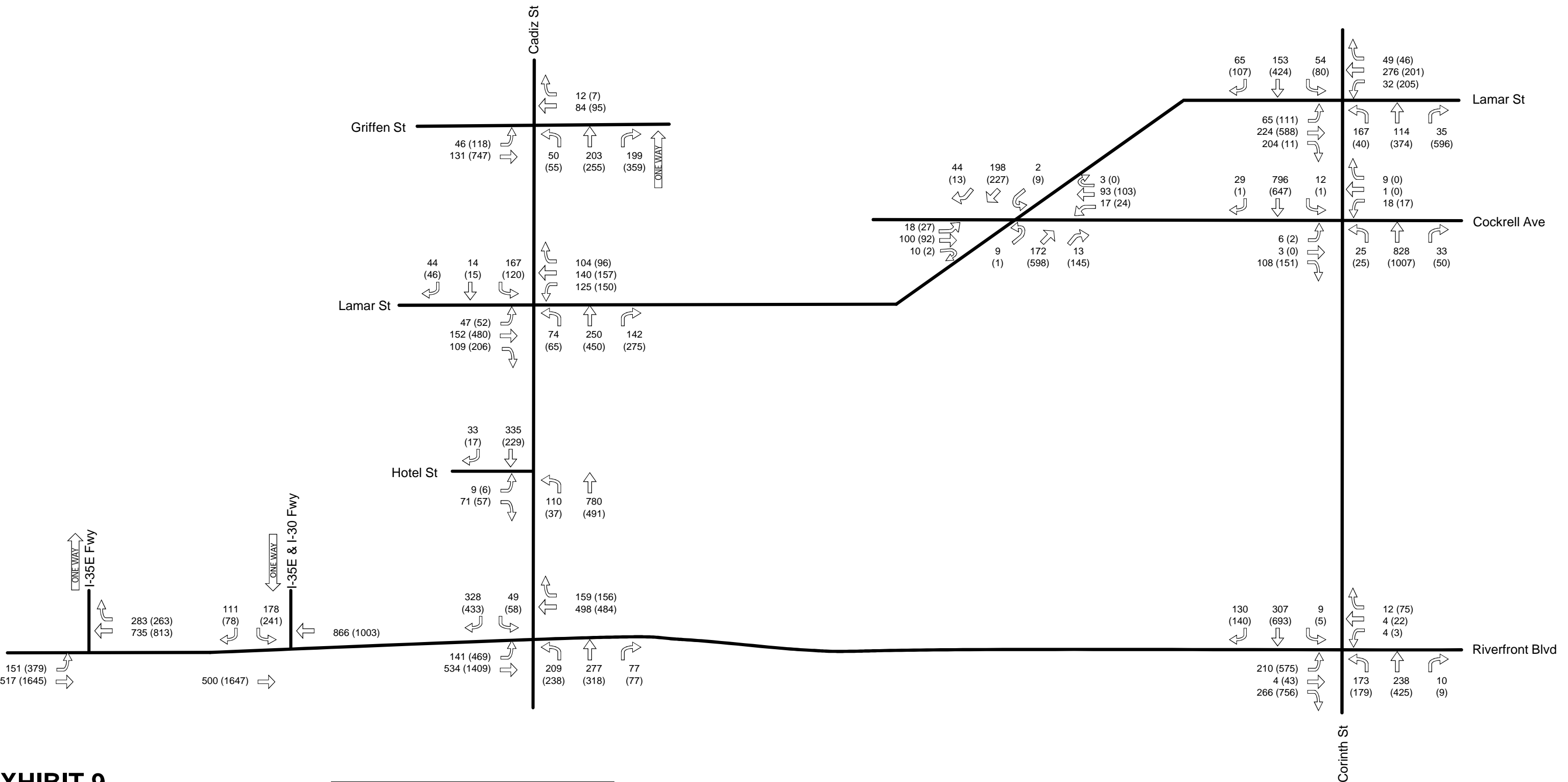


**EXHIBIT 8**  
 2020 Background Plus Site-Generated Traffic Volumes  
 EOT - Dallas, Texas

**LEGEND:**  
 X (Y)  
 X = Weekend Peak Hour Turning Movements  
 Y = Weekday PM Peak Hour Turning Movements  
 Volumes may not sum from point to point due to rounding  
 and presence of smaller driveways not included in analysis.



North  
 Not To Scale



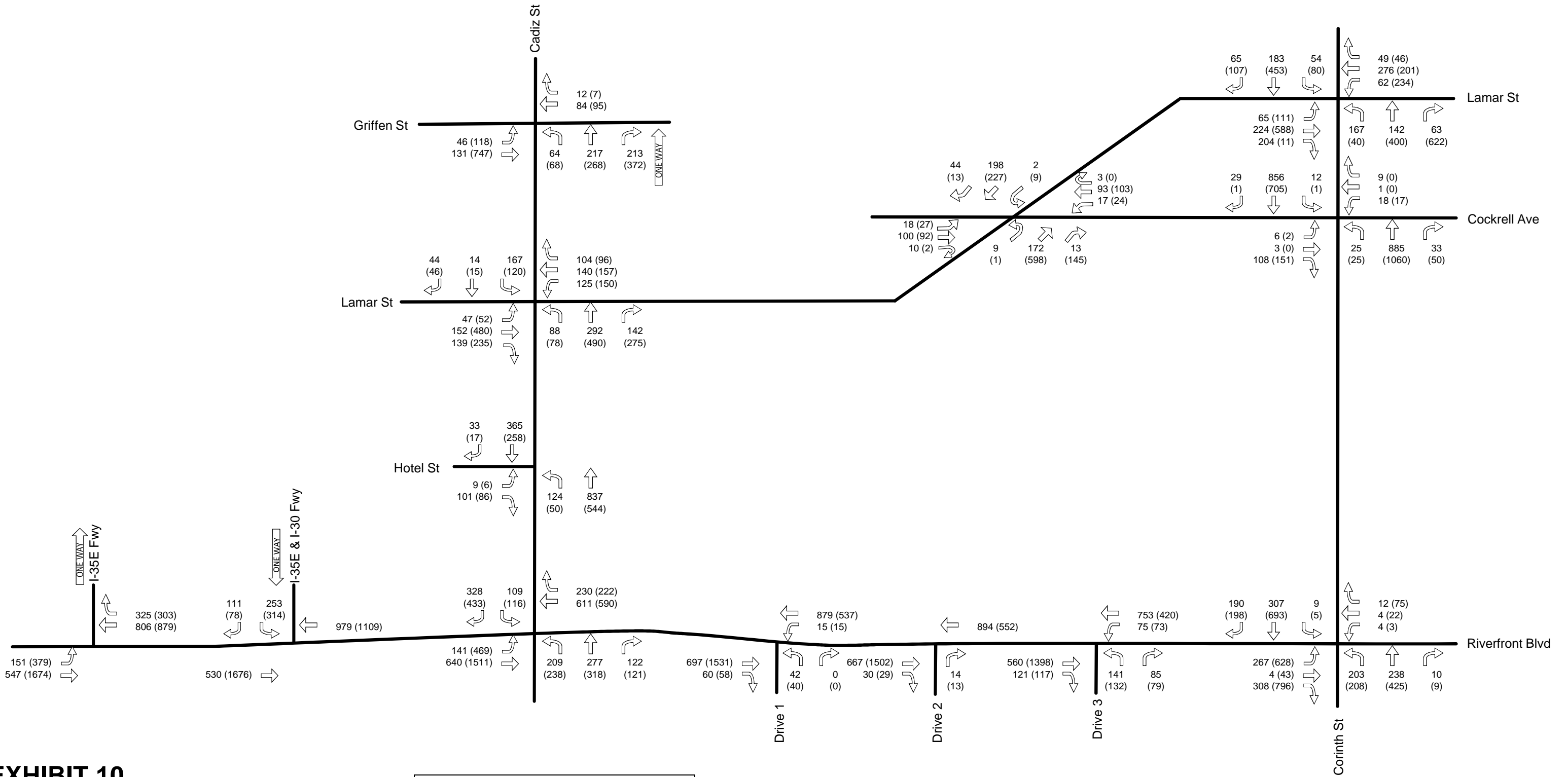
# EXHIBIT 9

2025 Background Traffic Volumes  
EOT - Dallas, Texas



**LEGEND:**  
 X (Y)  
 X = Weekend Peak Hour Turning Movements  
 Y = Weekday PM Peak Hour Turning Movements  
 Volumes may not sum from point to point due to rounding  
 and presence of smaller driveways not included in analysis.

North  
 Not To Scale



# EXHIBIT 10

2025 Background Plus Site-Generated Traffic Volumes  
EOT - Dallas, Texas



**LEGEND:**  
 X (Y)  
 X = Weekend Peak Hour Turning Movements  
 Y = Weekday PM Peak Hour Turning Movements  
 Volumes may not sum from point to point due to rounding  
 and presence of smaller driveways not included in analysis.

North  
 Not To Scale

#### IV. TRAFFIC OPERATIONS ANALYSIS

Kimley-Horn conducted a traffic operations analysis to determine potential capacity deficiencies in the 2018, 2020 and 2025 study years at the study intersections. The acknowledged source for determining overall capacity is the current edition of the *Highway Capacity Manual*.

##### A. Analysis Methodology

Capacity analysis results are listed in terms of Level of Service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a particular street or highway during a specific time interval. It ranges from A (very little delay) to F (long delays and congestion). **Table 3** shows the definition of level of service for signalized and unsignalized intersections.

**Table 3 – Level of Service Definitions**

Level of Service	Signalized Intersection Average Total Delay (sec/veh)	Unsignalized Intersection Average Total Delay (sec/veh)
A	≤10	≤10
B	>10 and ≤20	>10 and ≤15
C	>20 and ≤35	>15 and ≤25
D	>35 and ≤55	>25 and ≤35
E	>55 and ≤80	>35 and ≤50
F	>80	>50

Definitions provided from the Highway Capacity Manual, Special Report 209, Transportation Research Board, 2010.

Study area intersections were analyzed based on average total delay analysis for signalized and unsignalized intersections. For the unsignalized analysis, the level of service (LOS) for a two-way stop-controlled intersection is defined for each movement. Unlike signalized intersections which define LOS for each approach and for the intersection as a whole, LOS for two-way stop-controlled intersections is not defined as a whole.

Signal timings for the signalized intersections are taken from timings provided by the City that are currently implemented today. In the future scenarios, timing adjustments were made to accommodate changes in traffic volumes due to background growth and site traffic, replicating how City staff will periodically review signal operations in the future.

Calculations for the level of service at the key intersections identified for study are provided in the **Appendix**. The analyses assumed the lane geometry and intersection control shown in **Exhibit 3**.



## B. Analysis Results

**Table 4** and **Table 5** show the intersection operational results for the weekend and PM peak hours, respectively.

Table 4 – Traffic Operational Results – Weekend Peak Hour

INTERSECTION	APPROACH	2018 Background Traffic		2020 Background Traffic		2020 Background plus Site Traffic		2025 Background Traffic		2025 Background plus Site Traffic	
		Weekend PH		Weekend PH		Weekend PH		Weekend PH		Weekend PH	
		DELAY (SEC/VB/H)	LOS	DELAY (SEC/VB/H)	LOS	DELAY (SEC/VB/H)	LOS	DELAY (SEC/VB/H)	LOS	DELAY (SEC/VB/H)	LOS
Cadiz St @ Griffin St	EB	5.2	A	5.2	A	5.2	A	5.3	A	5.6	A
	WB	5.0	A	5.0	A	5.0	A	5.1	A	5.4	A
	NB	16.1	B	16.1	B	16.3	B	16.5	B	16.3	B
	<b>Overall</b>	<b>11.5</b>	<b>B</b>	<b>11.6</b>	<b>B</b>	<b>12.0</b>	<b>B</b>	<b>12.2</b>	<b>B</b>	<b>12.5</b>	<b>B</b>
Cadiz St @ Lamar St	EB	18.9	B	19.2	B	21.0	C	23.1	C	24.8	C
	WB	18.3	B	18.6	B	20.3	C	22.3	C	23.9	C
	NB	53.6	D	53.8	D	54.9	D	56.0	E	56.5	E
	SB	56.7	E	57.4	E	61.5	E	66.2	E	71.0	E
	<b>Overall</b>	<b>36.2</b>	<b>D</b>	<b>36.5</b>	<b>D</b>	<b>38.8</b>	<b>D</b>	<b>41.2</b>	<b>D</b>	<b>43.1</b>	<b>D</b>
Cadiz St @ Hotel St	EB	36.6	D	36.6	D	37.6	D	38.9	D	43.5	D
	NB	2.0	A	2.0	A	2.5	A	2.9	A	3.1	A
	SB	3.8	A	3.9	A	4.7	A	5.1	A	5.4	A
	<b>Overall</b>	<b>3.6</b>	<b>A</b>	<b>3.6</b>	<b>A</b>	<b>5.0</b>	<b>A</b>	<b>5.6</b>	<b>A</b>	<b>6.8</b>	<b>A</b>
Cadiz St @ Riverfront Blvd	EB	3.5	A	9.8	A	10.3	B	10.7	B	11.3	B
	WB	9.9	A	19.2	B	19.8	B	20.4	C	21.3	C
	NB	67.7	E	43.2	D	43.7	D	44.5	D	45.1	D
	SB	70.9	E	40.9	D	49.7	D	42.6	D	53.6	D
	<b>Overall</b>	<b>34.2</b>	<b>C</b>	<b>26.6</b>	<b>C</b>	<b>27.5</b>	<b>C</b>	<b>27.2</b>	<b>C</b>	<b>29.1</b>	<b>C</b>
Riverfront Blvd @ Corinth St	EB	36.2	D	36.1	D	37.3	D	36.1	D	38.0	D
	WB	29.2	C	29.1	C	28.1	C	29.4	C	28.6	C
	NB	5.6	A	5.7	A	7.6	A	6.3	A	8.2	A
	SB	11.0	B	11.2	B	14.2	B	12.5	B	15.6	B
	<b>Overall</b>	<b>18.3</b>	<b>B</b>	<b>18.3</b>	<b>B</b>	<b>21.0</b>	<b>C</b>	<b>19.1</b>	<b>B</b>	<b>21.9</b>	<b>C</b>
Corinth St @ Cockrell Ave	EB	10.9	B	10.9	B	10.9	B	11.0	B	11.0	B
	WB	11.0	B	11.1	B	11.1	B	11.4	B	11.4	B
	NB	15.3	B	15.6	B	16.6	B	16.4	B	17.6	B
	SB	12.7	B	12.9	B	13.5	B	13.2	B	13.9	B
	<b>Overall</b>	<b>13.8</b>	<b>B</b>	<b>14.0</b>	<b>B</b>	<b>14.8</b>	<b>B</b>	<b>14.6</b>	<b>B</b>	<b>15.4</b>	<b>B</b>
Corinth St @ Lamar St	EB	24.0	C	24.2	C	25.2	C	24.1	C	25.6	C
	WB	22.0	C	22.1	C	21.6	C	24.3	C	24.0	C
	NB	11.6	B	11.6	B	12.5	B	12.4	B	12.7	B
	SB	13.5	B	13.5	B	14.5	B	14.7	B	14.9	B
	<b>Overall</b>	<b>18.5</b>	<b>B</b>	<b>18.6</b>	<b>B</b>	<b>18.8</b>	<b>B</b>	<b>19.8</b>	<b>B</b>	<b>20.0</b>	<b>B</b>
Riverfront Blvd @ 35E South/30 East Off-Ramp	SB	10.6	B	10.6	B	11.4	B	12.1	B	14.0	B
	<b>Overall</b>	<b>1.4</b>	<b>A</b>	<b>1.4</b>	<b>A</b>	<b>1.9</b>	<b>A</b>	<b>2.1</b>	<b>A</b>	<b>2.7</b>	<b>A</b>
Lamar St @ Cockrell Ave	EB	11.0	B	11.1	B	11.1	B	14.7	B	14.7	B
	WB	10.9	B	11.0	B	11.0	B	14.9	B	14.9	B
	<b>Overall</b>	<b>1.5</b>	<b>A</b>	<b>1.5</b>	<b>A</b>	<b>1.5</b>	<b>A</b>	<b>5.4</b>	<b>A</b>	<b>5.4</b>	<b>A</b>
Riverfront @ Drive 1	NB	-	-	-	-	16.1	C	-	-	17.3	C
	<b>Overall</b>	-	-	-	-	<b>0.5</b>	<b>A</b>	-	-	<b>0.5</b>	<b>A</b>
Riverfront @ Drive 2	NB	-	-	-	-	10.6	B	-	-	11.0	B
	<b>Overall</b>	-	-	-	-	<b>0.1</b>	<b>A</b>	-	-	<b>0.5</b>	<b>A</b>
Riverfront @ Drive 3	NB	-	-	-	-	17.2	C	-	-	18.9	C
	<b>Overall</b>	-	-	-	-	<b>2.9</b>	<b>A</b>	-	-	<b>2.9</b>	<b>A</b>

\* Stop-Controlled Approach  
 - No movements in Time Period

Signalized      Unsignalized

**Table 5 – Traffic Operational Results – Weekday PM Peak Hour**

INTERSECTION	APPROACH	2018 Background Traffic		2020 Background Traffic		2020 Background plus Site Traffic		2025 Background Traffic		2025 Background plus Site Traffic	
		PM Peak Hour		PM Peak Hour		PM Peak Hour		PM Peak Hour		PM Peak Hour	
		DELAY (SEC/VBH)	LOS	DELAY (SEC/VBH)	LOS	DELAY (SEC/VBH)	LOS	DELAY (SEC/VBH)	LOS	DELAY (SEC/VBH)	LOS
Cadiz St @ Griffin St	EB	12.4	B	12.4	B	12.4	B	12.5	B	12.5	B
	WB	10.5	B	10.5	B	10.5	B	10.5	B	10.5	B
	NB	20.0	B	20.2	C	20.5	C	21.3	C	21.7	C
	<b>Overall</b>	<b>15.2</b>	<b>B</b>	<b>15.3</b>	<b>B</b>	<b>15.5</b>	<b>B</b>	<b>16.0</b>	<b>B</b>	<b>16.3</b>	<b>B</b>
Cadiz St @ Lamar St	EB	30.8	C	31.6	C	33.9	C	37.8	D	39.8	D
	WB	26.3	C	26.9	C	28.9	C	32.6	C	34.6	C
	NB	55.3	E	55.9	E	57.9	E	61.5	E	65.6	E
	SB	67.3	E	68.1	E	71.0	E	75.2	E	76.4	E
	<b>Overall</b>	<b>41.9</b>	<b>D</b>	<b>42.6</b>	<b>D</b>	<b>45.0</b>	<b>D</b>	<b>48.9</b>	<b>D</b>	<b>51.8</b>	<b>D</b>
Cadiz St @ Hotel St	EB	36.2	D	36.2	D	36.4	D	37.2	D	39.8	D
	NB	1.4	A	1.4	A	2.0	A	2.4	A	2.6	A
	SB	2.7	A	2.7	A	3.6	A	4.1	A	4.5	A
	<b>Overall</b>	<b>3.0</b>	<b>A</b>	<b>3.0</b>	<b>A</b>	<b>4.9</b>	<b>A</b>	<b>5.5</b>	<b>A</b>	<b>6.7</b>	<b>A</b>
Cadiz St @ Riverfront Blvd	EB	4.5	A	12.4	B	13.2	B	14.3	B	15.4	B
	WB	9.8	A	19.1	B	19.7	B	20.3	C	21.2	C
	NB	74.8	E	45.2	D	45.4	D	45.6	D	46.3	D
	SB	88.9	F	41.4	D	45.5	D	46.5	D	67.6	E
	<b>Overall</b>	<b>28.0</b>	<b>C</b>	<b>22.7</b>	<b>C</b>	<b>23.9</b>	<b>C</b>	<b>25.1</b>	<b>C</b>	<b>28.9</b>	<b>C</b>
Riverfront Blvd @ Corinth St	EB	103.7	F	45.3	D	61.4	E	60.7	E	82.7	F
	WB	25.1	C	18.8	B	19.1	B	19.3	B	19.5	B
	NB	14.4	B	25.6	C	25.9	C	27.7	C	29.8	C
	SB	22.9	C	37.3	D	37.5	D	38.8	D	38.8	D
	<b>Overall</b>	<b>59.1</b>	<b>E</b>	<b>38.1</b>	<b>D</b>	<b>45.9</b>	<b>D</b>	<b>46.1</b>	<b>D</b>	<b>57.1</b>	<b>E</b>
Corinth St @ Cockrell Ave	EB	27.1	C	28.8	C	28.2	C	28.5	C	28.5	C
	WB	22.7	C	24.4	C	24.0	C	24.1	C	24.1	C
	NB	10.4	B	11.7	B	12.5	B	12.5	B	13.0	B
	SB	7.7	A	8.8	A	9.3	A	9.2	A	9.4	A
	<b>Overall</b>	<b>10.9</b>	<b>B</b>	<b>12.2</b>	<b>B</b>	<b>12.7</b>	<b>B</b>	<b>12.8</b>	<b>B</b>	<b>13.0</b>	<b>B</b>
Corinth St @ Lamar St	EB	31.2	C	40.3	D	40.3	D	45.1	D	45.1	D
	WB	24.2	C	31.5	C	33.8	C	34.2	C	37.8	D
	NB	169.3	F	91.6	F	104.2	F	106.0	F	118.5	F
	SB	26.2	C	23.3	C	23.6	C	23.5	C	23.8	C
	<b>Overall</b>	<b>82.6</b>	<b>F</b>	<b>55.1</b>	<b>E</b>	<b>60.6</b>	<b>E</b>	<b>60.7</b>	<b>E</b>	<b>66.1</b>	<b>E</b>
Riverfront Blvd @ 35E South/30 East Off-Ramp	SB	15.0	B	15.2	C	20.3	C	28.6	D	54.9	F
	<b>Overall</b>	<b>1.2</b>	<b>A</b>	<b>1.2</b>	<b>A</b>	<b>2.0</b>	<b>A</b>	<b>3.1</b>	<b>A</b>	<b>6.8</b>	<b>A</b>
Lamar St @ Cockrell Ave	EB	14.8	B	15.1	C	15.1	C	44.0	E	44.0	E
	WB	20.8	C	21.3	C	21.3	C	51.0	F	51.0	F
	<b>Overall</b>	<b>1.2</b>	<b>A</b>	<b>1.2</b>	<b>A</b>	<b>1.2</b>	<b>A</b>	<b>9.6</b>	<b>A</b>	<b>9.6</b>	<b>A</b>
Riverfront @ Drive 1	NB	-	-	-	-	39.8	E	-	-	47.9	E
	<b>Overall</b>	-	-	-	-	<b>0.9</b>	<b>A</b>	-	-	<b>1.0</b>	<b>A</b>
Riverfront @ Drive 2	NB	-	-	-	-	16.0	C	-	-	17.1	C
	<b>Overall</b>	-	-	-	-	<b>0.1</b>	<b>A</b>	-	-	<b>0.1</b>	<b>A</b>
Riverfront @ Drive 3	NB	-	-	-	-	66.1	F	-	-	95.3	F
	<b>Overall</b>	-	-	-	-	<b>7.4</b>	<b>A</b>	-	-	<b>9.6</b>	<b>A</b>

\* Stop-Controlled Approach  
 - No movements in Time Period

Signalized      Unsignalized

**C. 2018 Existing Traffic Operations**

The analysis of the 2018 existing traffic operations shows the signalized intersections operating with minor delay during weekend peak hour and moderate delays in the weekday PM peak hour. The intersections of Corinth Street and Cockrell Street, Cadiz Street and Griffin Street and that of Cadiz Street and Hotel Street operate at LOS B or better during both peak hours. The intersections of Corinth Street and Riverfront Boulevard, and that of Corinth Street and Lamar Street operate at a LOS E or worse during weekday PM peak hour but LOS B during weekend peak hour. Cadiz Street and Lamar Street operates at a LOS D during both peak hours. Cadiz Street and Riverfront Boulevard operates at a LOS C during both peak hours.

All but one of the approaches to the unsignalized intersections operate at LOS B. The westbound approach to the intersection of Lamar Street and Cockrell Avenue operates at LOS C during the weekday PM peak hour but operates at a LOS B during the weekend peak hour.

**D. 2020 Background Traffic Operations**

The signalized intersections during the weekend peak hour has negligible additional delay from the existing condition. The intersections have excess capacity at the intersections during the Saturday peak hour and perform with minor delays. The total delay for the intersection of Cadiz Street and Riverfront Boulevard was reduced by signal timing changes. The signalized intersections during the PM peak hour perform at equal or better level of service. The LOS improves due to signal timing adjustments that were made to accommodate changes in traffic volumes due to background growth and site traffic. These adjustments are completed to replicate how City staff will periodically review signal operations in the future. The improvement is significant at the intersections of Riverfront Boulevard and Corinth Street and that of Corinth Street and Lamar Street. This improvement may be due to the many recent construction activities, detours, and traffic pattern changes in the area and that the timing has not be updated in conjunction with these projects.

The unsignalized intersections also experience negligible delay changes with the added years of background traffic growth. There are no changes in level of service for the weekend peak hour. The LOS for the EB approach of Lamar Street and Cockrell changes from LOS B to LOS C during the weekday PM peak hour. However, this is because the existing delay sits just below the LOC C threshold; the additional delay is only 3 tenths of a second.

**E. 2020 Background Plus Site-Generated Traffic Operations**

The addition of the site-generated traffic to the 2020 background traffic results in some additional delay at the existing signalized intersections, however there are no changes in LOS during both peak hours. All but the intersection of Corinth Street and Lamar Street

have LOS in the favorable range of operations; Corinth Street and Lamar Street remains a LOS E.

With the addition of site-generated traffic, there are no changes in level of service in both peak hours at the unsignalized intersections. All unsignalized intersection approaches operate within favorable conditions.

The site driveways 1, 2 and 3 operate at LOS C or better during the weekend peak hour. During the weekday PM peak hour, drive 1 and 2 operate at a LOS E and LOS C, respectively. Drive 3 has a LOS F with a delay of 66 seconds due to the high volume of vehicles on Riverfront Boulevard and its proximity to the development site's parking lot.

#### **F. 2025 Background Traffic Operations**

The analysis of the 2025 background traffic operations shows the signalized intersections have no changes in level of service with the addition of five more years of background traffic growth from the 2020 Background traffic.

For the unsignalized approaches of the study intersections, there are changes in level of service with the additional background traffic. There are no changes in level of service during the weekend peak hour, but during the PM peak hour the southbound approach on the freeway off-ramp intersecting with Riverfront Boulevard changes from a LOS C to a LOS D. The intersection of Lamar Street and Cockrell Avenue has more significant additional delay. However, the entirety of this delay is due to the trip distribution of the Texas Bullet Train station as none of the Texas Odyssey traffic is routed through this intersection. The eastbound and westbound approaches change from LOS C to LOS E and LOS C to LOS F, respectively.

#### **G. 2025 Background Plus Site-Generated Traffic Operations**

The addition of the site-generated traffic to the 2025 background traffic results in some additional delay at the existing signalized intersections. All the intersections remain at the same LOS as the 2025 background traffic except for the intersection of Riverfront Boulevard and Corinth Street. The intersection weekend peak hour and the weekday PM peak hour change from LOS B to LOS C and LOS D to LOS E, respectively.

With the addition of site-generated traffic, there are no changes in level of service during the weekend peak hour at the unsignalized intersections, and all approaches operate with a LOS B. During the weekday PM peak hour, the southbound approach on the freeway off-ramp intersecting with Riverfront Boulevard changes from a LOS D to a LOS F, with a delay of 55 seconds. This delay is typical and expected for a stop control approach entering onto a Principal Arterial during the PM peak hour. The HCM methodology for unsignalized intersections was originally designed to analyze low to moderate volume locations where the traffic is, generally, evenly distributed throughout

the intersection. However, for unsignalized locations located on major thoroughfares, the methodology is deficient. Although a LOS C or better is desirable, LOS F commonly results and cannot be operationally mitigated unless a traffic signal is installed. Since no alternative analysis methodology exists, the results directly obtained from the HCM calculations are presented. It is recommended that analysis results of this location be taken in the context of day-to-day experience rather than an absolute determination of inadequacy.

The site driveways 1, 2 and 3 operate at LOS C or better during the weekend peak hour. However, during the weekday PM peak hour, drive 1 and 2 operate at a LOS E and LOS C, respectively. Drive 3 continues to have a LOS F with a delay with 95 seconds due to the high volume of vehicles on riverfront boulevard and its proximity to the development site's parking lot.

## H. Link Volume Analysis

The link capacity analysis examines the operating conditions of roadway links rather than intersections, using the daily and peak hour volumes passing a fixed point. The operating condition is defined by the ratio of link volume to link capacity, or V/C. The V/C of the different roadway links that would be impacted by the proposed development's traffic was calculated for the 2018 existing traffic, 2020 background and background plus site traffic, 2025 background and background plus site traffic scenarios. The daily link capacity for each roadway is taken from the NCTCOG model capacity volumes, with a capacity of 775 vphpl for a divided arterial such as Riverfront Boulevard. Corinth Street changes its capacity as it crosses Riverfront Boulevard because it changes from a Minor Arterial to a Principal Arterial. North of Riverfront Boulevard, Corinth Street has a capacity of 775 vphpl, and south of Riverfront Boulevard its capacity is 825 vphpl. Cadiz Street has a capacity of 775 vphpl serving as an outer business district Minor Arterial.

The link analyses, displayed below in **Table 6**, show that Riverfront Boulevard currently operates at LOS C. With the addition of background traffic, which includes the Texas Central Train Station and a 1% growth rate, this link remains at LOS C for both the 2020 and 2025 background scenarios. After site-generated traffic is added to the network, Riverfront Boulevard changes to LOS D in the 2025 traffic scenario.

Corinth Street, north of Riverfront Boulevard currently operates at LOS E and with the addition of background traffic, this link becomes a LOS F by 2025. When the site generated traffic is added to the background volumes, the link performs at a LOS F in 2020. The link is a divided minor arterial road that is constrained to one lane in each direction. The link is already very near full capacity and because it travels underneath the existing railway is not feasible to widen.

Cadiz Street currently operates at LOS A/B. With the addition of background and site-generated traffic, the link continues to operate optimally and remains at LOS A/B for each of the 2020 and 2025 scenarios.

Corinth Street, south of Riverfront Boulevard operates at a LOS C and do so through the 2025 background plus site-generated traffic scenario.

**Table 6 – Link Operational Results**

Roadway Link		2018 Existing			2020 Background					2020 Site-Generated		2020 Background+Site		
From	To	Volume	V/C Ratio	LOS	Volume	Daily Volume	Volume	V/C Ratio	LOS	Assignment	Daily Volume	Volume	V/C Ratio	LOS
<b>Riverfront Boulevard</b> Cadiz St to Corinth St		14,814	0.48	C	Bullet Train Station 0.0%	0	15,112	0.49	C	50.0%	4,207	19,319	0.62	C
Volume Limit 4 Lanes = 31,000		1% growth for 2 years												
<b>Corinth Street</b> Lamar St to Riverfront Blvd		16,419	0.97	E	Bullet Train Station 0.0%	0	16,749	0.99	E	22.5%	1,893	18,642	1.10	F
Volume Limit 2 Lanes = 17,000		1% growth for 2 years												
<b>Corinth Street</b> Riverfront Blvd to 8th St		14,751	0.48	C	Bullet Train Station 0.0%	0	15,047	0.49	C	20.0%	1,683	16,730	0.54	C
Volume Limit 4 Lanes = 31,000		1% growth for 2 years												
<b>Cadiz Street</b> Riverfront Blvd to Hotel St		10,885	0.35	A/B	Bullet Train Station 0.0%	0	11,104	0.36	A/B	12.5%	1,052	12,156	0.39	A/B
Volume Limit 4 Lanes = 31,000		1% growth for 2 years												
Roadway Link		2025 Background							2025 Site-Generated		2025 Background+Site			
From	To	Volume	Daily Volume	Volume	V/C Ratio	LOS	Assignment	Daily Volume	Volume	V/C Ratio	LOS			
<b>Riverfront Boulevard</b> Cadiz St to Corinth St				Bullet Train Station 10.0%	1,096	16,963	0.55	C	50.0%	4,207	21,170	0.68	D	
Volume Limit 4 Lanes = 31,000		1% growth for 5 additional years												
<b>Corinth Street</b> Lamar St to Riverfront Blvd				Bullet Train Station 0.0%	0	17,587	1.03	F	22.5%	1,893	19,480	1.15	F	
Volume Limit 2 Lanes = 17,000		1% growth for 5 additional years												
<b>Corinth Street</b> Riverfront Blvd to 8th St				Bullet Train Station 10.0%	1,096	16,896	0.55	C	20.0%	1,683	18,579	0.60	C	
Volume Limit 4 Lanes = 31,000		1% growth for 5 additional years												
<b>Cadiz Street</b> Riverfront Blvd to Hotel St				Bullet Train Station 15.0%	1,644	12,748	0.41	A/B	5.0%	421	13,169	0.42	A/B	
Volume Limit 4 Lanes = 31,000		1% growth for 2 years												

Volume Limit Based on NCTCOG DFWRM Hourly Capacity Per Lane

**V. MITIGATION ANALYSIS**

The intersection of Corinth Street and Lamar Street was selected for a Mitigation Analysis due to the intersection approaches reaching LOS E during the 2020 and 2025 weekday PM peak hour scenarios and having the overall highest intersection delay. The northbound approach operates at a LOS F where the other three approaches operate with favorable LOS. The intersection of Corinth Street and Riverfront Boulevard was also selected for analysis. The eastbound approach operates with a LOS F and the intersection operates at a LOS E during the weekday PM peak hour in 2025.

**A. Lane Geometry – Corinth Street and Lamar Street**

The intersection of Corinth Street and Lamar Street northbound approach is approximately 40’ wide with one left turn lane, 2 through lanes, and one through-right shared lane. The intersection has 622 right-turning vehicles, whereas it only has 400 through vehicles. The intersection could dedicate the through-right turn lane as a right-turn lane and the adjacent through lane as a through-right shared lane to accommodate the heavy right turn movement. The worst-case scenario from the analysis recorded in Section IV of this report was the PM peak hour of the 2025 background plus site traffic scenario where the intersection as a whole experienced LOS E and the northbound approach experienced LOS F. The analysis below, shown in **Table 7**, uses these same volumes with the northbound approach having a left turn lane, one through lane, one through-right lane and one dedicated right-turn lane.

**Table 7 – Mitigation Analysis Results – Corinth Street and Lamar St**

INTERSECTION	APPROACH	2025 Background Plus Site Weekday PM			
		AS PROPOSED		WITH MITIGATIONS	
		DELAY (SEC/VEH)	LOS	DELAY (SEC/VEH)	LOS
Corinth St @ Lamar St	EB	45.1	D	45.1	D
	WB	37.8	D	37.8	D
	NB	118.5	F	38.7	D
	SB	23.8	C	23.4	C
	<b>Overall</b>	<b>66.1</b>	<b>E</b>	<b>36.7</b>	<b>D</b>

After the intersection of Corinth Street and Lamar Street is restriped to have the new northbound approach configuration – with no other improvements made – all approaches operate at LOS D or better during the worst-case scenario analyzed in this report.



**B. Signal Retiming – Riverfront Boulevard and Corinth Street**

The intersection of Riverfront Boulevard and Corinth Street currently operates at LOS E during the weekday PM peak hour in 2025. The eastbound approach to the intersection, with approximately 7% increase in volume due to site traffic, changes from 60.7 seconds of delay (LOS E) to 82.7 seconds of delay (LOS F).

The traffic signal at the intersection currently operates on a 130-second cycle. 85 seconds of green time are dedicated to the Corinth Street approaches, and the remaining 45 seconds are dedicated to the Riverfront Boulevard approaches. The mitigation performed for this intersection reduced the cycle length from 130 seconds to 90 seconds. The retiming also optimized the timing to dedicate 40 seconds to Corinth Street and 50 seconds to Riverfront Boulevard. The results are summarized below in **Table 8**.

**Table 8 – Mitigation Analysis Results – Riverfront Boulevard and Corinth St**

INTERSECTION	APPROACH	2025 Background Plus Site Weekday PM			
		AS PROPOSED		WITH MITIGATIONS	
		DELAY (SEC/VEH)	LOS	DELAY (SEC/VEH)	LOS
Riverfront Blvd @ Corinth St	NB	82.7	F	42.4	D
	EB	19.5	B	11.8	B
	WB	29.8	C	32.2	C
	SB	38.8	D	45.0	D
	<b>Overall</b>	<b>57.1</b>	<b>E</b>	<b>40.0</b>	<b>D</b>

After the intersection of Riverfront Boulevard and Corinth Street is retimed, the delay experienced by eastbound drivers is improved by 40 seconds in the 2025 scenario. The overall intersection improves from an operational LOS E to LOS D and the intersection delay reduced by 17 seconds.

## VI. CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis presented in this report, the proposed Texas Odyssey development, located on Riverfront Boulevard in Dallas, TX, can be successfully incorporated into the surrounding roadway network. The proposed site driveways provide a reasonable level of access for the development. The site-generated traffic does not significantly affect the existing vehicle traffic operations of the nearby intersections.

The intersection of Corinth Street and Lamar Street northbound approach is approximately 40' wide with one left turn lane, 2 through lanes, and one through-right shared lane. The intersection has a heavy right-turning movement, whereas it has a relatively light through movement. The right turning movement has an excessive delay due to having only one lane to turn from and competing with through vehicles for position in the shared lane. It is recommended that the intersection be reconfigured to dedicate the through-right turn lane as a right-turn only lane and the adjacent through lane as a through-right shared lane to accommodate the heavy right turn movement.

On Riverfront Boulevard at Drive 1 (the western driveway):

1. Construct a westbound left-turn lane.
2. Construct an eastbound right-turn lane to prevent the right-hook conflict between bicyclists in the bike lane and right-turning vehicles.

On Riverfront Boulevard at Drive 2 (the central driveway):

1. Construct an eastbound right-turn lane to prevent the right-hook conflict between bicyclists in the bike lane and right-turning vehicles.

On Riverfront Boulevard at Drive 3 (the eastern driveway):

1. Construct a westbound left-turn lane.
2. Construct an eastbound right-turn lane to prevent the right-hook conflict between bicyclists in the bike lane and right-turning vehicles.