



305 S. Congress

Traffic Impact Analysis

Austin, Texas

First Submittal: July 21, 2020

Second Submittal: March 5, 2021

Final Submittal: March 9, 2022

305 S. Congress

Traffic Impact Analysis

Austin, Texas

First Submittal: July 21, 2020

Second Submittal: March 3, 2021

Final Submittal: March 9, 2022

Prepared for

The Cox Family, Endeavor Real Estate Group,
and their affiliates

Prepared by

HDR Engineering, Inc.

Texas P.E. Firm Registration No. F-754

504 Lavaca Street, Suite 900

Austin, Texas 78701 USA

Telephone: 512 904-3700

Website: hdrinc.com

This page is intentionally left blank.

Certification Statement

I hereby certify that this report complies with Ordinance requirements and applicable technical requirements of the City of Austin and is complete and accurate to the best of my knowledge.

I do hereby certify that the engineering work being submitted herein complies with all provisions of the Texas Engineering Practice Act. I hereby acknowledge that any misrepresentation regarding this certification constitutes a violation of the Act, and may result in criminal, civil and/or administrative penalties against me, as authorized by the Act.

Kathleen G. Smith

(Signature of Responsible Engineer) Texas P.E. #

03.09.2022

Date

Kathleen G. Smith

Signature of Submitter

03.09.2022

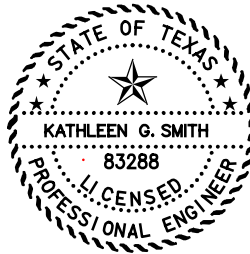
Date

Kathleen G. Smith

Printed Name of Submitter

03.09.2022

Date



This page is intentionally left blank.

Contents

Introduction.....	9
Site and Access Characteristics	9
Existing Thoroughfare System.....	9
Traffic Analysis	18
2020 Existing Conditions.....	21
2029 Forecasted with Site Generated Traffic Conditions	33
Site Generated Traffic	33
Analysis Assumptions	33
Directional Distribution	35
Intersection Analysis	39
Level of Service Summary	49
Active-Modes and Transit-Connectivity	52
Access Management Analysis and Queuing Analysis.....	52
Recommendations	53
References.....	78

Tables

Table 1. Signalized Intersection: Level of Service Measurement and Qualitative Descriptions.....	19
Table 2. Unsignalized Intersection: Level of Service Measurement.....	20
Table 3. Calibration Summary – AM Peak.....	22
Table 4. Calibration Summary – PM Peak.....	22
Table 5. Summary of Unadjusted Peak Hour Trip Generation	33
Table 6. Summary of Adjusted Peak Hour Trip Generation	35
Table 7. Forecasted Overall Directional Distribution of Site Oriented Traffic	36
Table 8. Overall Level of Service and Delay (sec/veh).....	49
Table 9. Highest Delay Minor Street Approach Level of Service and Delay (sec/veh)	51
Table 10. Summary of Recommended Improvements	53
Table 11. Summary of Improvements.....	54
Table 12. 2029 Intersection Analysis Results for AM Peak.....	58
Table 13. 2029 Intersection Analysis Results for PM Peak.....	68

Figures

Figure 1. Area Location Map.....	10
Figure 2. Conceptual Site Plan	11
Figure 3. Transit Routes.....	12
Figure 4. 2020 Existing Volumes	31
Figure 5. 2029 Forecasted Volumes.....	32
Figure 6. Trip Distribution - AM	37
Figure 7. Trip Distribution - PM	38
Figure 8. Site Volumes.....	47
Figure 9. 2029 Site + Forecasted Volumes	48

Figure 10. Recommended Improvement – BR Reynolds Drive and Cesar Chavez Street	55
Figure 11. Recommended Improvement – Sandra Muraida Way and Cesar Chavez Street.....	56
Figure 12. Recommended Improvement – Congress Avenue Proposed Bike Lane	57

Introduction

The 305 S. Congress development is located on the northeast corner of S. Congress Avenue and Barton Springs Road in Austin, TX, as shown in Figure 1. The development is proposed to consist of the following land uses:

- 1,378 dwelling units of Multi-Family (High-Rise) residential housing
- 275 rooms of Hotel lodging
- 1,495,000 square feet of General Office
- 150,000 square feet of Shopping Center

The lot is currently occupied by the Austin American – Statesman which consists of 333,931 square feet of Printing and Publishing land use.

The proposed development is projected to be completed by 2029.

Site and Access Characteristics

As shown in Figure 2, access to the development is proposed via four access points off of Barton Springs Road Extension and one right-in/right-out driveway on Congress Avenue. All access points on Barton Springs Road Extension are proposed to be full-purpose. Access to the site's parking garage and pick-up/drop-off options will be provided on internal roadways off of Barton Springs Roadway, also shown in Figure 2.

Existing Thoroughfare System

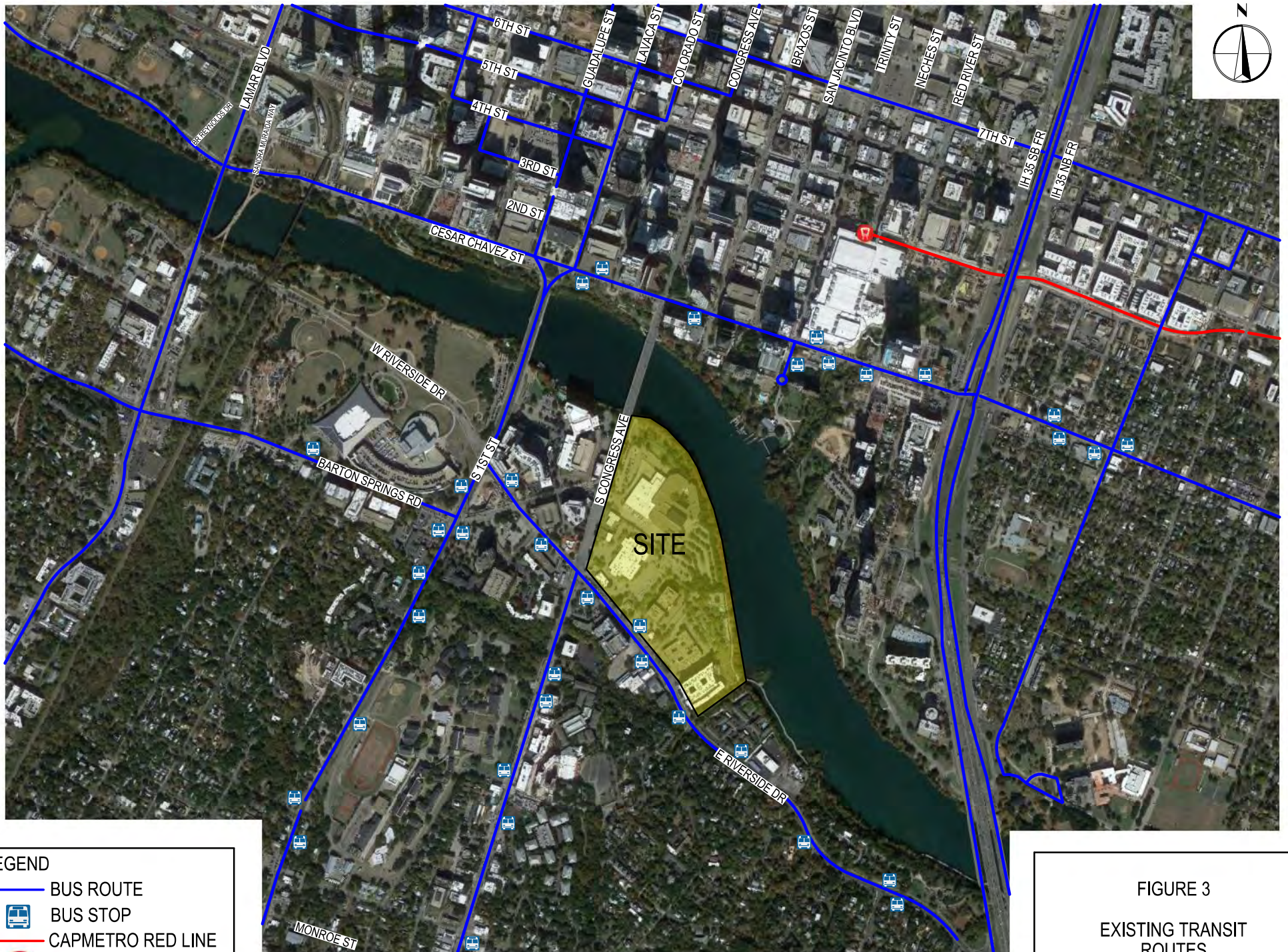
As indicated on the area location map and conceptual site plan (Figures 1 and 2), the project site is located along the northeast corner of S. Congress Avenue and Barton Springs Road in Austin, TX. To adequately describe the significance of the roadways within the vicinity of the site, a further characterization is provided for each. Average daily traffic estimates for these roadways were obtained from TxDOT Traffic Count Database System (TCDS) (Ref. 1) and counts conducted by HDR. The Austin Strategic Mobility Plan (ASMP) (Ref. 2) catalogs the classifications of these major roadways and documents proposed improvements. Capital Metro bus schedules and maps (Ref. 3) were used to identify bus service provided in the vicinity of the site, as shown in Figure 3. Further discussion of bicycle, pedestrian, and transit services will be provided in the Active Modes Analysis study, **which is a supplemental report to this TIA.**







LEGEND
 (X) = SITE DRIVEWAYS

FIGURE 2
 CONCEPTUAL SITE PLAN



LEGEND

- BUS ROUTE
-  BUS STOP
- CAPMETRO RED LINE
-  METRORAIL STATION

Background Map Copyrighted by Google, 2020

FIGURE 3
EXISTING TRANSIT
ROUTES

Lamar Boulevard

The ASMP classifies Lamar Boulevard as a Level 3 street in the vicinity of the site. According to the TxDOT average daily traffic counts, the 2018 ADT on Lamar Boulevard was approximately 46,500 vehicles per day (vpd) north of Riverside Drive. There are currently no bicycle facilities on Lamar Boulevard in the vicinity of the site. It should be noted that the pedestrian bridge east of Sandra Muraida Way was constructed as a parallel route for pedestrians and bicycle traffic using Lamar Boulevard to avoid conflict on the bridge. The ASMP reports that Lamar Boulevard, north of 5th Street and south of Barton Springs Road, is currently being analyzed as part of a corridor study. Improvements recommended from this corridor study could include adding a raised median, consolidating driveways, and adding bicycle facilities. Timeline and source of funding have not been finalized for these improvements; therefore, they were not assumed as a part of this project. There are no additional planned roadway, bicycle, pedestrian or transit improvements recommended on Lamar Boulevard in the vicinity of the site. The posted speed limit on Lamar Boulevard is 35 miles per hour (mph).

BR Reynolds Drive

The ASMP classifies BR Reynolds Drive as a Level 2 street in the vicinity of the site. 24-hour traffic data is not available on BR Reynolds Drive; however, based on a review of peak period counts, approximately 7,200 vpd are estimated on this roadway. There are no planned roadway, bicycle, pedestrian or transit improvements on BR Reynolds Drive in the vicinity of this site. No speed limits are posted on BR Reynolds Drive, but a speed limit of 30 mph was assumed.

Sandra Muraida Way

The ASMP classifies Sandra Muraida Way as a Level 1 street in the vicinity of the site. 24-hour traffic data is not available on Sandra Muraida Way; however, based on a review of peak period counts, approximately 4,700 vpd are estimated on this roadway. There are no planned roadway, bicycle, pedestrian or transit improvements on Sandra Muraida Way in the vicinity of the site; however, it should be noted that the pedestrian bridge east of Sandra Muraida Way was constructed as a parallel route for pedestrians and bicycle traffic using Lamar Boulevard to avoid conflict on the bridge. No speed limits are posted on Sandra Muraida Way, but a speed limit of 30 mph was assumed.

Guadalupe Street

The ASMP classifies Guadalupe Street as a Level 3 street in the vicinity of the site. According to the TxDOT average daily traffic counts, the 2018 ADT on Guadalupe Street was approximately 13,800 vpd north of Cesar Chavez Street. According to the ASMP, Guadalupe Street currently has a buffered bike lane in the vicinity of the site; however, upon review of existing conditions, Guadalupe Street currently has a shared bike lane. The ASMP reports that bicycle facilities on Guadalupe Street are recommended to be improved to provide a protected bike lane in the future. Additionally, the ASMP reports that Guadalupe Street is currently being analyzed as part of a corridor study and project details are to be determined. The improvements recommended from this corridor study could include mobility, safety, and connectivity improvements to accommodate multiple modes of transportation. Timeline and source of funding have not been finalized for

these improvements; therefore, they were not assumed as a part of this project. No speed limits are posted on Guadalupe Street, but a speed limit of 30 mph was assumed.

Lavaca Street

The ASMP classifies Lavaca Street as a Level 3 street in the vicinity of the site. According to the TxDOT average daily traffic counts, the 2018 ADT on Lavaca Street was approximately 12,100 vpd north of 2nd Street. According to the ASMP, Lavaca Street currently has a buffered bike lane in the vicinity of the site; however, upon review of existing conditions, Lavaca Street currently has a bike lane north of Cesar Chavez, and transitions to a buffered bike lane just south of 2nd Street. The ASMP reports that bicycle facilities on Lavaca Street are recommended to be improved to provide a protected bike lane in the future. Additionally, the ASMP reports that Lavaca Street is currently being analyzed as part of a corridor study and project details are to be determined. Timeline and source of funding have not been finalized for these improvements; therefore, they were not assumed as a part of this project. The improvements will include mobility, safety, and connectivity improvements to accommodate multiple modes of transportation. No speed limits are posted on Lavaca Street, but a speed limit of 30 mph was assumed.

S. 1st Street

The ASMP classifies S. 1st Street as a Level 3 street in the vicinity of the site. According to the TxDOT average daily traffic counts, the 2018 ADT on S. 1st Street was approximately 32,200 vpd. According to the ASMP, S. 1st Street currently has a buffered bike lane in the vicinity of the site, and is recommended to be improved to provide a protected bike lane in the future. Additionally, the ASMP reports that S. 1st Street is currently being analyzed as part of a corridor study and project details are to be determined. Timeline and source of funding have not been finalized for these improvements; therefore, they were not assumed as a part of this project. The improvements will include mobility, safety, and connectivity improvements to accommodate multiple modes of transportation. No speed limits are posted on S. 1st Street, but a speed limit of 30 mph was assumed.

Congress Avenue

The ASMP classifies Congress Avenue as a Level 3 street in the vicinity of the site. According to the TxDOT average daily traffic counts, the 2015 ADT on Congress Avenue was approximately 20,300 vpd south of 3rd Street. According to the ASMP, Congress Avenue currently has a shared bike lane in the vicinity of the site, and is recommended to be improved to provide a protected bike lane in the future. Austin Transportation is proposing to install temporary, protected bike lanes on Congress Avenue from Riverside Drive to 11th Street. These temporary bike lanes are expected to transition to permanent facilities in the future. Additionally, the ASMP reports that Congress Avenue is currently being analyzed as part of a corridor study. Improvements recommended from this corridor study could include mobility safety, and connectivity improvements to accommodate multiple modes of transportation, including driving, walking, biking, and taking transit. Timeline and source of funding have not been finalized for these improvements; therefore, they were not assumed as a part of this project. No speed limits are posted on Congress Avenue, but a speed limit of 30 mph was assumed.

IH 35 SB FR

The ASMP classifies IH 35 SB FR as a Level 4 street in the vicinity of the site. According to the TxDOT average daily traffic counts, the 2018 ADT on IH 35 SB FR was approximately 18,200 vpd north of Riverside Drive. The ASMP recommends that IH 35 SB FR be improved to provide bicycle facilities. No timeline or source of funding is provided for these improvements; therefore, they were not assumed as a part of this project. The posted speed limit on IH 35 SB FR is 45 mph.

IH 35 NB FR

The ASMP classifies IH 35 NB FR as a Level 4 street in the vicinity of the site. According to the TxDOT average daily traffic counts, the 2018 ADT on IH 35 NB FR was approximately 37,000 vpd north of Riverside Drive. The ASMP recommends that IH 35 NB FR be improved to provide bicycle facilities. No timeline or source of funding is provided for these improvements; therefore, they were not assumed as a part of this project. The posted speed limit on IH 35 NB FR is 45 mph.

7th Street

The ASMP classifies 7th Street as a Level 3 street in the vicinity of the site. According to the TxDOT average daily traffic counts, the 2018 ADT on 7th Street was approximately 17,700 vpd west of IH 35 SB FR. According to the ASMP, 7th Street currently has a bike lane from Sabine Street to IH 35 SB FR, and is proposed to be improved to a protected lane from Sabine Street to IH 35 SB FR. Additionally, the ASMP notes that 7th Street, between Guadalupe Street and Red River Street, is currently being studied for Corridor Mobility improvements, and project details are to be determined. No speed limits are posted on 7th Street, but a speed limit of 30 miles per hour (mph) was assumed.

6th Street

The ASMP classifies 6th Street as a Level 3 street in the vicinity of the site. According to the TxDOT average daily traffic counts, the 2015 ADT on 6th Street was approximately 14,700 vpd east of Congress Avenue. According to the ASMP, 6th Street currently has a shared bicycle lane in the vicinity of the site, and is recommended to be improved to provide a protected bike lane. No timeline or source of funding is provided for these improvements; therefore, they were not assumed to be complete as part of this project. No speed limits are posted on 6th Street, but a speed limit of 30 miles per hour (mph) was assumed.

5th Street

The ASMP classifies 5th Street as a Level 3 street in the vicinity of the site. According to the TxDOT average daily traffic counts, the 2018 ADT on 5th Street was approximately 9,300 vpd east of Neches Street. According to the ASMP, 5th Street currently has a shared bike lane in the vicinity of the site and is recommended to be improved to provide a protected bike lane. No timeline or source of funding is provided for these improvements. No speed limits are posted on 5th Street, but a speed limit of 30 mph was assumed.

Cesar Chavez St

The ASMP classifies Cesar Chavez Street as a Level 3 street in the vicinity of the site. According to the TxDOT average daily traffic counts, the 2018 ADT on Cesar Chavez Street was approximately 24,900 vpd east of Congress Avenue. According to the ASMP, Cesar Chavez Street currently has a shared bike lane from San Antonio Street to IH 35 SB FR, a wide curb lane from Sandra Muraida Way to San Antonio Street, and a shared bike lane from BR Reynolds Drive to Sandra Muraida Way. The bicycle facilities are recommended to be improved to a protected bike lane along Cesar Chavez Street in the vicinity of the site. Additionally, the ASMP states that Cesar Chavez is proposed to be studied for Corridor Mobility improvements. Improvements recommended from this corridor study could include mobility safety, and connectivity improvements to accommodate multiple modes of transportation, including driving, walking, biking, and taking transit. Timeline and source of funding have not been finalized for these improvements; therefore, they were not assumed as a part of this project. The posted speed limit on Cesar Chavez Street is 35 mph.

Riverside Drive

The ASMP classifies Riverside Drive as a Level 3 street in the vicinity of the site. According to the TxDOT average daily traffic counts, the 2018 ADT on Riverside Drive was approximately 30,000 vpd west of IH 35 SB FR. According to the ASMP, Riverside Drive currently has a shared bike lane from Lamar Boulevard to IH 35 SB FR, and is recommended to be improved to provide a protected bike lane. Additionally, the ASMP states that Riverside Drive, between S. 1st Street and IH 35 is currently being analyzed as part of a corridor study. Improvements recommended from this corridor study will include mobility safety, and connectivity improvements to accommodate multiple modes of transportation, including driving, walking, biking, and taking transit. Timeline and source of funding have not been finalized for these improvements; therefore, they were not assumed as a part of this project. The posted speed limit on Riverside Drive is 35 mph.

Barton Springs Road

The ASMP classifies Barton Springs Road as a Level 3 street from Lamar Boulevard to Congress Avenue, and a Level 2 street from Congress Avenue to Riverside Drive. According to the TxDOT average daily traffic counts, the 2018 ADT on Barton Springs Road was approximately 7,900 vpd west of Congress Avenue. According to the ASMP, Barton Springs Road currently has a bike lane from Lamar Boulevard to Congress Avenue and is recommended to be improved to provide a protected bike lane. Additionally, the ASMP states that Barton Springs Road is proposed to include access management improvements including a raised median, consolidation of driveways, and improvements to bicycle facilities. Timeline and source of funding have not been finalized for these improvements; therefore, they were not assumed as a part of this project. The posted speed limit on Barton Springs Road is 35 mph.

Monroe Street

The ASMP classifies Monroe Street as a Level 2 street in the vicinity of the site. According to the TxDOT average daily traffic counts, the 2015 ADT on Monroe Street

was approximately 1,300 vpd east of S. 1st Street. According to the ASMP, Monroe Street currently has no bicycle facilities, and no improvements to roadway, bicycle, pedestrian, or transit facilities are proposed. The posted speed limit on Monroe Street is 25 mph.

Traffic Analysis

In order to assess the traffic implications of the proposed development, two (2) time periods and four (4) travel conditions were evaluated:

- 2020 Existing Conditions
- 2029 Forecasted Conditions (without site traffic)
- 2029 Forecasted Conditions with Site Traffic without Improvements
- 2029 Forecasted Conditions with Site Traffic with Improvements

Intersections in the vicinity of the site are considered the locations of principal concern because they are the locations of highest traffic conflict and delay. The standard used to evaluate traffic conditions at intersections is level of service (LOS), which is a qualitative measure of the effect of a number of factors such as speed, volume of traffic, geometric features, traffic interruptions, freedom to maneuver, safety, driving comfort, convenience, and operating cost.

Two types of intersections to be evaluated are signalized and unsignalized, which use different criteria for assessment of operating levels. The analysis procedures are described in the following sections.

Signalized Intersection Level of Service

Signalized intersection LOS is defined in terms of delay, which is a direct and/or indirect measure of driver discomfort, frustration, fuel consumption, and lost travel time. The levels of service have been established based on driver acceptability of various delays. The delay for each approach lane group is calculated based on a number of factors including lane geometrics, percentage of trucks, peak hour factor, number of lanes, signal progression, volume, signal green time to total cycle time ratio, roadway grades, parking conditions, and pedestrian flows.

Because delay is a complex measure, its relationship to capacity is also complex. Generally, overall intersection level of service A to D are considered to be acceptable, while overall LOS of E or F is unacceptable.

Table 1 summarizes the levels of service that are appropriate for different levels of average control delay, and a qualitative description for each. The HCM 6 uses the criteria of average control delay. Average control delay includes initial deceleration, delay, queue move-up time, stopped delay, and final acceleration delay (Ref. 4).

Table 1. Signalized Intersection: Level of Service Measurement and Qualitative Descriptions

Level of Service	Control Delay Per Vehicle (sec)	Qualitative Description
A	< 10	Good progression and short cycle lengths
B	> 10 and < 20	Good progression or short cycle lengths, more vehicle stops
C	> 20 and < 35	Fair progression and/or longer cycle lengths, some cycle failures
D	> 35 and < 55	Congestion becomes noticeable, high volume to capacity ratio
E	> 55 and < 80	Limit of acceptable delay, poor progression, long cycles, and/or high volume
F	> 80	Unacceptable to drivers, volume greater than capacity

Unsignalized Intersection Level of Service

Unsignalized intersection LOS is defined in terms of average control delay and, in some cases, v/c ratio. Control delay is that portion of total delay attributed to traffic control measures, either traffic signals or stop signs. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

For two-way stop-controlled intersections, the analysis method assumes that major street through traffic is not affected by minor street flows. Major street left-turning traffic and the traffic on the minor approaches will be affected by opposing movements. Stop or yield signs are used to assign the right-of-way (ROW) to the major street. This designation forces drivers on the controlled street to judgmentally select gaps in the major street flow through which to execute crossing or turning maneuvers. Thus, the capacity of the controlled legs is based upon two factors:

- The distribution of gaps in the major street traffic stream.
- Driver judgment in selecting gaps through which to execute their desired maneuvers.

The LOS procedure computes a capacity for each movement based upon the critical time gap required to complete the maneuver and the volume of traffic that is opposing the movement. The average control delay for any particular movement is calculated as a function of the capacity of the approach and the degree of saturation (v/c ratio). The degree of saturation is defined as the volume for a movement, expressed as an hourly flow rate, divided by the capacity of the movement, expressed as an hourly flow rate. With the HCM 6 methodology, overall intersection LOS is best quantified based on minor street movement average control delay. The HCM 6 methodology adjusts individual movement delay to account for a degree of saturation (v/c ratio) that is greater than 1.0. Those movements are assigned an LOS F, regardless of the average control delay. Engineering judgment must be used to determine which minor street movement controls

overall intersection LOS, and whether unacceptable LOS on minor street movements appropriately reflects unacceptable LOS for the overall intersection.

Table 2 shows the relationship between the average control delay and the LOS. The LOS range for unsignalized intersections is different than that for signalized intersections. This difference is due to the fact that drivers expect different levels of performance from different kinds of transportation facilities. Unsignalized intersections carry less traffic volume than signalized intersections and delays at unsignalized intersections are variable. For these reasons, control delay would be less for an unsignalized intersection than for a signalized intersection.

Analysis was performed using the simulation program "Synchro 10" by Trafficware (Ref. 5), which is based on the procedures contained in the Highway Capacity Manual.

**Table 2. Unsignalized
Intersection: Level of Service
Measurement**

Level of Service	Control Delay Per Vehicle (sec)
A	< 10
B	> 10 and < 15
C	> 15 and < 25
D	> 25 and < 35
E	> 35 and < 50
F	> 50

2020 Existing Conditions

The analysis of existing traffic requires the collection of data on the major roadways and intersections. AM (7-9 AM) and PM (4-6) peak hour turning movement counts were conducted at the following study area intersections on Wednesday, February 2, 2020, while schools were in session. 2020 existing and 2029 forecasted (without site) turning movement counts are presented in Figures 4 and 5 for the following study intersections:

1. Lamar Boulevard and 6th Street
2. Lamar Boulevard and 5th Street
3. BR Reynolds Drive and Cesar Chavez Street
4. Sandra Muraida Way and Cesar Chavez Street
5. Lamar Boulevard and Barton Springs Road
6. Guadalupe Street and Cesar Chavez Street
7. Lavaca Street/S. 1st Street and Cesar Chavez Street
8. S. 1st Street and Riverside Drive
9. S. 1st Street and Barton Springs Road
10. S. 1st Street and Monroe Street
11. Barton Springs Road and Riverside Drive
12. Congress Avenue and 7th Street
13. Congress Avenue and 6th Street
14. Congress Avenue and 5th Street
15. Congress Avenue and Cesar Chavez Street
16. Congress Avenue and Barton Springs Road
17. Congress Avenue and Riverside Drive
18. Congress Avenue and Monroe Street
19. Riverside Drive Access and Riverside Drive
20. IH 35 FR and 7th Street (2 intersections)
21. IH 35 FR and 6th Street (2 intersections)
22. IH 35 FR and Cesar Chavez Street (2 intersections)
23. IH 35 FR and Riverside Drive (2 intersections)

Calibration of Traffic Model

Upon review of peak period counts, adjustments to peak period counts were made to better reflect existing conditions. Field observations of the study intersections conducted by a separate consultant during both the AM and PM peak periods were reviewed to understand the respective operating conditions of each approach. Trips were added to

the certain movements to match the queue length in Synchro to what was observed in the field, as shown in Tables 3 and 4 for the AM and PM peaks, respectively.

Table 3. Calibration Summary – AM Peak

Intersection	Movements Adjusted	95 th Queue Length (feet)	Trips Added	Adjusted 95 th Queue Length (feet)
Lavaca Street and Cesar Chavez Street	NB TH	502	600	1040
S. 1 st Street and Riverside Drive	NB TH	196	600	274
S. 1 st Street and Barton Springs Road	WB LT	74	100	176
	NB TH	349	600	1040
S. 1 st Street and Monroe Street	NB TH	*	600	*
IH 35 SB FR and 7 th Street	SB LT	46	400	553
	EB TH	69	400	136
IH 35 NB FR and 7 th Street	EB LT	92	400	297
	EB TH	105	400	240
IH 35 NB FR and Riverside Drive	WB RT	323	100	571

* - Movement is uncontrolled, no queue length is reported

Table 4. Calibration Summary – PM Peak

Intersection	Movements Adjusted	95 th Queue Length (feet)	Trips Added	Adjusted 95 th Queue Length (feet)
Lamar Boulevard and 6 th Street	SB TH	431	500	838
Lamar Boulevard and 5 th Street	SB TH	411	500	725
BR Reynolds Drive and Cesar Chavez Street	EB LT	296	100	544
Lamar Boulevard and Barton Springs Road	SB TH	732	500	1307
Congress Avenue and Cesar Chavez Street	NB TH	258	400	527
IH 35 NB FR and Cesar Chavez Street	WB TH	291	100	348

Background Traffic

The forecasted traffic was projected by analyzing patterns from TxDOT Historical ADT on local area roadways. For the purposes of traffic analysis, a two (2) percent annual growth rate was assumed and applied to existing traffic volumes to account for the effects of background growth. The use of this growth rate has been approved by the City of Austin in the scope submitted on January 31st, 2020.

Signalized Intersections

Brief descriptions of these intersections follows:

1. Lamar Boulevard and 6th Street
2. Lamar Boulevard and 5th Street
3. BR Reynolds Drive and Cesar Chavez Street
4. Sandra Muraida Way and Cesar Chavez Street
5. Lamar Boulevard and Barton Springs Road
6. Guadalupe Street and Cesar Chavez Street
7. Lavaca Street/S. 1st Street and Cesar Chavez Street
8. S. 1st Street and Riverside Drive
9. S. 1st Street and Barton Springs Road
10. Barton Springs Road and Riverside Drive
11. Congress Avenue and 7th Street
12. Congress Avenue and 6th Street
13. Congress Avenue and 5th Street
14. Congress Avenue and Cesar Chavez Street
15. Congress Avenue and Barton Springs Road
16. Congress Avenue and Riverside Drive
17. Congress Avenue and Monroe Street
18. Barton Springs Road Extension and Riverside Drive
19. IH 35 FR and 7th Street (two intersections)
20. IH 35 FR and 6th Street (two intersections)
21. IH 35 FR and Cesar Chavez Street (two intersections)
22. IH 35 FR and Riverside Drive (two intersections)

1) Lamar Boulevard and 6th Street

The northbound approach of Lamar Boulevard provides one left-turn lane and two through lanes, while the southbound approach provides one through lane and one through/right-turn shared lane. The westbound approach of 6th Street provides two left-turn lanes, three through lanes, and one right-turn lane. This intersection operates at LOS C and E under 2020 existing traffic conditions during the AM and PM peak periods, respectively, assuming the previously mentioned adjustments to peak period counts. Assuming the same intersection geometry, this intersection will operate at LOS D and F under 2029 forecasted (without site) traffic conditions during the AM and PM peak periods, respectively.

2) Lamar Boulevard and 5th Street

The northbound approach of Lamar Boulevard provides one through lane and one through/right-turn shared lane, while the southbound approach provides one left-turn lane and two through lanes. The eastbound approach of 5th Street provides one left-turn lane, three through lanes, one through/right-turn shared lane, and one right-turn lane. This intersection operates at LOS E under 2020 existing traffic conditions during both the AM and PM peak periods, assuming the previously mentioned adjustments to peak period counts. Assuming the same intersection geometry, this intersection will operate at LOS F under 2029 forecasted (without site) traffic conditions during both the AM and PM peak periods.

3) BR Reynolds Drive and Cesar Chavez Street

The southbound approach of BR Reynolds Drive provides one left-turn lane and one right-turn lane. The eastbound approach of Cesar Chavez Street provides one left-turn lane and two through lanes, while the westbound approach provides two through lanes and one right-turn lane. This intersection operates at LOS B and C under 2020 existing traffic conditions during the AM and PM peak periods, respectively, assuming the previously mentioned adjustments to peak period counts. Assuming the same intersection geometry, this intersection will operate at LOS E under 2029 forecasted (without site) traffic conditions during both the AM and PM peak periods.

4) Sandra Muraida Way and Cesar Chavez Street

The southbound approach of Sandra Muraida Way provides one left-turn lane and one right-turn lane. The eastbound approach of Cesar Chavez Street provides two through lanes, while the westbound approach provides one through lane and one through/right-turn shared lane. This intersection operates at LOS D and C under 2020 existing traffic conditions during both the AM and PM peak periods, assuming the previously mentioned adjustments to peak period counts. Assuming the same intersection geometry, this intersection will operate at LOS E and D under 2029 forecasted (without site) traffic conditions during both the AM and PM peak periods.

5) Lamar Boulevard and Barton Springs Road

The northbound approach of Lamar Boulevard provides one left-turn lane, three through lanes, and one right-turn lane, while the southbound approach provides one left-turn lane, two through lanes, and one right-turn lane. The eastbound approach of Barton Springs Road provides two left-turn lanes, two through lanes, and one right-turn lane, while the westbound approach provides two left-turn lanes, two through lanes, and one

channelized right-turn lane. This intersection operates at LOS D and E under 2020 existing traffic conditions during the AM and PM peak periods, respectively, assuming the previously mentioned adjustments to peak period counts. Assuming the same intersection geometry, this intersection will continue to operate at LOS D and E under 2029 forecasted (without site) traffic conditions during the AM and PM peak periods, respectively.

6) Guadalupe Street/S. 1st Street and Cesar Chavez Street

The southbound approach of Guadalupe Street provides one left-turn/through shared lane, two through lanes, and one right-turn lane. The eastbound approach of Cesar Chavez Street provides four through lanes and one right-turn lane, while the westbound approach provides two through lanes. This intersection operates at LOS B and D under 2020 existing traffic conditions during the AM and PM peak periods, respectively, assuming the previously mentioned adjustments to peak period counts. Assuming the same intersection geometry, this intersection will operate at LOS B and E under 2029 forecasted (without site) traffic conditions during the AM and PM peak periods, respectively.

7) Lavaca Street/S. 1st Street and Cesar Chavez Street

The northbound approach provides one left-turn/through shared lane, two through lanes, and one right-turn lane. The eastbound approach of Cesar Chavez Street provides two left-turn lanes and two through lanes, while the westbound approach provides one through lane and one through/right-turn lane. This intersection operates at LOS E and C under 2020 existing traffic conditions during the AM and PM peak periods, respectively, assuming the previously mentioned adjustment to peak period counts. Assuming the same intersection geometry, this intersection will continue to operate at LOS F and C under 2029 forecasted (without site) traffic conditions during the AM and PM peak periods, respectively.

8) S. 1st Street and Riverside Drive

The northbound approach of S. 1st Street provides one left-turn lane, two through lanes, and one through/right-turn shared lane, while the southbound approach provides one left-turn lane, two through lanes, and one through/right-turn shared lane with a channelized right turn. The eastbound and westbound approaches of Riverside Drive both provide one left-turn lane, one through lane, and one through/right-turn shared lane. This intersection operates at LOS C and D under 2020 existing traffic conditions during the AM and PM peak periods, respectively, assuming the previously mentioned adjustments to peak period counts. Assuming the same intersection geometry, this intersection will operate at LOS E and F under 2029 forecasted (without site) traffic conditions during the AM and PM peak periods, respectively.

9) S. 1st Street and Barton Springs Road

The northbound approach of S. 1st Street provides one left-turn lane, two through lanes, and one through/right-turn shared lane, while the southbound approach provides one left-turn lane, two through lanes, and one right-turn lane. The eastbound approach of Barton Springs Road provides two left-turn lanes, one through lane, and one through/right-turn shared lane, while the westbound approach provides one left-turn lane, one through lane, and one through/right-turn shared lane. This intersection operates at

LOS D and C under 2020 existing traffic conditions during the AM and PM peak periods, respectively, assuming the previously mentioned adjustments to peak period counts. Assuming the same intersection geometry, this intersection will operate at LOS E and F under 2029 forecasted (without site) traffic conditions during the AM and PM peak periods, respectively.

10) Barton Springs Road and Riverside Drive

The northeast bound approach of Barton Springs Road provides one left-turn/through shared lane, one through lane, and one right-turn lane while the southwest bound approach provides one left-turn/through shared lane and one through/right-turn shared lane. The northwest bound and southeast bound approaches of Riverside Drive both provide one left-turn lane, one through lane, and one through/right-turn lane. This intersection operates at LOS C and B under 2020 existing traffic conditions during the AM and PM peak periods, respectively, assuming the previously mentioned adjustments to peak period counts. Assuming the same intersection geometry, this intersection will operate at LOS C and D under 2029 forecasted (without site) traffic conditions during the AM and PM peak periods, respectively.

11) Congress Avenue and 7th Street

The northbound approach of Congress Avenue provides two through lanes and one through/right-turn shared lane, while the southbound approach provides one left-turn/through shared lane and two through lanes. The eastbound approach of 7th Street provides one left-turn/through shared lane, two through lanes, and one through/right-turn shared lane. This intersection operates at LOS B under 2020 existing traffic conditions during both the AM and PM peak periods, assuming the previously mentioned adjustments to peak period counts. Assuming the same intersection geometry, this intersection will continue to operate at LOS B under 2029 forecasted (without site) traffic conditions during both the AM and PM peak periods.

12) Congress Avenue and 6th Street

The northbound approach of Congress Avenue provides one left-turn/through shared lane and two through lanes, while the southbound approach provides two through lanes, and one through/right-turn shared lane. The westbound approach of 6th Street provides one left-turn/through shared lane, two through lanes, and one through/right-turn shared lane. This intersection operates at LOS B under 2020 existing traffic conditions during both the AM and PM peak periods, assuming the previously mentioned adjustments to peak period counts. Assuming the same intersection geometry, this intersection will continue to operate at LOS B under 2029 forecasted (without site) traffic conditions during both the AM and PM peak periods.

13) Congress Avenue and 5th Street

The northbound approach of Congress Avenue provides two through lanes and one through/right-turn shared lane, while the southbound approach provides one left-turn/through shared lane and two through lanes. The eastbound approach of 5th Street provides one left-turn lane, two through lanes, and one through/right-turn shared lane. This intersection operates at LOS B under 2020 existing traffic conditions during both the AM and PM peak periods, assuming the previously mentioned adjustments to peak period counts. Assuming the same intersection geometry, this intersection will operate at

LOS B and C under 2029 forecasted (without site) traffic conditions during the AM and PM peak periods, respectively.

14) Congress Avenue and Cesar Chavez Street

The northbound approach of Congress Avenue provides one left-turn/through shared lane, one through lane, one through/right-turn shared lane, and one right-turn lane, while the southbound approach provides one left-turn/through shared lane, one through lane, and one through/right-turn shared lane. The eastbound approach of Cesar Chavez Street provides one left-turn lane, three through lanes, and one right-turn lane, while the westbound approach provides one left-turn lane, one through lane, and one through/right-turn shared lane. This intersection operates at LOS C and F under 2020 existing traffic conditions during the AM and PM peak periods, respectively, assuming the previously mentioned adjustments to peak period counts. Assuming the same intersection geometry, this intersection will operate at LOS D and F under 2029 forecasted (without site) traffic conditions during the AM and PM peak periods, respectively.

15) Congress Avenue and Barton Springs Road/Private Driveway

The northbound approach of Congress Avenue provides one left-turn lane, three through lanes, and one right-turn lane, while the southbound approach provides one left-turn lane, two through lanes, and one through/right-turn shared lane. The eastbound approach of Barton Springs Road provides two left-turn lanes and one through/right-turn shared lane, while the westbound approach provides one left-turn/through shared lane and one right-turn lane. This intersection operates at LOS B under 2020 existing traffic conditions during both the AM and PM peak periods, assuming the previously mentioned adjustments to peak period counts. Assuming the same intersection geometry, this intersection will operate at LOS C under 2029 forecasted (without site) traffic conditions during both the AM and PM peak periods.

16) Congress Avenue and Riverside Drive

The northbound approach of Congress Avenue provides two left-turn lanes, two through lanes, and one through/right-turn shared lane, while the southbound approach provides two left-turn lanes, two through lanes, and one through/right-turn shared lane. The eastbound approach of Riverside Drive provides one left-turn lane, two through lanes, and one right-turn lane, while the westbound approach provides one left-turn lane, one through lane, and one through/right-turn shared lane. This intersection operates at LOS E and D under 2020 existing traffic conditions during both the AM and PM peak periods, assuming the previously mentioned adjustments to peak period counts. Assuming the same intersection geometry, this intersection will operate at LOS F and E under 2029 forecasted (without site) traffic conditions during the AM and PM peak periods, respectively.

17) Congress Avenue and Monroe Street

The northbound and southbound approaches of Congress Avenue both provide one left-turn lane, one through lane, and one through/right-turn shared lane. The eastbound and westbound approaches of Monroe Street both provide one left-turn/through/right-turn shared lane. This intersection operates at LOS B under 2020 existing traffic conditions during both the AM and PM peak periods, assuming the previously mentioned

adjustments to peak period counts. Assuming the same intersection geometry, this intersection will operate at LOS C under 2029 forecasted (without site) traffic conditions during the AM and PM peak periods, respectively.

18) Commercial Driveway/Riverside Drive Access and Riverside Drive

The northbound approach of the commercial driveway and the southbound approach of Riverside Drive Access both provide one left-turn/through/left-turn shared lane. The eastbound and westbound approaches of Riverside Drive both provide one left-turn lane, one through lane, and one through/right-turn shared lane. This intersection operates at LOS A and B under 2020 existing traffic conditions during the AM and PM peak periods, respectively, assuming the previously mentioned adjustments to peak period counts. Assuming the same intersection geometry, this intersection will operate at LOS B and D under 2029 forecasted (without site) traffic conditions during the AM and PM peak periods, respectively.

19) IH 35 SB FR and 7th Street

The southbound approach of IH 35 SB FR provides one left-turn lane and three through lanes. The eastbound approach of 7th Street provides three through lanes and one through/right-turn shared lane. This intersection operates at LOS D and C under 2020 existing traffic conditions during both the AM and PM peak periods, assuming the previously mentioned adjustments to peak period counts. Assuming the same intersection geometry, this intersection will operate at LOS D and C under 2029 forecasted (without site) traffic conditions during the AM and PM peak periods, respectively.

20) IH 35 NB FR and 7th Street

The northbound approach of IH 35 NB FR provides three through lanes and one right-turn lane. The eastbound approach of 7th Street provides two left-turn lanes and two through lanes, while the westbound approach of 7th Street provides two right-turn lanes. This intersection operates at LOS D and C under 2020 existing traffic conditions during the AM and PM peak periods, respectively, assuming the previously mentioned adjustments to peak period counts. Assuming the same intersection geometry, this intersection will operate at LOS E and D under 2029 forecasted (without site) traffic conditions during the AM and PM peak periods, respectively.

21) IH 35 SB FR and 6th Street

The southbound approach of IH 35 SB FR provides one left-turn lane, two through lanes, and one right-turn lane. The westbound approach of 6th Street provides one left-turn lane and two through lanes. This intersection operates at LOS E and D under 2020 existing traffic conditions during the AM and PM peak periods, respectively, assuming the previously mentioned adjustments to peak period counts. Assuming the same intersection geometry, this intersection will operate at LOS F and E under 2029 forecasted (without site) traffic conditions during the AM and PM peak periods, respectively.

22) IH 35 NB FR and 6th Street

The northbound approach of IH 35 NB FR provides one left-turn/through shared lane, two through lanes, and one through/right-turn shared lane. The eastbound approach of 6th Street provides one left-turn lane and one through lane, while the westbound

approach provides one through lane and one through/right-turn shared lane. This intersection operates at LOS C and B under 2020 existing traffic conditions during the AM and PM peak periods, respectively, assuming the previously mentioned adjustments to peak period counts. Assuming the same intersection geometry, this intersection will operate at LOS D and C under 2029 forecasted (without site) traffic conditions during the AM and PM peak periods, respectively.

23) IH 35 SB FR and Cesar Chavez Street

The southbound approach of IH 35 SB FR provides one left-turn/through shared lane, one through/right-turn shared lane, and one right-turn lane. The eastbound approach of Cesar Chavez Street provides two through lanes and one right-turn lane, while the westbound approach provides one left-turn/through shared lane and one through lane. This intersection operates at LOS D under 2020 existing traffic conditions during both the AM and PM peak periods, assuming the previously mentioned adjustments to peak period counts. Assuming the same intersection geometry, this intersection will operate at LOS D and F under 2029 forecasted (without site) traffic conditions during the AM and PM peak periods, respectively.

24) IH 35 NB FR and Cesar Chavez Street

The northbound approach of IH 35 NB FR provides one left-turn lane, one left-turn/through shared lane, one through lane, and one right-turn lane. The eastbound approach of Cesar Chavez Street provides one left-turn lane and one through lane, while the westbound approach provides one through lane and one through/right-turn shared lane. This intersection operates at LOS E and F under 2020 existing traffic conditions during the AM and PM peak periods, respectively, assuming the previously mentioned adjustments to peak period counts. Assuming the same intersection geometry, this intersection will operate at LOS F under 2029 forecasted (without site) traffic conditions during both the AM and PM peak periods.

25) IH 35 SB FR and Riverside Drive

The southbound approach of IH 35 SB FR provides one left-turn lane, one left-turn/through shared lane, one through lane, and one yield-controlled channelized right-turn lane. The eastbound approach of Riverside Drive provides two through lanes and one through/right-turn shared lane, while the westbound approach provides one left-turn lane and two through lanes. This intersection operates at LOS D and E under 2020 existing traffic conditions during the AM and PM peak periods, respectively, assuming the previously mentioned adjustments to peak period counts. Assuming the same intersection geometry, this intersection will operate at LOS F under 2029 forecasted (without site) traffic conditions during both the AM and PM peak periods.

26) IH 35 NB FR and Riverside Drive

The northbound approach of IH 35 NB FR provides one left-turn lane, one left-turn/through shared lane, one through lane, and one yield-controlled channelized right-turn lane. The eastbound approach of Riverside Drive provides one left-turn lane and two through lanes, while the westbound approach provides three through lanes and one channelized, free-flowing, right-turn lane. This intersection operates at LOS F and D under 2020 existing traffic conditions during the AM and PM peak periods, respectively, assuming the previously mentioned adjustments to peak period counts. Assuming the

same intersection geometry, this intersection will operate at LOS F and E under 2029 forecasted (without site) traffic conditions during the AM and PM peak periods, respectively.

Unsignalized Intersections

2019 existing and 2029 forecasted (without site) turning movement volumes are presented in Figures 3 and 4. Brief description of the following unsignalized intersection follows:

- S. 1st Street and Monroe Street

27) S. 1st Street and Monroe Street

The northbound and southbound approaches of S. 1st Street are uncontrolled and both provide one left-turn/through shared lane and one through/right-turn shared lane. The eastbound and westbound approaches of Monroe Street comprise the stop-controlled approaches of this intersection and both provide one left-turn/through/right-turn shared lane. The minor street approach (WB) operates at LOS F under 2020 existing traffic conditions during both the AM and PM peak periods. Assuming the same intersection geometry, the minor street approach (WB) will continue to operate at LOS F under 2029 forecasted (without site) traffic conditions during the AM and PM peak periods, respectively.

Untitled Map
is a description for your map



Background Map Copyrighted by Google, 2020

FIGURE 4
2020 EXISTING VOLUMES

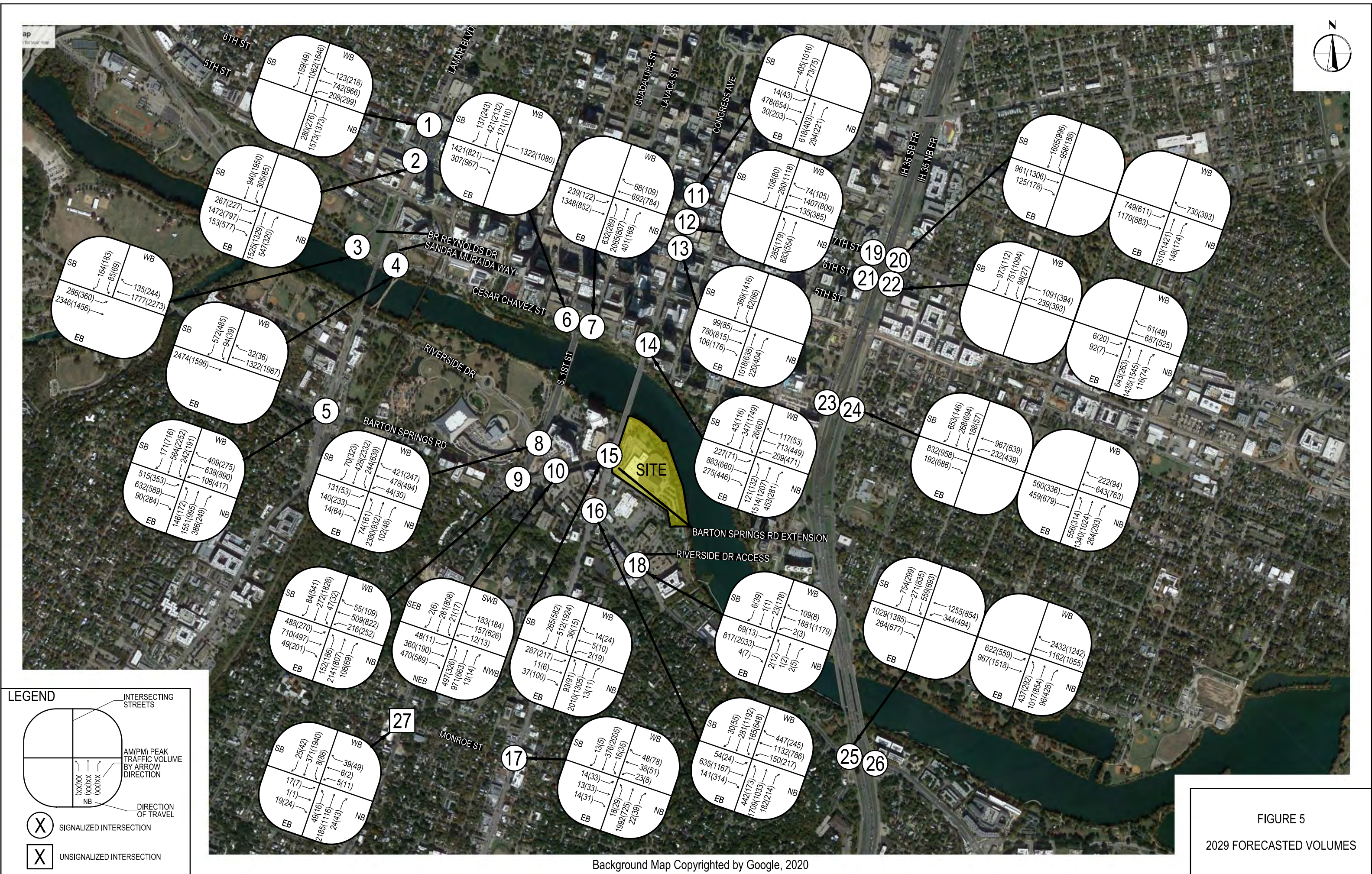


FIGURE 5
2029 FORECASTED VOLUMES

2029 Forecasted with Site Generated Traffic Conditions

The 305 S. Congress development is anticipated to be completed in 2029. This time frame was used to assess the major roadway effects and to facilitate the evaluation of potential improvements. The forecasted traffic was projected using available information. This process was facilitated by using trends established by prior data for the major roadways and intersections in the immediate vicinity of the project site.

Site Generated Traffic

Determining the site generated traffic, or the traffic that will be generated due to the development of the proposed project, was a major element of this analysis. Unadjusted total trips per day, as well as the peak hour traffic associated with the project, were estimated using recommendations and data contained in the Institute of Transportation Engineers Trip Generation Manual, 10th Edition (Ref. 6).

Table 5 provides a detailed summary of the traffic production, which is directly related to the assumed land use activity for the development. As a point of reference, the net unadjusted trips per day for this project were estimated at 29,022 vpd for this development.

Table 5. Summary of Unadjusted Peak Hour Trip Generation

ITE Code	Land Use	Size	24-Hour Two Way Volume	AM Peak Hour		PM Peak Hour	
				Enter	Exit	Enter	Exit
222	Multifamily Housing (High-rise)	1,378 DU	5,641	96	303	291	186
310	Hotel	275 rooms	2,678	78	54	92	88
710	General Office	1,495,000 SF	14,626	1,231	201	238	1,249
820	Shopping Center	150,000 SF	7,921	87	54	352	381
	Total		30,866	1,492	612		

Analysis Assumptions

The traffic impact analysis process involves both the use of primary data and engineering judgment on transferable parameters. Specifically, engineering judgment is required for estimation of background traffic growth, pass-by capture, internal capture, and transit reductions.

Pass-By Capture

Studies have shown that retail land uses will capture between twenty and sixty percent of their traffic as pass-by trips, depending upon their size. It is well documented that many other land uses also experience significant pass-by trip capture, such as drive-in banks and restaurants. The amount of trip reduction that each tract may attribute to the pass by phenomenon will depend directly on the type of land use that is developed. The ITE Trip Generation Handbook (Ref. 7) reports an average pass-by reduction of 34% for the shopping center land use. It should be noted that due to the location of this project, a pass-by reduction would be as a result of pedestrian traffic accessing the site instead of vehicular trips.

Internal Capture/Bicycle/Pedestrian/Transit Reduction

Once the total build-out of proposed land uses occurs, there will be some interaction between the uses within this development. Internal capture is accounted for in two ways. First, to account for internal capture among similar retail land uses in adjacent areas, the sizes may be combined during the trip generation process. Because the equations used in trip generation estimations are logarithmic, the number of trips generated by a site does not increase in direct proportion to an increase in the square footage of a development. By combining retail projects in close proximity to each other, a lower number of trips will be estimated, thereby taking into account the internal capture factor. The second way to account for internal capture is to reduce the expected number of trips directly by some percentage, which reflects expected multipurpose trip-making among different types of land uses, which are in close proximity. As with pass-by trip reductions, internal capture depends on the type and quantity of land uses.

Providing facilities for pedestrians and cyclists to access a development, as well as the provision of transit service to an area, may reduce the expected number of vehicular trips by providing a mode of travel alternative to the private automobile.

Transportation Demand Management (TDM) Reductions

The City of Austin has recently set a target of 50 percent single occupancy vehicles (SOV) travel. A good location at which to start implementation is within downtown areas or other urban settings because there is a mix of land uses where TDM strategies can more easily be implemented. The 305 S. Congress project would lend itself well to implementation of many TDM strategies given its location in the Urban Core of the Austin area. An overall trip reduction of 35 percent due to Transportation Demand Management (TDM) measures was applied for this study. It was identified during the scoping process that the 35 percent reduction would incorporate the above-mentioned reductions. Further discussion of TDM measures will be provided in the TDM Plan, which is a **supplemental report to this TIA**.

Table 6 provides a detailed summary of the adjusted traffic production for the site. The proposed project will generate approximately 18,864 adjusted daily trips upon build-out.

Table 6. Summary of Adjusted Peak Hour Trip Generation

Trip / Reduction Type	Percent Reduction	24-Hour Two Way Volume	AM Peak Hour		PM Peak Hour	
			Enter	Exit	Enter	Exit
Unadjusted Trips	-	29,022	1,205	565	947	1,692
TDM Reduction	35.0%	10,158	422	198	332	592
Total Adjusted Trips		18,864	783	367	615	1,100

Background Traffic

As previously mentioned, a two (2) percent annual growth rate was assumed for this study. In addition, the following projects were included as background traffic and recommended improvements from these studies were taken into consideration:

- The Norwood House Project (SPC-2019-0333C) (not included)
- 1207 South 1st Street (SP-2018-0438C) (not included)
- South Lamar and Riverside Mixed Use (SP-2019-0056C)
- 218 South Lamar (SP-2019-0297C)
- 425 Riverside (SP-2017-0494C)
- Music Lane (SP-2016-0321C)

It should be noted that the Norwood House Project was not included in this study because the only proposed land use on the TIA Determination Worksheet, submitted on June 13th, 2018, was parking; therefore, there was no site traffic to assume. The 1207 South 1st Street project was not included in this study because the development review status was marked as “Withdrawn” on the City of Austin Build + Connect website.

Directional Distribution

The next step involved distribution of the site generated trips to appropriate geographic directions and logical connecting roadways. The major thoroughfares that have a direct bearing on the accessibility of the project have been previously identified. Overall directional distribution of traffic was based on engineering judgment of possible destinations to and from the site, and was reviewed and approved by the City. Forecasted directional distribution of traffic is presented in Table 7 below.

Table 7. Forecasted Overall Directional Distribution of Site Oriented Traffic

Direction/ Roadway	% Overall Distribution (Enter)	% Overall Distribution (Exit)	% Overall Distribution (Enter)	% Overall Distribution (Exit)
	AM		PM	
North IH 35	7.5	17.5	6.0	7.0
South IH 35/East Riverside Drive	14.0	7.0	9.0	15.5
North Congress Avenue	0.5	8.5	16.0	1.5
South Congress Avenue	18.0	4.0	7.5	12.0
North Guadalupe Street/Lavaca Street	6.0	17.5	21.5	8.5
South S. 1 st Street	15.0	4.0	9.5	17.5
North Lamar Boulevard	5.0	15.0	8.0	11.5
South Lamar Boulevard/Barton Springs Road	11.5	1.5	7.5	5.0
West Cesar Chavez Street	10.5	6.0	7.0	5.5
East Cesar Chavez Street	2.0	3.0	0.5	1.0
West Riverside Drive	1.5	4.0	1.5	4.0
Sources/Sinks	8.5	12.0	6.0	11.0
Total	100	100	100	100

Given the total site generated traffic and the directional distribution by approach, the next step in the process is to assign the traffic destined to and from the project to the most likely travel paths, as shown in Figures 6 and 7. This step was performed by investigating a number of alternative travel patterns, as well as ingress/egress points along the project boundaries. Primary consideration was given to the traffic flow and safety of major roadways. This step was also reviewed and approved by the City.



FIGURE 6
TRIP DISTRIBUTION - AM



FIGURE 7
TRIP DISTRIBUTION - PM

Intersection Analysis

The total 2029 traffic demand will be the sum of traffic generated by the proposed project and changes in existing traffic. Total site and site plus forecasted traffic conditions turning movement counts are shown in Figure 8 and 9, respectively. The site plus forecasted condition LOS assumes that all roadway and intersection improvements recommended in this TIA are constructed. Brief descriptions of the intersections follow:

1) Lamar Boulevard and 6th Street

This intersection will operate at LOS D and F under 2029 site plus forecasted traffic conditions during the AM and PM peak periods, respectively. **No improvements are recommended at this intersection as part of this study.** It should be noted that this intersection will continue to operate unacceptably during the PM peak; however, due to ROW constraints on both roadways, improvements are not feasible at this intersection. Additionally, it should also be noted that the addition of site traffic results in an overall delay increase of less than 10% and the LOS does not change from 2029 forecasted (without site) traffic conditions during both peak periods. Site traffic comprises approximately 1.8 and 2.7 percent of total traffic at this intersection during the AM and PM peak periods, respectively.

2) Lamar Boulevard and 5th Street

This intersection will operate at LOS F and E under 2029 site plus forecasted traffic conditions during the AM and PM peak periods, respectively. **No improvements are recommended at this intersection as part of this study.** It should be noted this intersection will continue to operate unacceptably during both peak periods; however, due to ROW constraints on both roadways, improvements are not feasible at this intersection. Additionally, it should also be noted that the addition of site traffic results in an overall delay increase of less than 10% and the LOS does not change from 2029 forecasted (without site) traffic conditions during the AM peak, and the LOS change and decrease in delay during the PM peak is due to the addition of trips on movements operating acceptably. Site traffic comprises approximately 1.8 and 3.2 percent of total traffic at this intersection during the AM and PM peak periods, respectively.

3) BR Reynolds Drive and Cesar Chavez Street

This intersection will operate at LOS E under 2029 site plus forecasted traffic conditions during both the AM and PM peak periods, assuming the following improvements:

- **Extension of the southbound right-turn lane (285-foot storage, 100-foot taper)**
- **Signal timing optimization**

Although the impact of site traffic has not been mitigated for all movements at this intersection, due to ROW constraints on Cesar Chavez Street, additional roadway improvements are not feasible. It should also be noted that the addition of site traffic results in an overall delay increase of less than 10% from 2029 forecasted (without site) traffic conditions during the AM peak. Site traffic comprises approximately 2.9 and 3.2

percent of total traffic at this intersection during the AM and PM peak periods, respectively.

4) Sandra Muraida Way and Cesar Chavez Street

This intersection will operate at LOS E and D under 2029 site plus forecasted traffic conditions during the AM and PM peak periods, respectively, assuming the following improvements:

- **Construction of a westbound right-turn lane (75-foot storage, 50-foot taper)**
- **Signal timing optimization**

It should be noted that the construction of a westbound right-turn lane may have some vertical clearance issues with the pedestrian bridge that goes across Cesar Chavez Street. In addition, the deceleration lane length was minimized to eliminate unnecessary impact to the vegetation on the north side of Cesar Chavez Street. Although the impact of site traffic has not been mitigated for all movements and the intersection still operates unacceptably during the AM peak, due to ROW constraints on Cesar Chavez Street, no additional roadway improvements are feasible at this intersection. Additionally, it should also be noted that the addition of site traffic results in an overall delay increase of less than 10% and the LOS does not change from 2029 forecasted (without site) traffic conditions during the AM peak for this intersection. Site traffic comprises approximately 3.8 and 4.7 percent of total traffic at this intersection during the AM and PM peak periods, respectively.

5) Lamar Boulevard and Barton Springs Road

This intersection will operate at LOS D and F under 2029 site plus forecasted traffic conditions during the AM and PM peak periods, respectively. **No improvements are recommended at this intersection as part of this study.** It should be noted that this intersection will continue to operate unacceptably during the PM peak; however, due to ROW constraints on both roadways improvements are not feasible at this intersection. Site traffic comprises approximately 2.1 percent of total traffic at this intersection during both the AM and PM peak periods.

6) Guadalupe Street and Cesar Chavez Street

This intersection will operate at LOS B and F under 2029 site plus forecasted traffic conditions during the AM and PM peak periods, respectively. **No improvements are recommended at this intersection as part of this study.** It should be noted that this intersection will continue to operate unacceptably during the PM peak; however, due to ROW constraints on both roadways improvements are not feasible at this intersection. An alternative mitigation measure considered was to extend the storage of the eastbound right-turn lane of Guadalupe Street; however, due to pedestrian facilities and vegetation, this improvement is not feasible. Site traffic comprises approximately 6.0 and 6.2 percent of total traffic at this intersection during the AM and PM peak periods, respectively.

7) Lavaca Street and Cesar Chavez Street

This intersection will operate at LOS F and C under 2029 site plus forecasted traffic conditions during the AM and PM peak periods, respectively. **No improvements are recommended at this intersection as part of this study.** It should be noted that this intersection will continue to operate unacceptably during the AM peak; however, due to ROW constraints, roadway improvements are not feasible at this intersection. Site traffic comprises approximately 2.5 and 7.3 percent of total traffic at this intersection during the AM and PM peak periods, respectively.

8) S. 1st Street and Riverside Drive

This intersection will operate at LOS F under 2029 site plus forecasted traffic conditions during the both AM and PM peak periods. **No improvements are recommended at this intersection as part of this study.** It should be noted that this intersection will continue to operate unacceptably during both peak periods; however, due to ROW constraints, roadway improvements are not feasible at this intersection. Site traffic comprises approximately 5.7 and 10.1 percent of total traffic at this intersection during the AM and PM peak periods, respectively.

9) S. 1st Street and Barton Springs Road

This intersection will operate at LOS E and F under 2029 site plus forecasted traffic conditions during the AM and PM peak periods, respectively. **No improvements are recommended at this intersection as part of this study.** It should be noted that this intersection will continue to operate unacceptably during both peak periods; however, due to ROW constraints on both roadways improvements are not feasible at this intersection. Site traffic comprises approximately 7.5 and 8.8 percent of total traffic at this intersection during the AM and PM peak periods, respectively.

10) Barton Springs Road and Riverside Drive

This intersection will operate at LOS C and E under 2029 site plus forecasted traffic conditions during the AM and PM peak periods, respectively. **No improvements are recommended at this intersection as part of this study.** It should be noted that this intersection will operate unacceptably during the PM peak; however, due to ROW constraints on both roadways improvements are not feasible at this intersection. Site traffic comprises approximately 15.0 and 20.9 percent of total traffic at this intersection during the AM and PM peak periods, respectively.

11) Congress Avenue and 7th Street

This intersection will operate at LOS B under 2029 site plus forecasted traffic conditions during the both AM and PM peak periods. **No improvements are recommended at this intersection as part of this study.** Site traffic comprises approximately 2.7 and 4.7 percent of total traffic at this intersection during the AM and PM peak periods, respectively.

12) Congress Avenue and 6th Street

This intersection will operate at LOS B and C under 2029 site plus forecasted traffic conditions during both the AM and PM peak periods, respectively. **No improvements are recommended at this intersection as part of this study.** Site traffic comprises approximately 3.0 and 4.1 percent of total traffic at this intersection during the AM and PM peak periods, respectively.

13) Congress Avenue and 5th Street

This intersection will operate at LOS B and C under 2029 site plus forecasted traffic conditions during the AM and PM peak periods, respectively. **No improvements are recommended at this intersection as part of this study.** Site traffic comprises approximately 3.8 and 4.2 percent of total traffic at this intersection during the AM and PM peak periods, respectively.

14) Congress Avenue and Cesar Chavez Street

This intersection will operate at LOS F under 2029 site plus forecasted traffic conditions during both the AM and PM peak periods. **No improvements are recommended at this intersection as part of this study.** Although the impact of site traffic has not been mitigated for all movements and the intersection will continue to operate unacceptably during the PM peak, due to ROW constraints on both roadways additional improvements are not feasible at this intersection. Site traffic comprises approximately 4.8 and 5.5 percent of total traffic at this intersection during the AM and PM peak periods, respectively.

15) Congress Avenue and Barton Springs Road/Barton Springs Road Extension

Barton Springs Road Extension is a public roadway that will be constructed to public standards between Congress Avenue and the projects eastern boundary. Barton Springs Road Extension will replace the east leg of this intersection and will provide two receiving lanes, one left-turn lane, one through lane, and one through/right-turn shared lane. This intersection will operate at LOS D under 2029 site plus forecasted traffic conditions during both the AM and PM peak periods, assuming the following improvements:

- **Construction of an additional westbound receiving lane**
- **Signal modification**
- **Signal timing optimization**

Although the impact of site traffic has not been mitigated for all movements and the intersection will continue to operate unacceptably during the PM peak, additional improvements are not feasible at this intersection due to ROW constraints on both roadways. The final design of the intersection will be reviewed and approved at the time of site or subdivision submittal, whichever occurs first. Site traffic comprises approximately 18.5 and 18.1 percent of total traffic at this intersection during the AM and PM peak periods, respectively.

16) Congress Avenue and Riverside Drive

This intersection will operate at LOS F under 2029 site plus forecasted traffic conditions during both the AM and PM peak periods. **No improvements are recommended at this intersection as part of this study.** It should be noted that this intersection will continue to operate unacceptably during both peak periods; however, due to ROW constraints on both roadways improvements are not feasible at this intersection. Site traffic comprises approximately 5.4 and 10.1 percent of total traffic at this intersection during the AM and PM peak periods, respectively.

17) Congress Avenue and Monroe Street

This intersection will operate at LOS C under 2029 site plus forecasted traffic conditions during both the AM and PM peak periods. **No improvements are recommended at this intersection as part of this study.** Site traffic comprises approximately 5.2 and 5.5 percent of total traffic at this intersection during the AM and PM peak periods, respectively.

18) Commercial Driveway/Riverside Drive Access and Riverside Drive

This intersection will operate at LOS C and D under 2029 site plus forecasted traffic conditions during the AM and PM peak periods, respectively, assuming the following improvements:

- **Restripe Riverside Drive Access to a four-lane cross-section. The southbound approach of the intersection will provide one left-turn lane and one left-turn/through/right-turn shared lane. The north leg of the intersection will provide one additional receiving lane.**
- **Signal modification**
- **Signal timing optimization**

Although the impact of site traffic has not been mitigated for all movements, additional improvements are not feasible at this intersection due to ROW constraints on both roadways. Final design of the intersection and the proposed pedestrian and bicycle facilities along Riverside Drive Access will be reviewed and approved at the time of site plan or subdivision submittal, whichever occurs first. Site traffic comprises approximately 11.8 and 17.5 percent of total traffic at this intersection during the AM and PM peak periods, respectively.

19) IH 35 SB FR and 7th Street

This intersection will operate at LOS D and C under 2029 site plus forecasted traffic conditions during both the AM and PM peak periods. **No improvements are recommended at this intersection as part of this study.** Site traffic comprises approximately 0.9 and 0.8 percent of total traffic at this intersection during the AM and PM peak periods, respectively.

20) IH 35 NB FR and 7th Street

This intersection will operate at LOS F and D under 2029 site plus forecasted traffic conditions during the AM and PM peak periods, respectively. **No improvements are**

recommended at this intersection as part of this study. It should be noted that this intersection will continue to operate unacceptably during the AM peak; however, due to ROW constraints on both roadways improvements are not feasible at this intersection. Site traffic comprises approximately 1.2 percent of total traffic at this intersection during both the AM and PM peak periods.

21) IH 35 SB FR and 6th Street

This intersection will operate at LOS F and E under 2029 site plus forecasted traffic conditions during the AM and PM peak periods, respectively. **No improvements are recommended at this intersection as part of this study.** It should be noted that this intersection will continue to operate unacceptably during both peak periods; however, due to ROW constraints on both roadways improvements are not feasible at this intersection. Additionally, it should be noted that overall intersection delay decreased compared to 2029 forecasted (without site) conditions during the AM peak due to the addition of trips on movements operating acceptably. Site traffic comprises approximately 0.7 and 0.5 percent of total traffic at this intersection during the AM and PM peak periods, respectively.

22) IH 35 NB FR and 6th Street

This intersection will operate at LOS D and C under 2029 site plus forecasted traffic conditions during the AM and PM peak periods, respectively. **No improvements are recommended at this intersection as part of this study.** Site traffic comprises approximately 1.5 and 1.2 percent of total traffic at this intersection during the AM and PM peak periods, respectively.

23) IH 35 SB FR and Cesar Chavez Street

This intersection will operate at LOS D and F under 2029 site plus forecasted traffic conditions during the AM and PM peak periods, respectively. **No improvements are recommended at this intersection as part of this study.** It should be noted that this intersection will continue to operate unacceptably during the PM peak; however, due to ROW constraints on both roadways improvements are not feasible at this intersection. Site traffic comprises approximately 2.0 and 1.7 percent of total traffic at this intersection during the AM and PM peak periods, respectively.

24) IH 35 NB FR and Cesar Chavez Street

This intersection will operate at LOS F under 2029 site plus forecasted traffic conditions during both the AM and PM peak periods, respectively. **No improvements are recommended at this intersection as part of this study.** It should be noted that this intersection will continue to operate unacceptably during both peak periods; however, due to ROW constraints on both roadways improvements are not feasible at this intersection. Additionally, it should also be noted that the addition of site traffic results in an overall delay increase of less than 10% and the LOS does not change from 2029 forecasted (without site) traffic conditions during the AM peak. Site traffic comprises approximately 1.3 and 0.9 percent of total traffic at this intersection during the AM and PM peak periods, respectively.

25) IH 35 SB FR and Riverside Drive

This intersection will operate at LOS F under 2029 site plus forecasted traffic conditions during both the AM and PM peak periods. **No improvements are recommended at this intersection as part of this study.** It should be noted that this intersection will continue to operate unacceptably during both peak periods; however, due to ROW constraints on both roadways improvements are not feasible at this intersection. Site traffic comprises approximately 3.9 and 4.8 percent of total traffic at this intersection during the AM and PM peak periods, respectively.

26) IH 35 NB FR and Riverside Drive

This intersection will operate at LOS F and E under 2029 site plus forecasted traffic conditions during the AM and PM peak periods, respectively. **No improvements are recommended at this intersection as part of this study.** It should be noted that this intersection will continue to operate unacceptably during both peak periods; however, due to ROW constraints on both roadways improvements are not feasible at this intersection. Additionally, it should also be noted that the addition of site traffic results in an overall delay increase of less than 10% and the LOS does not change from 2029 forecasted (without site) traffic conditions during both peak periods. Site traffic comprises approximately 1.6 and 3.0 percent of total traffic at this intersection during the AM and PM peak periods, respectively.

27) S. 1st Street and Monroe Street

This intersection will operate at LOS B and D under 2029 site plus forecasted traffic conditions during the AM and PM peak periods, respectively, **assuming the installation of a traffic signal when warrants are met in the field.** It should be noted that a traffic signal is currently under construction at this location; therefore, no fee-in-leu will be requested for this improvement. Site traffic comprises approximately 4.5 and 7.0 percent of total traffic at this intersection during the AM and PM peak periods, respectively.

28) Driveway A and Barton Springs Road Extension

Driveway A will be constructed as the north leg of the intersection with a minimum 36-foot cross section that will provide one inbound lane and two outbound lanes. Barton Springs Road Extension will be constructed as the major roadway of the intersection and will provide two travel lanes in each direction. The minor street approach (SB) will operate at LOS A and C under 2029 site plus forecasted traffic conditions during the AM and PM peak periods, respectively.

29) Driveway B and Barton Springs Road Extension

Driveway B will operate as a garage access point and will be constructed as the north leg of the intersection with a minimum 36-foot cross section that will provide one inbound lane and two outbound lanes. Barton Springs Road Extension will be constructed as the major roadway of the intersection and will provide two travel lanes in each direction. The minor street approach (SB) will operate at LOS A and B under 2029 site plus forecasted traffic conditions during the AM and PM peak periods, respectively.

30) Driveway C and Barton Springs Road Extension

Driveway C will be constructed as the north leg of the intersection with a minimum 36-foot cross section that will provide one inbound lane and two outbound lanes. Barton Springs Road Extension will be constructed as the major roadway of the intersection and will provide two travel lanes in each direction. The minor street approach (SB) will operate at LOS B and C under 2029 site plus forecasted traffic conditions during the AM and PM peak periods, respectively.

31) Driveway D and Barton Springs Road Extension

Driveway D will be constructed as the north leg of the intersection with a minimum 36-foot cross section that will provide one inbound lane and two outbound lanes. Barton Springs Road Extension will be constructed as the major roadway of the intersection and will provide two travel lanes in each direction. The minor street approach (SB) will operate at LOS B and C under 2029 site plus forecasted traffic conditions during the AM and PM peak periods, respectively.

32) Congress Avenue and Driveway E

Driveway E will be constructed as the east leg of the intersection with a minimum 30-foot cross section that will provide one outbound lane and operate as right-out only. The minor street approach (SB) will operate at LOS B and C under 2029 site plus forecasted traffic conditions during the AM and PM peak periods, respectively.



FIGURE 8
SITE VOLUMES



Background Map Copyrighted by Google, 2020

FIGURE 9
2029 SITE PLUS
FORECASTED VOLUMES

Level of Service Summary

Intersection LOS and delay results for 2020 existing, 2020 existing (adjusted) and 2029 forecasted (with and without site), traffic conditions are presented in Table 8 and 9. Table 10 provides a summary of all the recommended improvements to mitigate the impacts of site traffic.

Table 8. Overall Level of Service and Delay (sec/veh)

Intersection		2020 Existing		2020 Existing (Adjusted)		2029 Forecasted		2029 Site + Forecasted w/o Improvements		2029 Site + Forecasted with Improvements	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Overall intersection LOS and delay is reported for all signalized intersections.											
1	Lamar Boulevard and 6 th Street	C (28.3)	D (52.0)	C (28.4)	E (71.7)	D (35.9)	F (79.5)	D (37.9)	F (83.0)	N/A	N/A
2	Lamar Boulevard and 5 th Street	E (56.6)	D (51.3)	E (56.2)	E (60.1)	F (100.1)	E (79.7)	F (103.8)	E (79.7)	N/A	N/A
3	BR Reynolds Drive and Cesar Chavez Street	B (18.8)	C (34.9)	B (18.8)	D (40.9)	E (64.2)	E (63.8)	E (65.1)	E (72.8)	E (63.8)	E (69.4)
4	Sandra Muraida Way and Cesar Chavez Street	D (37.5)	C (24.4)	D (37.5)	C (25.3)	E (74.0)	D (45.0)	E (74.5)	D (54.5)	E (69.1)	D (46.0)
5	Lamar Boulevard and Barton Springs Road	D (42.7)	D (43.7)	D (42.6)	E (62.0)	D (42.7)	E (69.2)	D (50.1)	F (111.8)	N/A	N/A
6	Guadalupe Street and Cesar Chavez Street	B (17.9)	D (35.1)	B (17.4)	D (34.9)	B (18.8)	E (76.0)	B (19.2)	F (99.9)	B* (18.7)	N/A
7	Lavaca Street and Cesar Chavez Street	C (26.0)	C (26.6)	E (66.6)	C (26.3)	F (120.9)	C (25.1)	F (137.1)	C (26.3)	N/A	N/A
8	S. 1 st Street and Riverside Drive	C (21.3)	D (45.2)	C (23.0)	D (44.6)	E (74.2)	F (98.6)	F (96.3)	F (149.7)	N/A	N/A
9	S. 1 st Street and Barton Springs Road	C (34.5)	C (32.3)	D (37.9)	C (31.8)	E (77.4)	E (68.3)	F (80.5)	F (90.1)	N/A	N/A
10	Barton Springs Road and Riverside Drive	C (28.9)	B (18.3)	C (29.2)	B (18.9)	C (29.9)	D (40.0)	D (34.7)	E (64.6)	C* (34.3)	E* (65.7)
11	Congress Avenue and 7 th Street	B (11.3)	B (18.0)	B (11.3)	B (17.9)	B (13.0)	C (21.9)	B (12.9)	D (38.9)	N/A	N/A
12	Congress Avenue and 6 th Street	B (17.6)	B (17.5)	B (17.6)	B (17.1)	C (21.7)	D (45.9)	C (22.9)	E (69.5)	N/A	N/A
13	Congress Avenue and 5 th Street	B (17.1)	B (17.0)	B (17.1)	B (17.1)	C (20.2)	C (26.1)	C (20.8)	C (28.4)	N/A	N/A
14	Congress Avenue and Cesar Chavez Street	C (32.5)	C (35.4)	C (32.5)	F (114.5)	D (51.3)	F (163.6)	E (60.6)	F (184.4)	N/A	N/A
15	Congress Avenue and Barton Springs Road/Barton Springs Road Extension	B (14.5)	B (15.3)	B (15.1)	B (18.4)	E (68.5)	D (35.1)	E (77.5)	F (101.8)	E (68.2)	E (61.9)

Table 8. Overall Level of Service and Delay (cont'd) (sec/veh)

Intersection		2020 Existing		2020 Existing (Adjusted)		2029 Forecasted		2029 Site + Forecasted w/o Improvements		2029 Site + Forecasted with Improvements	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
16	Congress Avenue and Riverside Drive	E (57.5)	D (38.9)	E (58.3)	D (54.4)	F (161.0)	F (108.1)	F (173.1)	F (131.3)	F* (173.7)	F* (127.5)
17	Congress Avenue and Monroe Street	B (13.7)	B (16.2)	B (13.7)	B (16.2)	C (20.2)	C (21.7)	C (25.3)	C (25.0)	N/A	N/A
18	Commercial Driveway/Riverside Drive Access and Riverside Drive	A (7.0)	B (15.7)	A (7.4)	B (17.9)	B (10.4)	C (21.8)	C (29.0)	F (107.7)	C (23.3)	C (26.1)
19	IH 35 SB FR and 7 th Street	C (20.3)	C (21.2)	D (41.3)	C (21.2)	D (48.8)	C (23.3)	D (48.8)	C (23.2)	N/A	N/A
20	IH 35 NB FR and 7 th Street	C (33.2)	C (34.3)	D (51.5)	C (34.3)	E (82.7)	D (48.1)	F (84.8)	D (53.9)	N/A	N/A
21	IH 35 SB FR and 6 th Street	E (67.0)	D (51.2)	E (65.5)	D (51.2)	F (83.7)	E (58.6)	F (85.0)	E (61.2)	N/A	N/A
22	IH 35 NB FR and 6 th Street	C (22.0)	B (18.1)	C (22.0)	B (18.1)	D (36.3)	C (20.1)	D (36.5)	C (20.7)	N/A	N/A
23	IH 35 SB FR and Cesar Chavez Street	D (41.7)	D (47.8)	D (41.7)	D (44.8)	D (47.1)	F (81.9)	E (55.9)	F (92.2)	N/A	F* (92.3)
24	IH 35 NB FR and Cesar Chavez Street	E (58.2)	F (84.9)	E (58.2)	F (84.1)	F (108.2)	F (122.0)	F (109.9)	F (121.3)	N/A	N/A
25	IH 35 SB FR and Riverside Drive	D (36.0)	E (71.0)	D (45.2)	E (74.1)	F (113.2)	F (151.4)	F (129.1)	F (169.8)	N/A	F* (173.1)
26	IH 35 NB FR and Riverside Drive	F (87.2)	D (37.6)	F (99.0)	D (37.6)	F (164.6)	E (65.5)	F (166.5)	E (70.4)	N/A	N/A
27	S. 1 st Street and Monroe Street	-	-	-	-	-	-	-	-	B (17.2)	C (24.3)

N/A = No improvements are recommended, no change in LOS or delay

- = Intersection is unsignalized under this condition, see Table 7 for minor street approach LOS

* = No improvements at this intersection, changes in delay and LOS are due to improvements at adjacent intersections

Table 9. Highest Delay Minor Street Approach Level of Service and Delay (sec/veh)

Intersection		2020 Existing		2020 Existing (Adjusted)		2029 Forecasted		2029 Site + Forecasted w/o Improvements		2029 Site + Forecasted with Improvements	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Highest delay minor street approach LOS and delay is reported for all unsignalized intersections.											
27	S. 1 st Street and Monroe Street	F (72.1) WB	F (+) WB	F (72.1) WB	F (+) WB	F (340.8) WB	F (580.3) EB	F (476.3) WB	F (1399.4) EB	-	-
28	Driveway A and Barton Springs Road Extension	~	~	~	~	~	~	B (10.3) SB	C (20.7) SB	B* (10.0) SB	C* (17.0) SB
29	Driveway B and Barton Springs Road Extension	~	~	~	~	~	~	B (10.3) SB	C (16.4) SB	N/A	B* (13.6) SB
30	Driveway C and Barton Springs Road Extension	~	~	~	~	~	~	B (11.3) SB	C (15.3) SB	N/A	B* (13.5) SB
31	Driveway D and Barton Springs Road Extension	~	~	~	~	~	~	B (11.0) SB	B (12.9) SB	B* (10.5) SB	B* (11.8) SB
32	Congress Avenue and Driveway E	~	~	~	~	~	~	E (49.3) WB	D (33.0) WB	N/A	N/A

- = Intersection is signalized under this condition, see Table 6 for overall LOS

~ = Intersection does not exist under this condition

* = No improvements at this intersection, changes in delay and LOS are due to improvements at adjacent intersections

Active-Modes and Transit-Connectivity

A multimodal study was conducted to identify opportunities for improvement in the pedestrian, bicycle, and transit facilities within the study area. Further discussion of existing and proposed pedestrian, bicycle, and transit facilities are provided in the Active Modes Analysis, **which is a supplemental report to this TIA.**

Access Management Analysis and Queuing Analysis

Access to the site is proposed via three (3) full-purpose driveways on Barton Springs Road Extension and one right-in-right-out driveway on Congress Avenue, as shown in Figure 2.

Another component of this report was to review the site plan for queueing conditions. Queuing will occur mostly within the proposed parking garage below the development to minimize queuing on Barton Springs Road Extension and the three (3) proposed driveways. In addition, the right-in-right-out driveway off of Congress Avenue will operate as a pick-up/drop-off circle for the development. It should be noted that this driveway will operate unacceptably during the AM peak, with a queue length of approximately 1 vehicle (20 feet). Sufficient storage will be provided for this driveway such that the queue does not interfere with the northbound traffic on Congress Avenue.

Recommendations

ERG Riverfront, Inc. plans to renovate the sidewalks on Congress Avenue and add pedestrian facilities to Barton Springs Road Extension and Congress Avenue along their property line. These improvements are planned as part of the site development. Table 10 provides a summary of all recommended improvements identified for the study area. The developer proposes to contribute to the improvements as shown below. Recommended improvements are shown in Figures 10-12.

Table 10. Summary of Recommended Improvements

Intersection / Location		Recommendation	Improvement Cost	% Site Traffic	Pro-Rata Cost*
3	BR Reynolds Drive and Cesar Chavez Street	Extension of the southbound right-turn storage (285-foot storage, 100-foot taper)	\$ 108,000	0.0	-
		Signal timing optimization	\$ 5,000	100.0	\$ 5,000
4	Sandra Muraida Way and Cesar Chavez Street	Construct a westbound right-turn lane (75-foot storage, 50-foot taper)	\$ 100,000	58.0	\$ 58,000
		Signal timing optimization	\$ 5,000	100.0	\$ 5,000
15	Congress Avenue and Barton Springs Road/Barton Springs Road Extension	Construction of an additional westbound receiving lane	\$ 102,000	100.0	\$ 102,000
		Signal modification	\$ 100,000	100.0	\$100,000
		Signal Timing Optimization	\$ 5,000	100.0	\$ 5,000
18	Commercial Drive/ Riverside Drive Access and Riverside Drive	Restripe Riverside Drive Access to a four-lane cross-section (southbound approach to provide one left-turn lane and one left-turn/through/right-turn shared lane, and north leg to provide one additional receiving lane	\$ 20,000	63.5	\$ 12,700
		Signal modification	\$ 50,000	63.5	\$ 31,750
		Signal timing optimization	\$ 5,000	100.0	\$ 5,000
Total Cost			\$ 500,000	-	\$ 324,450

* Pro-Rata cost applies the higher of the AM and PM site traffic percentages

Table 11 provides a summary of the improvements that the developer will be responsible for per the approved TIA Final Memo dated December 13, 2021, and discussions with City staff. A copy of the TIA Final Memo is included in the Technical Addendum.

Table 11. Summary of Improvements

Intersection / Location	Recommendation	Improvement Cost	Developer's Share %**
Barton Springs Road, east of S. Congress Avenue	Construct the Barton Springs Extension***	TBD	100%
Barton Springs Road and S. Congress Avenue	Construct a westbound receiving lane	TBD	100%
East curb of S. Congress Avenue, between Bridge and Riverside Drive	Construct a 6-foot protected bike lane with 2-foot curb buffer	TBD	100%
Riverside Drive Access	Bike and Pedestrian Facility	TBD	100%

* The ROW land value for Barton Springs Extension on the developer's land will be credited towards the SIF max for this development.

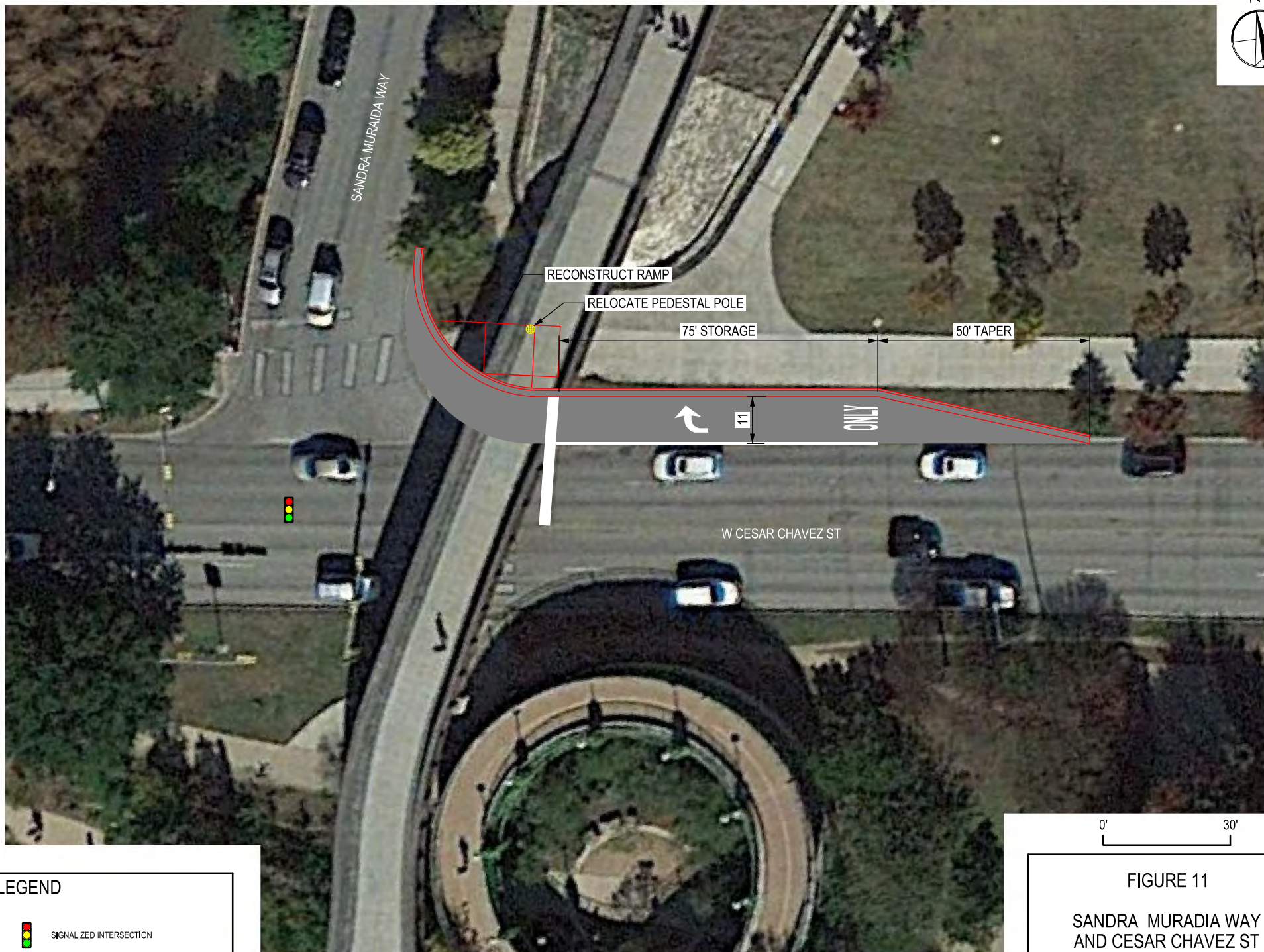
** Developer's cost may be paid directly by the developer, with the South Central Waterfront TIRZ/TIF (when passed) or other public funding mechanism approved by the City. However, if any public funding is used, those construction costs will not be credited as a SIF offset.

*** The developer has proposed to construct additional mitigation/capacity

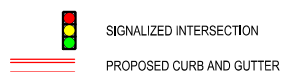


Background Map Copyrighted by Google, 2020

FIGURE 10
BR REYNOLDS DR AND
CESAR CHAVEZ ST
IMPROVEMENTS



LEGEND



Background Map Copyrighted by Google, 2020

FIGURE 11

SANDRA MURADIA WAY
AND CESAR CHAVEZ ST
IMPROVEMENTS



FIGURE 12
PROPOSED PROTECTED
BIKE LANE FROM
RIVERSIDE DR TO
CONGRESS AVE BRIDGE

Table 12. 2029 Intersection Analysis Results for AM Peak

Intersection	AM Peak																					
	Traffic Control Type	2020 Existing (Adjusted)					2029 Forecasted (without site)					2029Site + Forecasted (No Improvements)					2029 Site + Forecasted (With Improvements)					
		Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Traffic Control Type	Delay	LOS	95 th * Queue	Bay Length	V/C **
Lamar Blvd & 6th St	Signal	28.4	C				35.9	D				37.9	D				Signal	37.9	D			
WB left		54.8	D	118	N/A	0.30	55.8	E	138	N/A	0.35	56.0	E	143	N/A	0.37		56.0	E	143	N/A	0.37
WB through		63.2	E	269	N/A	0.72	70.4	E	325	N/A	0.86	70.4	E	325	N/A	0.86		70.4	E	325	N/A	0.86
WB right		13.3	B	61	N/A	0.30	22.7	C	98	N/A	0.37	22.7	C	98	N/A	0.37		22.7	C	98	N/A	0.37
NB left		14.6	B	84	140	0.39	28.4	C	190	140	0.57	28.2	C	189	140	0.58		28.2	C	189	140	0.58
NB through		4.7	A	130	N/A	0.50	12.0	B	126	N/A	0.61	16.4	B	123	N/A	0.62		16.4	B	123	N/A	0.62
SB through/right		37.7	D	506	N/A	0.70	45.5	D	683	N/A	0.86	46.9	D	706	N/A	0.88		46.9	D	706	N/A	0.88
Lamar Blvd & 5th St	Signal	56.2	E				100.1	F				103.8	F				Signal	103.8	F			
EB left		64.1	E	304	N/A	0.64	71.3	E	380	N/A	0.76	71.3	E	380	N/A	0.76		71.3	E	380	N/A	0.76
EB through/right		99.8	F	506	N/A	1.06	176.5	F	668	N/A	1.27	176.5	F	668	N/A	1.27		176.5	F	668	N/A	1.27
EB right		16.1	B	70	N/A	0.25	20.5	C	123	N/A	0.42	20.6	C	125	N/A	0.42		20.6	C	125	N/A	0.42
NB through/right		35.3	D	883	N/A	0.89	81.7	F	1364	N/A	1.09	92.9	F	1424	N/A	1.12		92.9	F	1424	N/A	1.12
SB left		141.9	F	492	140	1.11	208.2	F	529	140	1.32	207.4	F	517	140	1.32		207.4	F	517	140	1.32
SB through		4.5	A	84	N/A	0.30	4.7	A	100	N/A	0.37	4.8	A	104	N/A	0.39		4.8	A	104	N/A	0.39
Cesar Chavez St & BR Reynolds Dr	Signal	18.8	B				64.2	E				65.1	E				Signal	63.8	E			
EB left		24.7	C	165	250	0.66	43.5	D	300	250	0.74	43.8	D	300	250	0.75		66.5	E	347	250	0.91
EB through		6.5	A	405	N/A	0.69	58.7	E	804	N/A	0.85	60.3	E	908	N/A	0.88		59.0	E	751	N/A	0.87
WB through		31.9	C	638	N/A	0.68	82.6	F	912	N/A	0.91	82.5	F	933	N/A	0.93		76.2	E	808	N/A	0.86
WB right		10.9	B	92	100	0.12	12.3	B	73	100	0.16	11.8	B	67	100	0.16		7.9	A	53	100	0.15
SB left		57.6	E	101	N/A	0.43	55.2	E	114	N/A	0.44	63.1	E	155	N/A	0.62		76.2	E	162	N/A	0.67
SB right		28.1	C	113	155	0.31	28.1	C	142	155	0.32	28.0	C	142	155	0.32		31.9	C	155	285	0.36
Cesar Chavez St & Sandra Muraida Way	Signal	37.5	D				74.0	E				74.5	E				Signal	69.1	E			
EB through		16.5	B	584	N/A	0.81	68.7	E	1177	N/A	0.99	68.8	E	1283	N/A	1.03		69.4	E	1324	N/A	1.07

Table 12. 2029 Intersection Analysis Results for AM Peak

Intersection	AM Peak																					
	Traffic Control Type	2020 Existing (Adjusted)					2029 Forecasted (without site)					2029Site + Forecasted (No Improvements)					2029 Site + Forecasted (With Improvements)					
		Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Traffic Control Type	Delay	LOS	95 th * Queue	Bay Length	V/C **
WB through/right		75.9	E	542	N/A	0.60	80.0	E	667	N/A	0.73	80.1	F	693	N/A	0.76		~	~	~	~	~
WB through		~	~	~	~	~	~	~	~	~	~	~	~	~	~	~		81.1	F	664	N/A	0.75
WB right		~	~	~	~	~	~	~	~	~	~	~	~	~	~	~		7.8	A	26	150	0.08
SB left		43.1	D	100	N/A	0.26	43.7	D	115	N/A	0.29	43.7	D	115	N/A	0.29		40.6	D	112	N/A	0.26
SB right		37.5	D	420	N/A	0.75	88.0	F	639	N/A	0.93	91.2	F	641	N/A	0.93		51.2	D	624	N/A	0.90
Lamar Blvd & Barton Springs Rd	Signal	42.6	D				42.7	D				50.1	D				Signal	50.1	D			
EB left		76.3	E	259	230	0.86	76.3	E	259	230	0.86	78.9	E	259	230	0.88		78.9	E	259	230	0.88
EB through		46.5	D	263	N/A	0.56	46.5	D	263	N/A	0.56	46.6	D	263	N/A	0.56		46.6	D	263	N/A	0.56
EB right		1.6	A	10	100	0.13	1.6	A	10	100	0.13	1.5	A	10	100	0.12		1.5	A	10	100	0.12
WB left		67.8	E	69	290	0.41	65.8	E	64	290	0.41	64.0	E	75	290	0.42		64.0	E	75	290	0.42
WB through		72.5	E	316	N/A	0.82	72.1	E	320	N/A	0.82	80.5	F	434	N/A	0.94		80.5	F	434	N/A	0.94
WB right		45.5	D	272	320	0.78	48.4	D	290	320	0.78	62.2	E	447	320	0.93		62.2	E	447	320	0.93
NB left		17.5	B	93	185	0.28	17.5	B	93	185	0.28	19.7	B	109	185	0.39		19.7	B	109	185	0.39
NB through		35.5	D	420	N/A	0.66	35.5	D	420	N/A	0.66	43.0	D	550	N/A	0.84		43.0	D	550	N/A	0.84
NB right		9.5	A	113	165	0.40	9.5	A	113	165	0.40	12.7	B	182	165	0.55		12.7	B	182	165	0.55
SB left		66.0	E	243	230	0.78	66.0	E	243	230	0.78	130.4	F	386	230	1.08		130.4	F	386	230	1.08
SB through		26.5	C	204	N/A	0.32	26.5	C	204	N/A	0.32	29.4	C	254	N/A	0.41		29.4	C	254	N/A	0.41
SB right		1.7	A	18	N/A	0.13	1.7	A	18	N/A	0.13	2.0	A	24	N/A	0.20		2.0	A	24	N/A	0.20
Cesar Chavez St & Guadalupe St	Signal	17.4	B				18.8	B				19.2	B				Signal	18.7	B			
EB through		23.0	C	245	N/A	0.56	23.1	C	253	N/A	0.67	22.7	C	245	N/A	0.68		21.5	C	227	N/A	0.68
EB right		6.3	A	58	100	0.36	6.7	A	61	100	0.47	7.9	A	95	100	0.61		7.3	A	84	100	0.61
WB through		11.5	B	246	N/A	0.61	14.3	B	276	N/A	0.75	16.2	B	294	N/A	0.78		16.2	B	294	N/A	0.78
SB left/through		27.0	C	110	N/A	0.25	28.2	C	150	N/A	0.34	28.7	C	164	N/A	0.37		28.7	C	164	N/A	0.37

Table 12. 2029 Intersection Analysis Results for AM Peak

Intersection	AM Peak																					
	Traffic Control Type	2020 Existing (Adjusted)					2029 Forecasted (without site)					2029Site + Forecasted (No Improvements)					2029 Site + Forecasted (With Improvements)					
		Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Traffic Control Type	Delay	LOS	95 th * Queue	Bay Length	V/C **
SB right		4.1	A	33	N/A	0.20	6.2	A	49	N/A	0.24	6.2	A	49	N/A	0.24		6.2	A	49	N/A	0.24
Cesar Chavez St & Lavaca St	Signal	66.6	E				120.9	F				137.1	F				Signal	137.1	F			
EB left		5.3	A	10	N/A	0.30	8.9	A	32	N/A	0.41	8.6	A	31	N/A	0.41		8.6	A	31	N/A	0.41
EB through		9.1	A	162	N/A	0.63	13.1	B	253	N/A	0.76	14.0	B	261	N/A	0.78		14.0	B	265	N/A	0.78
WB through/right		23.0	C	303	N/A	0.50	20.7	C	341	N/A	0.60	20.8	C	342	N/A	0.60		20.8	C	342	N/A	0.60
NB left/through		120.5	F	864	N/A	1.18	227.4	F	1145	N/A	1.43	255.8	F	1217	N/A	1.50		255.8	F	1217	N/A	1.50
NB right		18.8	B	199	N/A	0.49	23.3	C	274	N/A	0.60	23.3	C	274	N/A	0.60		23.3	C	274	N/A	0.60
S 1st St & Riverside Dr	Signal	23.0	C				74.2	E				96.3	F				Signal	96.3	F			
EB left		50.5	D	110	290	0.62	58.4	E	159	290	0.76	58.4	E	159	290	0.76		58.4	E	159	290	0.76
EB through/right		34.1	C	33	N/A	0.07	37.8	D	87	N/A	0.16	38.0	D	92	N/A	0.17		38.0	D	92	N/A	0.17
WB left		12.0	B	18	125	0.12	10.1	B	19	125	0.13	10.8	B	22	125	0.13		10.8	B	22	125	0.13
WB through/right		30.2	C	315	N/A	0.87	68.2	E	536	N/A	1.06	94.2	F	517	N/A	1.13		94.2	F	520	N/A	1.13
NB left		5.8	A	11	150	0.09	6.8	A	14	150	0.15	6.8	A	13	150	0.16		6.8	A	13	150	0.16
NB through/right		18.1	B	274	N/A	0.78	79.1	E	876	N/A	1.11	90.8	F	792	N/A	1.14		90.8	F	792	N/A	1.14
SB left		67.3	E	181	300	0.74	223.3	F	416	300	1.34	370.7	F	556	300	1.70		370.7	F	556	300	1.70
SB through/right		15.1	B	90	N/A	0.15	18.3	B	112	N/A	0.20	19.0	B	131	N/A	0.23		19.0	B	131	N/A	0.23
Barton Springs Rd & S 1st St	Signal	37.9	D				77.4	E				80.5	F				Signal	80.5	F			
EB left		72.2	E	255	165	0.87	139.2	F	388	165	1.15	136.9	F	356	165	1.15		136.9	F	356	165	1.15
EB through/right		56.7	E	350	N/A	0.79	57.5	E	427	N/A	0.84	60.6	E	463	N/A	0.89		60.6	E	463	N/A	0.89
WB left		55.7	E	181	125	0.76	87.5	F	388	125	0.92	166.7	F	448	125	1.19		166.6	F	448	125	1.19
WB through/right		34.1	C	195	N/A	0.61	45.5	D	308	N/A	0.70	51.9	D	362	N/A	0.80		51.7	D	362	N/A	0.80
NB left		15.4	B	93	80	0.20	18.2	B	110	80	0.28	18.2	B	110	80	0.28		18.2	B	110	80	0.28
NB through/right		30.4	C	602	N/A	0.74	93.3	F	892	N/A	1.00	89.4	F	977	N/A	1.10		89.4	F	977	N/A	1.10

Table 12. 2029 Intersection Analysis Results for AM Peak

Intersection	AM Peak																					
	Traffic Control Type	2020 Existing (Adjusted)					2029 Forecasted (without site)					2029Site + Forecasted (No Improvements)					2029 Site + Forecasted (With Improvements)					
		Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Traffic Control Type	Delay	LOS	95 th * Queue	Bay Length	V/C **
SB left		28.0	C	18	85	0.30	30.8	C	28	85	0.36	93.0	F	193	85	0.92		93.0	F	193	85	0.92
SB through		12.8	B	38	N/A	0.14	14.1	B	45	N/A	0.19	13.2	B	42	N/A	0.19		13.2	B	42	N/A	0.19
SB right		0.3	A	0	N/A	0.09	0.4	A	1	N/A	0.12	0.4	A	0	N/A	0.12		0.4	A	0	N/A	0.12
Barton Springs Rd & Riverside Dr	Signal	29.2	C				29.9	C				34.7	C				Signal	34.1	C			
NE left/through		64.5	E	215	N/A	0.44	64.7	E	250	N/A	0.59	78.5	E	382	N/A	0.97		78.5	E	382	N/A	0.97
NE right		21.2	C	263	N/A	0.32	24.7	C	365	N/A	0.48	21.8	C	314	N/A	0.54		21.8	C	314	N/A	0.54
NW left		27.4	C	297	220	0.49	36.2	D	262	220	0.64	39.9	D	287	220	0.71		39.7	D	287	220	0.71
NW through/right		18.5	B	207	N/A	0.26	23.0	C	274	N/A	0.47	23.5	C	271	N/A	0.47		23.3	C	271	N/A	0.47
SE left		4.6	A	4	105	0.03	6.7	A	6	105	0.08	10.3	B	22	105	0.36		10.3	B	22	105	0.36
SE through/right		16.0	B	34	N/A	0.17	15.5	B	54	N/A	0.27	14.3	B	44	N/A	0.27		14.3	B	44	N/A	0.27
SW left/through/right		28.7	C	124	N/A	0.29	20.1	C	136	N/A	0.43	25.3	C	201	N/A	0.60		21.0	C	118	N/A	0.60
Congress Ave & 7th St	Signal	11.3	B				13.0	B				12.9	B				Signal	12.9	B			
EB left/through/right		26.0	C	88	N/A	0.21	26.6	C	105	N/A	0.25	26.6	C	105	N/A	0.25		26.6	C	105	N/A	0.25
NB through/right		1.5	A	2	N/A	0.28	3.5	A	9	N/A	0.50	3.6	A	9	N/A	0.52		3.6	A	9	N/A	0.52
SB left/through		13.7	B	65	N/A	0.17	16.4	B	147	N/A	0.38	16.6	B	149	N/A	0.39		16.6	B	149	N/A	0.39
Congress Ave & 6th St	Signal	17.6	B				21.7	C				22.9	C				Signal	22.9	C			
WB left/through/right		23.6	C	259	N/A	0.51	25.4	C	324	N/A	0.61	25.5	C	329	N/A	0.62		25.5	C	329	N/A	0.62
NB left		~	~	~	~	~	25.4	C	138	75	0.70	30.4	C	152	75	0.77		30.4	C	152	75	0.77
NB left/through		11.0	B	79	N/A	0.55	~	~	~	~	~	~	~	~	~	~		~	~	~	~	~
NB through		~	~	~	~	~	15.8	B	184	N/A	0.59	17.9	B	201	N/A	0.62		17.9	B	201	N/A	0.62
SB through/right		10.5	B	19	N/A	0.19	17.4	B	52	N/A	0.39	17.8	B	53	N/A	0.40		17.8	B	53	N/A	0.40
Congress Ave & 5th St	Signal	17.1	B				20.2	C				20.8	C				Signal	20.8	C			
EB left		27.2	C	82	N/A	0.14	27.6	C	96	N/A	0.17	27.6	C	96	N/A	0.17		27.6	C	96	N/A	0.17

Table 12. 2029 Intersection Analysis Results for AM Peak

Intersection	AM Peak																					
	Traffic Control Type	2020 Existing (Adjusted)					2029 Forecasted (without site)					2029Site + Forecasted (No Improvements)					2029 Site + Forecasted (With Improvements)					
		Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Traffic Control Type	Delay	LOS	95 th * Queue	Bay Length	V/C **
EB through/right		29.5	C	196	N/A	0.43	31.1	C	239	N/A	0.52	31.1	C	239	N/A	0.52		31.1	C	239	N/A	0.52
NB through/right		8.3	A	148	N/A	0.46	14.5	B	437	N/A	0.81	16.0	B	475	N/A	0.86		16.0	B	475	N/A	0.86
SB left		~	~	~	~	~	22.6	C	33	70	0.32	29.3	C	44	70	0.36		29.3	C	44	70	0.36
SB left/through		13.0	B	44	N/A	0.15	~	~	~	~	~	~	~	~	~	~		~	~	~	~	~
SB through		~	~	~	~	~	10.4	B	60	N/A	0.19	11.0	B	65	N/A	0.20		11.0	B	65	N/A	0.20
Congress Ave & Cesar Chavez St	Signal	32.5	C				51.3	D				60.6	E				Signal	60.6	E			
EB left		19.4	B	166	140	0.50	23.0	C	165	140	0.68	22.8	C	165	140	0.68		22.8	C	165	140	0.68
EB through		31.3	C	228	N/A	0.38	30.6	C	272	N/A	0.46	30.5	C	273	N/A	0.46		30.5	C	273	N/A	0.46
EB right		13.6	B	135	180	0.32	13.1	B	148	180	0.39	16.5	B	190	180	0.44		16.4	B	190	180	0.44
WB left		23.4	C	117	135	0.44	32.5	C	138	135	0.69	43.2	D	189	135	0.84		43.2	D	189	135	0.84
WB through/right		41.1	D	322	N/A	0.60	43.9	D	372	N/A	0.72	43.4	D	371	N/A	0.72		43.4	D	371	N/A	0.72
NB left		~	~	~	~	~	30.5	C	122	150	0.36	31.0	C	124	150	0.38		31.0	C	124	150	0.38
NB left/through/right		40.3	D	446	N/A	0.86	~	~	~	~	~	~	~	~	~	~		~	~	~	~	~
NB through		~	~	~	~	~	98.1	F	855	N/A	1.12	124.8	F	934	N/A	1.18		124.8	F	934	N/A	1.18
NB right		19.1	B	247	125	0.55	23.6	C	313	125	0.64	27.0	C	371	125	0.72		27.0	C	371	125	0.72
SB left		~	~	~	~	~	56.1	E	53	120	0.45	56.1	E	53	120	0.45		56.1	E	53	120	0.45
SB left/through/right		21.9	C	82	N/A	0.21	~	~	~	~	~	~	~	~	~	~		~	~	~	~	~
SB through/right		~	~	~	~	~	24.7	C	174	N/A	0.31	25.2	C	185	N/A	0.32		25.2	C	185	N/A	0.32
Congress Ave & Barton Springs Rd/Barton Springs Rd Extension	Signal	15.1	B				68.5	E				77.5	E				Signal	68.2	E			
EB left		32.8	C	158	N/A	0.69	56.7	E	201	N/A	0.77	47.2	D	159	N/A	0.77		62.9	E	160	N/A	0.75
EB through/right		16.6	B	70	N/A	0.16	31.3	C	65	N/A	0.17	49.3	D	349	N/A	0.79		93.3	F	438	N/A	1.00
WB left		~	~	~	~	~	~	~	~	~	~	~	~	~	~	~		60.7	E	32	N/A	0.13
WB left/through		65.4	E	21	N/A	0.09	65.4	E	21	N/A	0.09	99.6	F	251	N/A	0.85		~	~	~	~	~

* 95th Queue is reported in feet for signalized intersections and vehicles for unsignalized intersections
** V/C: Volume to Capacity ratio
~ Movement does not exist under this condition

Table 12. 2029 Intersection Analysis Results for AM Peak

Intersection	AM Peak																					
	Traffic Control Type	2020 Existing (Adjusted)					2029 Forecasted (without site)					2029Site + Forecasted (No Improvements)					2029 Site + Forecasted (With Improvements)					
		Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Traffic Control Type	Delay	LOS	95 th * Queue	Bay Length	V/C **
WB through/right		~	~	~	~	~	~	~	~	~	~	~	~	~	~		39.5	D	107	N/A	0.76	
WB right		0.6	A	0	N/A	0.06	0.6	A	0	N/A	0.06	22.4	C	96	N/A	0.62		~	~	~	~	~
NB left		5.4	A	34	50	0.13	20.7	C	47	100	0.12	31.2	C	53	100	0.13		19.2	B	30	100	0.13
NB through		12.6	B	515	N/A	0.50	89.7	F	710	N/A	0.88	111.6	F	719	N/A	1.13		86.3	F	477	N/A	1.10
NB right		0.0	A	0	140	0.01	0.0	A	0	105	0.01	13.8	B	10	105	0.12		9.8	A	11	105	0.12
SB left		7.7	A	19	70	0.18	11.9	B	19	70	0.27	55.9	E	150	70	0.78		52.3	D	148	70	0.75
SB through/right		16.9	B	163	N/A	0.24	~	~	~	~	~	~	~	~	~	~		~	~	~	~	~
SB through		~	~	~	~	~	41.6	D	276	N/A	0.52	53.5	D	290	N/A	0.71		48.9	D	294	N/A	0.63
SB right		~	~	~	~	~	8.2	A	87	100	0.46	10.3	B	93	100	0.55		18.7	B	161	100	0.56
Congress Ave & Riverside Dr	Signal	58.3	E				161.0	F				173.0	F				Signal	173.7	F			
EB left		45.2	D	64	170	0.32	51.9	D	60	170	0.35	56.1	E	63	170	0.40		152.0	F	63	170	0.40
EB through		37.9	D	257	N/A	0.33	42.1	D	365	N/A	0.50	43.0	D	388	N/A	0.55		43.0	D	388	N/A	0.55
EB right		2.0	A	10	N/A	0.06	5.9	A	52	N/A	0.20	5.9	A	48	N/A	0.20		5.9	A	48	N/A	0.20
WB left		30.9	C	137	140	0.27	32.0	C	155	140	0.47	30.0	C	117	140	0.53		32.6	C	145	140	0.53
WB through/right		49.5	D	617	N/A	0.78	105.5	F	1060	N/A	1.12	118.9	F	605	N/A	1.16		123.4	F	1119	N/A	1.16
NB left		121.8	F	246	270	1.04	299.0	F	398	215	1.54	299.0	F	398	215	1.54		299.0	F	398	215	1.54
NB through/right		65.9	E	624	N/A	0.99	~	~	~	~	~	~	~	~	~	~		~	~	~	~	~
NB through		~	~	~	~	~	285.9	F	1281	N/A	1.55	317.6	F	1361	N/A	1.62		315.7	F	1361	N/A	1.62
NB right		~	~	~	~	~	12.2	B	93	200	0.33	20.7	C	178	200	0.47		20.7	C	178	200	0.47
SB left		69.0	E	71	180	0.65	111.9	F	122	180	0.73	115.4	F	117	180	0.73		101.3	F	117	180	0.73
SB through/right		30.6	C	69	N/A	0.18	67.6	E	195	N/A	0.32	71.4	E	200	N/A	0.33		57.9	E	206	N/A	0.33
Congress Ave & Monroe St	Signal	13.7	B				20.2	C				25.3	C				Signal	25.3	C			
EB left/through/right		39.1	D	54	N/A	0.16	39.3	D	60	N/A	0.19	39.3	D	60	N/A	0.19		39.3	D	60	N/A	0.19

Table 12. 2029 Intersection Analysis Results for AM Peak

Intersection	AM Peak																					
	Traffic Control Type	2020 Existing (Adjusted)					2029 Forecasted (without site)					2029Site + Forecasted (No Improvements)					2029 Site + Forecasted (With Improvements)					
		Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Traffic Control Type	Delay	LOS	95 th * Queue	Bay Length	V/C **
WB left/through/right		44.1	D	119	N/A	0.40	48.8	D	142	N/A	0.48	48.8	D	142	N/A	0.48		48.8	D	142	N/A	0.48
NB left		3.3	A	8	100	0.02	3.3	A	9	100	0.03	3.3	A	9	100	0.03		3.3	A	9	100	0.03
NB through/right		13.5	B	504	N/A	0.70	21.7	C	890	N/A	0.89	28.0	C	1128	N/A	0.95		28.0	C	1128	N/A	0.95
SB left		4.2	A	7	100	0.08	5.9	A	8	100	0.15	5.9	A	8	100	0.15		5.9	A	8	100	0.15
SB through/right		3.5	A	41	N/A	0.12	3.7	A	54	N/A	0.16	3.7	A	54	N/A	0.16		3.7	A	54	N/A	0.16
Commercial Dr/Riverside Dr Access & Riverside Dr	Signal	7.4	A				10.4	B				29.0	C				Signal	23.5	C			
EB left		9.8	A	36	100	0.17	29.0	C	51	100	0.27	103.7	F	312	100	0.93		102.1	F	294	100	0.98
EB through/right		4.6	A	209	N/A	0.20	4.0	A	226	N/A	0.27	9.3	A	318	N/A	0.31		1.3	A	91	N/A	0.31
WB left		1.5	A	1	100	0.00	1.5	A	1	100	0.00	3.0	A	2	100	0.00		3.0	A	3	100	0.00
WB through/right		7.3	A	376	N/A	0.55	11.7	B	737	N/A	0.75	27.8	C	1236	N/A	0.94		23.4	C	1273	N/A	0.92
NB left/through/right		52.0	D	17	N/A	0.07	51.4	D	17	N/A	0.06	43.8	D	15	N/A	0.04		54.0	D	17	N/A	0.07
SB left		~	~	~	~	~	~	~	~	~	~	~	~	~	~	~		76.3	E	74	600	0.46
SB left/through/right		63.5	E	49	N/A	0.33	64.2	E	49	N/A	0.34	62.3	E	141	N/A	0.74		26.2	C	41	N/A	0.48
IH 35 SB FR & 7th St	Signal	41.3	D				48.8	D				48.8	D				Signal	48.8	D			
EB through/right		23.2	C	166	N/A	0.37	24.5	C	205	N/A	0.44	24.6	C	210	N/A	0.45		24.6	C	210	N/A	0.45
SB left		91.7	F	852	N/A	0.96	113.1	F	1146	N/A	1.16	113.1	F	1146	N/A	1.16		113.1	F	1146	N/A	1.16
SB through		24.2	C	338	N/A	0.60	27.7	C	434	N/A	0.71	27.9	C	438	N/A	0.72		27.9	C	438	N/A	0.72
IH 35 NB FR & 7th St	Signal	51.5	D				82.7	F				84.8	F				Signal	84.8	F			
EB left		73.4	E	274	N/A	0.61	92.8	F	303	N/A	0.73	92.7	F	309	N/A	0.74		92.7	F	309	N/A	0.74
EB through		23.0	C	414	N/A	0.56	25.4	C	460	N/A	0.67	25.2	C	465	N/A	0.68		25.2	C	465	N/A	0.68
WB right		83.7	F	393	N/A	1.03	153.5	F	516	N/A	1.23	153.5	F	516	N/A	1.23		153.5	F	516	N/A	1.23
NB through		49.7	D	320	N/A	0.62	95.0	F	391	N/A	0.74	102.1	F	400	N/A	0.75		102.1	F	400	N/A	0.75
NB right		21.8	C	87	N/A	0.21	26.2	C	112	N/A	0.25	26.7	C	116	N/A	0.25		26.7	C	116	N/A	0.25

* 95th Queue is reported in feet for signalized intersections and vehicles for unsignalized intersections

** V/C: Volume to Capacity ratio

~ Movement does not exist under this condition

Table 12. 2029 Intersection Analysis Results for AM Peak

Intersection	AM Peak																					
	Traffic Control Type	2020 Existing (Adjusted)					2029 Forecasted (without site)					2029Site + Forecasted (No Improvements)					2029 Site + Forecasted (With Improvements)					
		Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Traffic Control Type	Delay	LOS	95 th * Queue	Bay Length	V/C **
IH 35 SB FR & 6th St	Signal	65.5	E				83.7	F				85.0	F				Signal	85.0	F			
WB left		31.3	C	156	100	0.34	33.9	C	184	100	0.40	34.6	C	196	100	0.42		34.6	C	196	100	0.42
WB through		54.6	D	460	N/A	0.77	92.4	F	584	N/A	0.92	91.9	F	585	N/A	0.92		91.9	F	585	N/A	0.92
SB left		24.9	C	100	N/A	0.09	25.7	C	103	N/A	0.10	25.6	C	102	N/A	0.10		25.6	C	102	N/A	0.10
SB through		36.5	D	322	N/A	0.33	58.6	E	383	N/A	0.39	59.0	E	383	N/A	0.39		59.0	E	383	N/A	0.39
SB right		112.4	F	847	N/A	0.93	111.5	F	1164	N/A	1.11	116.0	F	1187	N/A	1.12		116.0	F	1187	N/A	1.12
IH 35 NB FR & 6th St	Signal	22.0	C				36.3	D				36.5	D				Signal	36.5	D			
EB left		61.0	E	19	100	0.04	60.5	E	21	100	0.06	60.8	E	21	100	0.06		60.8	E	21	100	0.06
EB through		59.5	E	119	N/A	0.13	62.8	E	136	N/A	0.15	62.8	E	136	N/A	0.15		62.8	E	136	N/A	0.15
WB through/right		37.7	D	270	N/A	0.57	89.0	F	333	N/A	0.67	89.2	F	339	N/A	0.68		89.2	F	339	N/A	0.68
NB left/through/right		15.0	B	265	N/A	0.51	17.2	B	342	N/A	0.61	17.4	B	350	N/A	0.62		17.4	B	350	N/A	0.62
IH 35 SB FR & Cesar Chavez St	Signal	41.7	D				47.1	D				55.9	E				Signal	55.9	E			
EB through		48.2	D	367	N/A	0.77	47.9	D	369	N/A	0.77	78.4	E	510	N/A	0.97		78.4	E	510	N/A	0.97
EB right		8.8	A	98	100	0.30	7.3	A	96	100	0.30	9.3	A	110	100	0.37		9.3	A	110	100	0.37
WB left/through		6.3	A	90	N/A	0.48	10.3	B	102	N/A	0.59	12.8	B	98	N/A	0.60		12.8	B	98	N/A	0.60
SB left/through/right		107.5	F	354	N/A	0.93	109.4	F	474	N/A	1.11	111.3	F	478	N/A	1.12		111.3	F	478	N/A	1.12
SB right		21.0	C	160	N/A	0.64	55.4	E	317	N/A	0.82	54.6	D	315	N/A	0.81		54.6	D	315	N/A	0.81
IH 35 NB FR & Cesar Chavez St	Signal	58.2	E				108.2	F				109.9	F				Signal	109.9	F			
EB left		18.0	B	77	N/A	0.76	66.4	E	260	N/A	0.79	69.0	E	59	N/A	0.79		69.0	E	59	N/A	0.79
EB through		7.9	A	63	N/A	0.32	9.0	A	70	N/A	0.32	7.8	A	48	N/A	0.32		7.8	A	48	N/A	0.32
WB through/right		44.2	D	324	N/A	0.76	63.8	E	463	N/A	0.94	71.5	E	478	N/A	0.96		71.5	E	478	N/A	0.96
NB left		57.7	E	532	N/A	0.86	100.8	F	694	N/A	1.03	100.8	F	694	N/A	1.03		100.8	F	694	N/A	1.03
NB left/through		106.0	F	719	N/A	1.12	194.1	F	926	N/A	1.34	194.1	F	926	N/A	1.34		194.1	F	926	N/A	1.34

Table 12. 2029 Intersection Analysis Results for AM Peak

Intersection	AM Peak																					
	Traffic Control Type	2020 Existing (Adjusted)					2029 Forecasted (without site)					2029Site + Forecasted (No Improvements)					2029 Site + Forecasted (With Improvements)					
		Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Traffic Control Type	Delay	LOS	95 th * Queue	Bay Length	V/C **
NB right		8.4	A	78	N/A	0.36	12.2	B	117	N/A	0.43	12.2	B	117	N/A	0.43		12.2	B	117	N/A	0.43
I-35 SBFR & Riverside Dr	Signal	45.2	D				113.2	F				129.1	F				Signal	129.1	F			
EB through/right		50.0	D	364	N/A	0.77	85.9	F	555	N/A	1.00	95.5	F	578	N/A	1.03		95.5	F	578	N/A	1.03
WB left		2.6	A	25	N/A	0.40	3.6	A	31	N/A	0.47	3.3	A	29	N/A	0.47		3.3	A	29	N/A	0.47
WB through		5.3	A	3	N/A	0.40	53.1	D	3	N/A	0.53	53.6	D	3	N/A	0.56		53.6	D	3	N/A	0.56
SB left		66.3	E	358	N/A	0.74	81.4	F	468	N/A	0.89	81.4	F	468	N/A	0.89		81.4	F	468	N/A	0.89
SB left/through		57.2	E	291	N/A	0.70	64.7	E	367	N/A	0.84	65.1	E	370	N/A	0.84		65.1	E	370	N/A	0.84
SB right		113.3	F	656	200	1.12	357.4	F	1193	200	1.71	419.9	F	1323	200	1.86		419.9	F	1323	200	1.86
I-35 NBFR & Riverside Dr	Signal	99.0	F				164.6	F				166.5	F				Signal	166.5	F			
EB left		6.9	A	83	N/A	0.63	12.3	B	113	N/A	0.81	12.7	B	97	N/A	0.83		12.7	B	97	N/A	0.83
EB through		1.6	A	2	N/A	0.33	3.5	A	2	N/A	0.41	4.0	A	2	N/A	0.41		4.0	A	2	N/A	0.41
WB through		49.8	D	345	N/A	0.71	59.7	E	439	N/A	0.87	70.4	E	489	N/A	0.92		70.4	E	489	N/A	0.92
WB right		155.9	F	1187	N/A	1.31	272.5	F	1937	N/A	1.57	272.5	F	1937	N/A	1.57		272.5	F	1937	N/A	1.57
NB left		70.4	E	396	N/A	0.79	163.5	F	715	N/A	1.20	183.0	F	756	N/A	1.26		183.0	F	756	N/A	1.26
NB left/through		176.4	F	704	N/A	1.27	283.7	F	901	N/A	1.53	284.9	F	903	N/A	1.53		284.9	F	903	N/A	1.53
NB right		0.9	A	0	N/A	0.18	1.7	A	5	N/A	0.22	1.7	A	5	N/A	0.22		1.7	A	5	N/A	0.22
S First St & Monroe St	Two-Way Stop	2.2	A				8.8	A				12.4	B				Signal	17.2	B			
EB left/through/right	Stop	40.2	E	0.9	N/A	0.25	166.9	F	3.0	N/A	0.72	294.5	F	3.8	N/A	1.00		48.9	D	51	N/A	0.46
WB left/through/right	Stop	72.1	F	2.0	N/A	0.47	340.8	F	5.1	N/A	1.20	476.3	F	5.7	N/A	1.45		29.4	C	49	N/A	0.39
NB left/through/right	Yield	8.1	A	0.1	N/A	0.04	8.3	A	0.1	N/A	0.05	8.4	A	0.1	N/A	0.05		18.9	B	1266	N/A	0.93
SB left/through/right	Yield	16.9	C	0.1	N/A	0.02	23.1	C	0.1	N/A	0.04	25.3	D	0.1	N/A	0.05		3.3	A	65	N/A	0.18
Barton Springs Rd Extension & Driveway A												4.9	A				Two-Way Stop	4.8	A			
EB left/through		~	~	~	~	~	~	~	~	~	~	7.7	A	0.4	N/A	0.12	Yield	7.7	A	0.4	N/A	0.12

* 95th Queue is reported in feet for signalized intersections and vehicles for unsignalized intersections
** V/C: Volume to Capacity ratio
~ Movement does not exist under this condition

Table 12. 2029 Intersection Analysis Results for AM Peak

Intersection	AM Peak																					
	Traffic Control Type	2020 Existing (Adjusted)					2029 Forecasted (without site)					2029Site + Forecasted (No Improvements)					2029 Site + Forecasted (With Improvements)					
		Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Traffic Control Type	Delay	LOS	95 th * Queue	Bay Length	V/C **
WB through/right		~	~	~	~	~	~	~	~	~	~	N/A	N/A	N/A	N/A	N/A	Free	N/A	N/A	N/A	N/A	N/A
SB left		~	~	~	~	~	~	~	~	~	~	16.0	C	0.3	N/A	0.08	Stop	13.7	B	0.2	N/A	0.07
SB right		~	~	~	~	~	~	~	~	~	~	9.6	A	0.9	N/A	0.24	Stop	9.6	A	0.9	100	0.24
Barton Springs Rd Extension & Driveway B												4.4	A				Two-Way Stop	4.3	A			
EB left/through		~	~	~	~	~	~	~	~	~	~	7.7	A	0.5	N/A	0.13	Yield	7.7	A	0.5	N/A	0.13
WB through/right		~	~	~	~	~	~	~	~	~	~	N/A	N/A	N/A	N/A	N/A	Free	N/A	N/A	N/A	N/A	N/A
SB left		~	~	~	~	~	~	~	~	~	~	14.5	B	0.1	N/A	0.04	Stop	12.8	B	0.1	N/A	0.03
SB right		~	~	~	~	~	~	~	~	~	~	8.7	A	0.1	N/A	0.04	Stop	8.7	A	0.1	100	0.04
Barton Springs Rd Extension & Driveway C												3.8	A				Two-Way Stop	3.6	A			
EB left/through		~	~	~	~	~	~	~	~	~	~	8.4	A	0.4	N/A	0.12	Yield	8.4	A	0.4	N/A	0.12
WB through/right		~	~	~	~	~	~	~	~	~	~	N/A	N/A	N/A	N/A	N/A	Free	N/A	N/A	N/A	N/A	N/A
SB left		~	~	~	~	~	~	~	~	~	~	15.0	C	0.5	N/A	0.14	Stop	12.9	B	0.4	N/A	0.12
SB right		~	~	~	~	~	~	~	~	~	~	9.3	A	0.0	N/A	0.01	Stop	9.3	A	0.0	100	0.01
Barton Springs Rd Extension & Driveway D																	Two-Way Stop					
EB left/through		~	~	~	~	~	~	~	~	~	~						Yield					
WB through/right		~	~	~	~	~	~	~	~	~	~						Free					
SB left		~	~	~	~	~	~	~	~	~	~						Stop					
SB right		~	~	~	~	~	~	~	~	~	~						Stop					
Congress Ave & Driveway E																						
WB right																						

* 95th Queue is reported in feet for signalized intersections and vehicles for unsignalized intersections
** V/C: Volume to Capacity ratio
~ Movement does not exist under this condition

Table 13. 2029 Intersection Analysis Results for PM Peak

Intersection	PM Peak																					
	Traffic Control Type	2020 Existing (Adjusted)					2029 Forecasted (without site)					2029Site + Forecasted (No Improvements)					2029 Site + Forecasted (With Improvements)					
		Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Traffic Control Type	Delay	LOS	95 th * Queue	Bay Length	V/C **
Lamar Blvd & 6th St	Signal	71.7	E				79.5	E				83.0	F				Signal	83.0	F			
WB left		49.4	D	161	N/A	0.35	50.8	D	191	N/A	0.42	51.0	D	196	N/A	0.43		51.0	D	196	280	0.43
WB through		60.1	E	367	N/A	0.80	73.7	E	476	N/A	0.95	73.7	E	476	N/A	0.95		73.7	E	476	N/A	0.95
WB right		29.9	C	169	N/A	0.47	42.0	D	242	N/A	0.59	42.0	D	242	N/A	0.59		42.0	D	242	N/A	0.59
NB left		33.3	C	186	140	0.67	65.8	E	215	140	0.94	80.0	E	216	140	1.00		80.0	E	216	140	1.00
NB through		74.0	E	588	N/A	0.51	77.6	E	695	N/A	0.62	79.0	E	702	N/A	0.66		79.0	E	702	N/A	0.66
SB through/right		91.6	F	830	N/A	0.92	96.7	F	1218	N/A	1.11	103.2	F	1248	N/A	1.13		103.2	F	1248	N/A	1.13
Lamar Blvd & 5th St	Signal	60.1	E				79.7	E				79.7	E				Signal	79.7	E			
EB left		60.0	E	257	N/A	0.57	58.7	E	305	N/A	0.60	58.4	E	305	N/A	0.60		58.4	E	305	N/A	0.60
EB through/right		60.2	E	299	N/A	0.80	63.4	E	380	N/A	0.88	63.5	E	383	N/A	0.88		63.5	E	383	N/A	0.88
EB right		65.6	E	351	N/A	0.81	79.0	E	529	N/A	0.92	82.5	F	553	N/A	0.94		82.5	F	553	N/A	0.94
NB through/right		79.8	E	684	N/A	0.76	96.0	F	1072	N/A	0.99	93.6	F	1215	N/A	1.07		93.6	F	1215	N/A	1.07
SB left		67.7	E	68	140	0.26	67.6	E	70	140	0.31	67.7	E	68	140	0.31		67.7	E	68	140	0.31
SB through		42.8	D	725	N/A	0.66	78.0	E	755	N/A	0.82	78.6	E	760	N/A	0.84		78.6	E	760	N/A	0.84
Cesar Chavez St & BR Reynolds Dr	Signal	40.9	D				63.8	E				72.8	E				Signal	69.4	E			
EB left		273.6	F	584	250	1.48	464.3	F	727	250	1.93	490.6	F	754	250	1.99		490.6	F	754	250	1.99
EB through		2.2	A	22	N/A	0.07	4.4	A	222	N/A	0.52	4.6	A	234	N/A	0.54		4.6	A	234	N/A	0.54
WB through		10.7	B	396	N/A	0.80	46.9	D	500	N/A	0.96	59.5	E	481	N/A	0.98		52.6	D	506	N/A	0.98
WB right		3.1	A	38	100	0.19	5.0	A	39	100	0.23	5.1	A	36	100	0.23		5.1	A	39	100	0.23
SB left		70.8	E	108	N/A	0.39	71.9	E	124	N/A	0.43	91.1	F	220	N/A	0.74		91.1	F	220	N/A	0.74
SB right		48.4	D	196	155	0.45	56.7	E	250	155	0.55	57.0	E	251	155	0.56		57.0	E	251	285	0.56
Cesar Chavez St & Sandra Muraida Way	Signal	25.3	C				45.0	D				54.5	D				Signal	46.0	D			
EB through		13.3	B	374	N/A	0.53	11.1	B	516	N/A	0.65	13.3	B	598	N/A	0.68		13.3	B	598	N/A	0.68

Table 13. 2029 Intersection Analysis Results for PM Peak

Intersection	PM Peak																					
	Traffic Control Type	2020 Existing (Adjusted)					2029 Forecasted (without site)					2029Site + Forecasted (No Improvements)					2029 Site + Forecasted (With Improvements)					
		Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Traffic Control Type	Delay	LOS	95 th * Queue	Bay Length	V/C **
WB through/right		25.9	C	818	N/A	0.79	53.8	D	1289	N/A	1.01	72.2	E	1412	N/A	1.07		~	~	~	~	~
WB through		~	~	~	~	~	~	~	~	~	~	~	~	~	~	~		56.7	E	1311	N/A	1.02
WB right		~	~	~	~	~	~	~	~	~	~	~	~	~	~	~		11.3	B	57	75	0.09
SB left		48.7	D	60	N/A	0.11	49.1	D	69	N/A	0.13	49.1	D	69	N/A	0.13		49.1	D	69	N/A	0.13
SB right		59.6	E	483	N/A	0.83	119.5	F	675	N/A	0.92	120.2	F	676	N/A	0.92		120.2	F	676	N/A	0.92
Lamar Blvd & Barton Springs Rd	Signal	62.0	E				69.2	E				111.8	F				Signal	111.8	F			
EB left		89.0	F	206	230	0.84	148.2	F	321	230	1.13	138.5	F	308	230	1.10		138.5	F	308	230	1.10
EB through		71.4	E	290	N/A	0.81	75.2	E	397	N/A	0.89	76.1	E	407	N/A	0.90		76.1	E	407	N/A	0.90
EB right		29.8	C	176	100	0.63	39.7	D	259	100	0.71	37.6	D	246	100	0.68		37.6	D	246	100	0.68
WB left		66.5	E	227	290	0.65	82.3	F	325	290	0.88	80.7	F	309	290	0.86		80.7	F	309	290	0.86
WB through		69.9	E	426	N/A	0.89	107.8	F	668	N/A	1.08	111.5	F	680	N/A	1.09		111.5	F	680	N/A	1.09
WB right		7.8	A	70	320	0.43	10.9	B	109	320	0.49	15.8	B	169	320	0.59		15.8	B	169	320	0.59
NB left		56.6	E	170	185	0.75	70.8	E	250	185	0.86	68.5	E	238	185	0.84		68.5	E	238	185	0.84
NB through		33.7	C	259	N/A	0.41	37.5	D	334	N/A	0.54	37.1	D	323	N/A	0.52		37.1	D	323	N/A	0.52
NB right		5.2	A	57	165	0.27	9.4	A	105	165	0.35	8.9	A	102	165	0.36		8.9	A	102	165	0.36
SB left		22.9	C	109	230	0.33	37.3	D	135	230	0.49	35.0	D	131	230	0.46		35.0	D	131	230	0.46
SB through		98.0	F	1304	N/A	1.12	88.6	F	1138	N/A	1.08	228.4	F	1715	N/A	1.43		228.4	F	1715	N/A	1.43
SB right		18.8	B	365	N/A	0.63	31.9	C	643	N/A	0.85	31.1	C	620	N/A	0.83		31.1	C	620	N/A	0.83
Cesar Chavez St & Guadalupe St	Signal	34.9	C				76.0	E				99.9	F				Signal	99.9	F			
EB through		15.9	B	100	N/A	0.21	16.4	B	122	N/A	0.26	16.4	B	122	N/A	0.26		16.4	B	122	N/A	0.26
EB right		43.4	D	819	100	0.94	101.2	F	1112	100	1.13	148.0	F	1281	100	1.25		148.0	F	1281	100	1.25
WB through		10.4	B	121	N/A	0.48	15.7	B	168	N/A	0.60	29.2	C	457	N/A	0.66		29.2	C	457	N/A	0.66
SB left/through		52.2	D	641	N/A	0.98	122.0	F	875	N/A	1.18	151.1	F	954	N/A	1.25		151.1	F	954	N/A	1.25

Table 13. 2029 Intersection Analysis Results for PM Peak

Intersection	PM Peak																					
	Traffic Control Type	2020 Existing (Adjusted)					2029 Forecasted (without site)					2029Site + Forecasted (No Improvements)					2029 Site + Forecasted (With Improvements)					
		Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Traffic Control Type	Delay	LOS	95 th * Queue	Bay Length	V/C **
SB right		13.3	B	108	N/A	0.33	19.8	B	162	N/A	0.40	19.8	B	162	N/A	0.40		19.8	B	162	N/A	0.40
Cesar Chavez St & Lavaca St	Signal	26.3	C				25.1	C				26.3	C				Signal	26.3	C			
EB left		22.4	C	17	N/A	0.37	22.5	C	19	N/A	0.41	22.4	C	19	N/A	0.40		22.4	C	19	N/A	0.40
EB through		20.0	B	267	N/A	0.56	16.0	B	296	N/A	0.59	17.2	B	309	N/A	0.61		17.2	B	309	N/A	0.61
WB through/right		47.4	D	273	N/A	0.81	40.7	D	294	N/A	0.82	41.9	D	292	N/A	0.82		41.9	D	292	N/A	0.82
NB left/through		16.8	B	187	N/A	0.33	23.0	C	286	N/A	0.47	24.9	C	359	N/A	0.57		24.9	C	359	N/A	0.57
NB right		2.7	A	28	N/A	0.14	4.8	A	50	N/A	0.20	5.7	A	56	N/A	0.21		5.7	A	56	N/A	0.21
S 1st St & Riverside Dr	Signal	44.6	D				98.6	F				149.7	F				Signal	149.7	F			
EB left		96.8	F	83	290	0.55	147.3	F	137	290	0.87	147.3	F	137	290	0.87		147.3	F	137	290	0.87
EB through/right		26.0	C	61	N/A	0.17	40.8	D	154	N/A	0.35	41.4	D	161	N/A	0.36		41.4	D	161	N/A	0.36
WB left		49.2	D	49	125	0.12	48.6	D	52	125	0.19	188.1	F	304	125	1.25		188.1	F	304	125	1.25
WB through/right		69.1	E	313	N/A	0.92	150.5	F	545	N/A	1.21	273.7	F	593	N/A	1.52		273.7	F	593	N/A	1.52
NB left		165.8	F	300	100	1.06	575.2	F	351	100	2.13	573.7	F	349	100	2.13		573.7	F	349	100	2.13
NB through/right		32.7	C	254	N/A	0.39	35.4	D	350	N/A	0.54	34.5	C	348	N/A	0.54		34.5	C	348	N/A	0.54
SB left		97.6	F	765	300	1.03	241.4	F	1039	300	1.42	338.2	F	1246	300	1.66		338.2	F	1246	300	1.66
SB through/right		23.9	C	593	N/A	0.76	50.3	D	843	N/A	0.91	79.3	E	908	N/A	0.95		79.3	E	908	N/A	0.95
Barton Springs Rd & S 1st St	Signal	31.8	C				68.3	E				90.1	F				Signal	90.1	F			
EB left		83.0	F	143	165	0.78	99.9	F	219	165	0.93	99.9	F	219	165	0.93		99.9	F	219	165	0.93
EB through/right		62.1	E	306	N/A	0.84	65.4	E	394	N/A	0.90	70.0	E	460	N/A	0.94		70.0	E	460	N/A	0.94
WB left		40.6	D	95	125	0.70	71.9	E	269	125	0.92	242.0	F	429	125	1.44		242.0	F	429	125	1.44
WB through/right		35.8	D	213	N/A	0.85	77.9	E	592	N/A	1.04	100.7	F	500	N/A	1.12		100.7	F	500	N/A	1.12
NB left		56.6	E	257	80	0.78	175.7	F	324	80	1.23	175.7	F	324	80	1.23		175.7	F	324	80	1.23
NB through/right		20.4	C	191	N/A	0.27	24.5	C	239	N/A	0.37	28.1	C	256	N/A	0.44		28.1	C	256	N/A	0.44

Table 13. 2029 Intersection Analysis Results for PM Peak

Intersection	PM Peak																					
	Traffic Control Type	2020 Existing (Adjusted)					2029 Forecasted (without site)					2029Site + Forecasted (No Improvements)					2029 Site + Forecasted (With Improvements)					
		Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Traffic Control Type	Delay	LOS	95 th * Queue	Bay Length	V/C **
SB left		7.9	A	6	85	0.06	11.5	B	9	85	0.10	15.1	B	37	85	0.39		15.1	B	37	85	0.39
SB through		22.9	C	878	N/A	0.91	88.7	F	1167	N/A	1.14	115.1	F	1201	N/A	1.20		115.1	F	1201	N/A	1.20
SB right		2.6	A	25	N/A	0.50	6.2	A	86	N/A	0.63	9.9	A	90	N/A	0.71		9.9	A	90	N/A	0.71
Barton Springs Rd & Riverside Dr	Signal	18.9	B				40.0	D				64.6	E				Signal	65.7	E			
NE left/through		13.4	B	23	N/A	0.16	18.9	B	44	N/A	0.26	25.4	C	77	N/A	0.41		25.4	C	77	N/A	0.41
NE right		4.1	A	36	N/A	0.52	15.3	B	102	N/A	0.82	71.0	E	251	N/A	1.01		71.0	E	251	N/A	1.01
NW left		14.3	B	82	291	0.52	39.3	D	240	291	0.75	64.7	E	324	291	0.98		64.7	E	324	291	0.98
NW through/right		6.2	A	53	N/A	0.21	6.8	A	83	N/A	0.33	4.9	A	62	N/A	0.40		4.9	A	62	N/A	0.40
SE left		3.7	A	1	105	0.01	7.6	A	5	105	0.04	7.9	A	16	105	0.23		7.9	A	16	105	0.23
SE through/right		17.1	B	305	N/A	0.34	34.1	C	351	N/A	0.52	54.4	D	338	N/A	0.65		54.4	D	338	N/A	0.65
SW left/through/right		40.0	D	368	N/A	0.72	96.9	F	507	N/A	0.90	126.5	F	546	N/A	1.18		131.1	F	774	N/A	1.18
Congress Ave & 7th St	Signal	18.1	B				21.9	C				38.9	D				Signal	38.9	D			
EB left		25.4	C	45	N/A	0.06	~	~	~	~	~	~	~	~	~	~		~	~	~	~	~
EB left/through/right		~	~	~	~	~	27.8	C	190	N/A	0.45	~	~	~	~	~		28.5	C	196	N/A	0.46
EB left/through		~	~	~	~	~	~	~	~	~	~	28.5	C	196	N/A	0.46		~	~	~	~	~
EB through/right		27.1	C	193	N/A	0.45	~	~	~	~	~	~	~	~	~	~		~	~	~	~	~
NB through/right		7.6	A	104	N/A	0.20	5.7	A	118	N/A	0.37	5.9	A	108	N/A	0.39		5.9	A	108	N/A	0.39
SB left/through		16.4	B	187	N/A	0.41	26.3	C	462	N/A	0.77	66.1	E	523	N/A	0.83		66.1	E	523	N/A	0.83
Congress Ave & 6th St	Signal	17.1	B				45.9	D				69.5	E				Signal	69.5	E			
WB left/through/right		21.8	C	200	N/A	0.41	23.0	C	246	N/A	0.49	23.0	C	247	N/A	0.49		23.0	C	247	N/A	0.49
NB left		~	~	~	~	~	80.6	F	191	75	0.87	83.3	F	226	75	0.88		83.3	F	226	75	0.88
NB left/through		6.9	A	40	N/A	0.95	~	~	~	~	~	~	~	~	~	~		~	~	~	~	~
NB through		~	~	~	~	~	10.6	B	103	N/A	0.37	10.9	B	116	N/A	0.40		10.9	B	116	N/A	0.40

* 95th Queue is reported in feet for signalized intersections and vehicles for unsignalized intersections
** V/C: Volume to Capacity ratio
~ Movement does not exist under this condition

Table 13. 2029 Intersection Analysis Results for PM Peak

Intersection	PM Peak																					
	Traffic Control Type	2020 Existing (Adjusted)					2029 Forecasted (without site)					2029Site + Forecasted (No Improvements)					2029 Site + Forecasted (With Improvements)					
		Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Traffic Control Type	Delay	LOS	95 th * Queue	Bay Length	V/C **
SB through/right		18.0	B	167	N/A	0.45	90.5	F	550	N/A	0.91	142.0	F	852	N/A	1.22		142.0	F	852	N/A	1.22
Congress Ave & 5th St	Signal	17.1	B				26.1	C				28.4	C				Signal	28.4	C			
EB left		26.9	C	76	N/A	0.12	24.4	C	86	N/A	0.13	27.3	C	86	N/A	0.15		27.3	C	86	N/A	0.15
EB through/right		29.9	C	227	N/A	0.50	27.4	C	284	N/A	0.51	32.9	C	290	N/A	0.61		32.9	C	290	N/A	0.61
NB through/right		12.3	B	116	N/A	0.32	29.3	C	276	N/A	0.74	30.1	C	276	N/A	0.69		30.1	C	276	N/A	0.69
SB left		~	~	~	~	~	22.4	C	25	70	0.40	14.8	B	14	70	0.36		14.8	B	14	70	0.36
SB left/through		10.9	B	115	N/A	0.54	~	~	~	~	~	~	~	~	~	~		~	~	~	~	~
SB through		~	~	~	~	~	23.3	C	240	N/A	0.85	24.7	C	153	N/A	0.80		24.7	C	153	N/A	0.80
Congress Ave & Cesar Chavez St	Signal	114.5	F				163.6	F				184.4	F				Signal	184.4	F			
EB left		10.2	B	40	140	0.20	12.0	B	42	140	0.31	12.0	B	41	140	0.31		12.0	B	41	140	0.31
EB through		33.0	C	192	N/A	0.42	32.9	C	226	N/A	0.52	32.6	C	226	N/A	0.52		32.6	C	226	N/A	0.52
EB right		29.8	C	304	180	0.70	41.3	D	417	180	0.88	51.9	D	481	180	0.94		51.9	D	481	180	0.94
WB left		66.5	E	227	135	0.79	87.2	F	309	135	0.96	98.4	F	332	135	1.02		98.3	F	332	135	1.02
WB through/right		48.0	D	357	N/A	0.70	64.1	E	567	N/A	0.84	63.8	E	564	N/A	0.84		63.7	E	564	N/A	0.84
NB left		~	~	~	~	~	664.8	F	307	150	2.32	664.8	F	307	150	2.32		664.8	F	307	150	2.32
NB left/through/right		376.8	F	618	N/A	1.81	~	~	~	~	~	~	~	~	~	~		~	~	~	~	~
NB through		~	~	~	~	~	362.3	F	903	N/A	1.72	409.8	F	972	N/A	1.83		409.8	F	972	N/A	1.83
NB right		13.9	B	111	125	0.53	22.6	C	172	125	0.64	20.7	C	231	125	0.61		20.7	C	231	125	0.61
SB left		~	~	~	~	~	10.4	B	24	120	0.17	10.8	B	22	120	0.17		10.8	B	22	120	0.17
SB left/through/right		26.6	C	385	N/A	0.92	~	~	~	~	~	~	~	~	~	~		~	~	~	~	~
Congress Ave & Barton Springs Rd/Barton Springs Rd Extension	Signal	18.5	B				35.1	D				101.8	F				Signal	61.9	E			
EB left		47.0	D	96	N/A	0.59	47.4	D	136	N/A	0.69	51.5	D	141	N/A	0.69		71.6	E	178	N/A	0.85
EB through/right		8.1	A	57	N/A	0.32	8.5	A	60	N/A	0.32	58.9	E	305	N/A	0.60		132.7	F	361	N/A	0.90

Table 13. 2029 Intersection Analysis Results for PM Peak

Intersection	PM Peak																					
	Traffic Control Type	2020 Existing (Adjusted)					2029 Forecasted (without site)					2029Site + Forecasted (No Improvements)					2029 Site + Forecasted (With Improvements)					
		Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Traffic Control Type	Delay	LOS	95 th * Queue	Bay Length	V/C **
WB left		~	~	~	~	~	~	~	~	~	~	~	~	~	~		61.8	E	143	N/A	0.47	
WB left/through		79.2	E	64	N/A	0.42	79.7	E	64	N/A	0.43	637.7	F	895	N/A	2.32		~	~	~	~	~
WB through/right		~	~	~	~	~	~	~	~	~	~	~	~	~	~		65.3	E	293	N/A	0.89	
WB right		1.1	A	0	N/A	0.12	1.6	A	0	N/A	0.14	32.2	C	183	N/A	0.70		~	~	~	~	~
NB left		21.5	C	68	150	0.56	33.8	C	52	100	0.67	35.1	D	41	100	0.71		38.4	D	41	100	0.74
NB through		19.3	B	406	N/A	0.31	27.2	C	225	N/A	0.57	28.2	C	161	N/A	0.65		35.6	D	198	N/A	0.76
NB right		0.0	A	0	100	0.01	0.0	A	0	105	0.01	3.7	A	7	105	0.17		3.8	A	7	105	0.19
SB left		6.1	A	12	75	0.05	7.5	A	13	70	0.07	198.2	F	249	70	1.30		65.1	E	259	70	0.89
SB through/right		15.8	B	581	N/A	0.67	~	~	~	~	~	~	~	~	~	~		~	~	~	~	~
SB through		~	~	~	~	~	46.9	D	1203	N/A	0.90	86.8	F	1203	N/A	1.02		86.8	F	1254	N/A	1.05
SB right		~	~	~	~	~	15.1	B	443	100	0.62	18.3	B	423	100	0.68		21.5	C	474	100	0.69
Congress Ave & Riverside Dr	Signal	43.7	D				108.1	F				131.3	F				Signal	127.4	F			
EB left		13.8	B	16	170	0.08	17.0	B	15	170	0.15	107.8	F	173	170	1.04		107.8	F	173	170	1.04
EB through		29.2	C	487	N/A	0.63	55.2	E	726	N/A	1.00	66.6	E	736	N/A	1.06		66.6	E	736	N/A	1.06
EB right		10.9	B	62	N/A	0.29	12.7	B	87	N/A	0.48	12.0	B	85	N/A	0.48		12.0	B	85	N/A	0.48
WB left		41.7	D	214	140	0.65	147.0	F	367	140	1.17	283.8	F	372	140	1.56		296.0	F	514	140	1.56
WB through/right		34.8	C	455	N/A	0.55	45.7	D	606	N/A	0.79	96.8	F	730	N/A	1.11		99.7	F	901	N/A	1.11
NB left		76.0	E	77	270	0.56	82.2	F	125	215	0.75	82.2	F	125	215	0.75		82.2	F	125	215	0.75
NB through/right		59.6	E	376	N/A	0.88	~	~	~	~	~	~	~	~	~	~		~	~	~	~	~
NB through		~	~	~	~	~	336.9	F	884	N/A	1.66	353.9	F	910	N/A	1.70		353.9	F	910	N/A	1.70
NB right		~	~	~	~	~	27.6	C	164	200	0.58	33.1	C	196	200	0.64		32.7	C	196	200	0.64
SB left		65.0	E	364	180	0.94	58.3	E	371	180	0.78	102.0	F	319	180	0.78		52.6	D	319	180	0.78
SB through/right		39.0	D	400	N/A	0.58	82.1	F	835	N/A	1.02	84.6	F	717	N/A	1.08		83.3	F	721	N/A	1.08

* 95th Queue is reported in feet for signalized intersections and vehicles for unsignalized intersections
** V/C: Volume to Capacity ratio
~ Movement does not exist under this condition

Table 13. 2029 Intersection Analysis Results for PM Peak

Intersection	PM Peak																					
	Traffic Control Type	2020 Existing (Adjusted)					2029 Forecasted (without site)					2029Site + Forecasted (No Improvements)					2029 Site + Forecasted (With Improvements)					
		Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Traffic Control Type	Delay	LOS	95 th * Queue	Bay Length	V/C **
Congress Ave & Monroe St	Signal	16.2	B				21.7	C				25.0	C				Signal	25.0	C			
EB left/through/right		40.6	D	103	N/A	0.27	42.8	D	121	N/A	0.33	42.8	D	121	N/A	0.33		42.8	D	121	N/A	0.33
WB left/through/right		32.3	C	116	N/A	0.33	36.3	D	142	N/A	0.39	36.2	D	143	N/A	0.40		36.2	D	143	N/A	0.40
NB left		6.8	A	13	100	0.14	9.9	A	15	100	0.24	9.9	A	15	100	0.24		9.9	A	15	100	0.24
NB through/right		9.7	A	137	N/A	0.27	10.5	B	182	N/A	0.34	10.7	B	194	N/A	0.36		10.7	B	194	N/A	0.36
SB left		5.4	A	15	100	0.05	5.7	A	17	100	0.08	5.9	A	19	100	0.09		5.9	A	19	100	0.09
SB through/right		16.6	B	528	N/A	0.70	24.3	C	849	N/A	0.88	29.5	C	993	N/A	0.93		29.5	C	993	N/A	0.93
Commercial Dr/Riverside Dr Access & Riverside Dr	Signal	17.9	B				21.8	C				107.7	F				Signal	26.1	C			
EB left		8.3	A	7	100	0.03	9.8	A	6	100	0.04	46.1	D	67	100	0.41		21.9	C	44	100	0.44
EB through/right		19.3	B	803	N/A	0.57	25.7	C	1100	N/A	0.81	87.1	F	1068	N/A	0.98		24.0	C	730	N/A	0.86
WB left		2.3	A	1	100	0.02	4.3	A	1	100	0.05	7.5	A	2	100	0.07		4.8	A	1	100	0.07
WB through/right		3.0	A	86	N/A	0.37	5.1	A	177	N/A	0.52	18.1	B	655	N/A	0.82		6.3	A	174	N/A	0.63
NB left/through/right		36.7	D	32	N/A	0.07	34.0	C	31	N/A	0.06	26.8	C	29	N/A	0.04		57.8	E	41	N/A	0.22
SB left		~	~	~	~	~	~	~	~	~	~	~	~	~	~	~		113.2	F	547	600	1.03
SB left/through/right		67.2	E	233	N/A	0.84	76.0	E	268	N/A	0.83	318.4	F	1282	N/A	1.62		27.2	C	300	N/A	0.82
IH 35 SB FR & 7th St	Signal	21.2	C				23.3	C				23.2	C				Signal	23.2	C			
EB through/right		18.2	B	226	N/A	0.41	24.5	C	302	N/A	0.55	23.7	C	307	N/A	0.54		23.7	C	307	N/A	0.54
SB left		14.5	B	92	N/A	0.23	13.4	B	107	N/A	0.24	14.0	B	107	N/A	0.25		14.0	B	107	N/A	0.25
SB through		26.9	C	203	N/A	0.45	23.3	C	234	N/A	0.46	24.3	C	234	N/A	0.48		24.3	C	234	N/A	0.48
IH 35 NB FR & 7th St	Signal	34.3	C				48.1	D				53.9	D				Signal	53.9	D			
EB left		17.2	B	211	N/A	0.39	22.4	C	272	N/A	0.55	23.6	C	277	N/A	0.56		23.6	C	277	N/A	0.56
EB through		2.5	A	34	N/A	0.34	3.4	A	43	N/A	0.45	3.3	A	43	N/A	0.45		3.3	A	43	N/A	0.45
WB right		29.1	C	138	N/A	0.49	35.4	D	181	N/A	0.61	34.0	C	181	N/A	0.58		34.0	C	181	N/A	0.58

* 95th Queue is reported in feet for signalized intersections and vehicles for unsignalized intersections
** V/C: Volume to Capacity ratio
~ Movement does not exist under this condition

Table 13. 2029 Intersection Analysis Results for PM Peak

Intersection	PM Peak																					
	Traffic Control Type	2020 Existing (Adjusted)					2029 Forecasted (without site)					2029Site + Forecasted (No Improvements)					2029 Site + Forecasted (With Improvements)					
		Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Traffic Control Type	Delay	LOS	95 th * Queue	Bay Length	V/C **
NB through		64.3	E	368	N/A	0.85	93.2	F	400	N/A	0.84	107.2	F	405	N/A	0.88		107.2	F	405	N/A	0.88
NB right		23.0	C	96	N/A	0.27	24.5	C	121	N/A	0.29	29.4	C	127	N/A	0.31		29.4	C	127	N/A	0.31
IH 35 SB FR & 6th St	Signal	51.2	D				58.6	E				61.2	E				Signal	61.2	E			
WB left		28.2	C	357	100	0.58	28.7	C	413	100	0.65	31.8	C	446	100	0.71		31.8	C	446	100	0.71
WB through		18.8	B	76	N/A	0.30	18.9	B	87	N/A	0.33	20.0	B	97	N/A	0.35		20.0	B	97	N/A	0.35
SB left		26.9	C	40	N/A	0.02	23.6	C	38	N/A	0.03	24.8	C	39	N/A	0.03		24.8	C	39	N/A	0.03
SB through		75.1	E	465	N/A	0.48	88.8	F	522	N/A	0.56	91.2	F	565	N/A	0.61		91.2	F	565	N/A	0.61
SB right		18.6	B	81	N/A	0.11	15.9	B	87	N/A	0.12	16.1	B	86	N/A	0.13		16.1	B	86	N/A	0.13
IH 35 NB FR & 6th St	Signal	18.1	B				20.1	C				20.7	C				Signal	20.7	C			
EB left		58.0	E	21	100	0.03	57.0	E	21	100	0.04	63.1	E	45	100	0.12		63.1	E	45	100	0.12
EB through		57.9	E	41	N/A	0.03	56.1	E	40	N/A	0.03	55.1	E	23	N/A	0.01		55.1	E	23	N/A	0.01
WB through/right		38.2	D	200	N/A	0.50	39.7	D	243	N/A	0.55	39.3	D	247	N/A	0.54		39.3	D	247	N/A	0.54
NB left/through/right		11.4	B	217	N/A	0.40	13.7	B	274	N/A	0.49	14.4	B	278	N/A	0.51		14.4	B	278	N/A	0.51
IH 35 SB FR & Cesar Chavez St	Signal	45.2	D				81.9	F				92.2	F				Signal	92.3	F			
EB through		47.1	D	319	N/A	0.65	49.0	D	413	N/A	0.76	42.7	D	424	N/A	0.75		42.9	D	425	N/A	0.75
EB right		36.7	D	334	100	0.77	47.2	D	473	100	0.88	43.9	D	546	100	0.89		44.0	D	546	100	0.89
WB left/through		4.3	A	13	N/A	0.53	6.1	A	16	N/A	0.49	6.2	A	16	N/A	0.48		6.2	A	16	N/A	0.48
SB left/through/right		114.9	F	505	N/A	1.09	274.5	F	625	N/A	1.51	337.6	F	626	N/A	1.66		337.6	F	626	N/A	1.66
SB right		1.9	A	0	N/A	0.27	4.7	A	19	N/A	0.36	5.5	A	27	N/A	0.39		5.5	A	27	N/A	0.39
IH 35 NB FR & Cesar Chavez St	Signal	84.1	F				122.0	F				121.3	F				Signal	121.3	F			
EB left		14.0	B	455	N/A	0.74	5.6	A	21	N/A	0.47	5.6	A	21	N/A	0.49		5.6	A	21	N/A	0.49
EB through		2.1	A	19	N/A	0.23	8.5	A	117	N/A	0.55	8.4	A	114	N/A	0.56		8.4	A	114	N/A	0.56
WB through/right		46.8	D	345	N/A	0.78	62.4	E	480	N/A	0.94	63.1	E	482	N/A	0.95		63.1	E	482	N/A	0.95

* 95th Queue is reported in feet for signalized intersections and vehicles for unsignalized intersections
** V/C: Volume to Capacity ratio
~ Movement does not exist under this condition

Table 13. 2029 Intersection Analysis Results for PM Peak

Intersection	PM Peak																					
	Traffic Control Type	2020 Existing (Adjusted)					2029 Forecasted (without site)					2029Site + Forecasted (No Improvements)					2029 Site + Forecasted (With Improvements)					
		Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Traffic Control Type	Delay	LOS	95 th * Queue	Bay Length	V/C **
NB left		61.9	E	328	N/A	0.76	80.5	F	427	N/A	0.92	80.5	F	427	N/A	0.92		80.5	F	427	N/A	0.92
NB left/through		209.1	F	646	N/A	1.36	320.0	F	807	N/A	1.62	320.0	F	807	N/A	1.62		320.0	F	807	N/A	1.62
NB right		13.8	B	108	N/A	0.52	20.3	C	162	N/A	0.63	20.3	C	162	N/A	0.63		20.3	C	162	N/A	0.63
IH 35 SB FR & Riverside Dr	Signal	74.1	E				151.4	F				169.8	F				Signal	173.1	F			
EB through/right		70.9	E	625	N/A	0.99	190.3	F	562	N/A	1.34	234.5	F	643	N/A	1.46		242.6	F	1099	N/A	1.46
WB left		16.1	B	14	N/A	0.61	60.3	E	36	N/A	0.73	59.9	E	35	N/A	0.73		59.9	E	35	N/A	0.73
WB through		2.5	A	0	N/A	0.28	9.5	A	0	N/A	0.36	15.6	B	0	N/A	0.37		15.6	B	0	N/A	0.37
SB left		158.5	F	741	N/A	1.20	247.5	F	925	N/A	1.43	247.5	F	925	N/A	1.43		247.5	F	925	N/A	1.43
SB left/through		135.1	F	653	N/A	1.16	223.6	F	833	N/A	1.39	223.6	F	833	N/A	1.39		223.6	F	833	N/A	1.39
SB right		12.4	B	87	200	0.39	30.0	C	226	200	0.64	31.9	C	256	200	0.70		31.9	C	256	200	0.70
IH 35 NB FR & Riverside Dr	Signal	37.6	D				65.5	E				70.1	E				Signal	70.1	E			
EB left		6.3	A	37	N/A	0.47	35.1	D	41	N/A	0.66	57.1	E	37	N/A	0.70		57.1	E	37	N/A	0.70
EB through		19.0	B	10	N/A	0.52	51.0	D	10	N/A	0.63	52.3	D	10	N/A	0.68		52.3	D	10	N/A	0.68
WB through		58.7	E	343	N/A	0.81	84.0	F	467	N/A	0.98	95.8	F	492	N/A	1.01		95.8	F	492	N/A	1.01
WB right		2.4	A	0	N/A	0.68	4.5	A	0	N/A	0.81	4.5	A	0	N/A	0.81		4.5	A	0	N/A	0.81
NB left		56.4	E	268	N/A	0.56	68.9	E	408	N/A	0.79	71.9	E	434	N/A	0.82		71.9	E	434	N/A	0.82
NB left/through		101.7	F	555	N/A	1.06	171.1	F	716	N/A	1.26	172.2	F	718	N/A	1.26		172.2	F	718	N/A	1.26
NB right		44.6	D	354	N/A	0.81	67.9	E	502	N/A	0.96	67.9	E	502	N/A	0.96		67.9	E	502	N/A	0.96
S First St & Monroe St	Two-Way Stop	3.3	A				12.2	B				25.8	D				Signal	24.3	C			
EB left/through/right	Stop	N/A	N/A	N/A	N/A	N/A	580.3	F	4.1	N/A	1.40	1399.4	F	5.0	N/A	2.69		43.9	D	44	N/A	0.39
WB left/through/right	Stop	N/A	N/A	N/A	N/A	N/A	308.2	F	5.5	N/A	1.18	654.8	F	7.4	N/A	1.88		35.8	D	63	N/A	0.52
NB left/through/right	Yield	14.3	B	0.1	N/A	0.03	18.1	C	0.2	N/A	0.06	20.7	C	0.2	N/A	0.07		4.6	A	252	N/A	0.47
SB left/through/right	Yield	10.6	B	0.3	N/A	0.10	12.1	B	0.5	N/A	0.15	12.6	B	0.6	N/A	0.17		34.5	C	1467	N/A	1.01

* 95th Queue is reported in feet for signalized intersections and vehicles for unsignalized intersections
** V/C: Volume to Capacity ratio
~ Movement does not exist under this condition

Table 13. 2029 Intersection Analysis Results for PM Peak

Intersection	PM Peak																					
	Traffic Control Type	2020 Existing (Adjusted)					2029 Forecasted (without site)					2029Site + Forecasted (No Improvements)					2029 Site + Forecasted (With Improvements)					
		Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Delay	LOS	95 th * Queue	Bay Length	V/C **	Traffic Control Type	Delay	LOS	95 th * Queue	Bay Length	V/C **
Barton Springs Rd Extension & Driveway A												7.7	A				Two-Way Stop	7.7	A			
EB left/through		~	~	~	~	~	~	~	~	~	~	8.6	A	0.6	N/A	0.17	Yield	8.6	A	0.6	N/A	0.17
WB through/right		~	~	~	~	~	~	~	~	~	~	N/A	N/A	N/A	N/A	N/A	Free	N/A	N/A	N/A	N/A	N/A
SB left		~	~	~	~	~	~	~	~	~	~	37.0	E	2.8	N/A	0.52	Stop	37.0	E	2.8	N/A	0.52
SB right		~	~	~	~	~	~	~	~	~	~	11.2	B	1.4	N/A	0.32	Stop	11.2	B	1.4	100	0.32
Barton Springs Rd Extension & Driveway B												7.5	A				Two-Way Stop	6.6	A			
EB left/through		~	~	~	~	~	~	~	~	~	~	7.8	A	0.3	N/A	0.10	Yield	7.8	A	0.3	N/A	0.10
WB through/right		~	~	~	~	~	~	~	~	~	~	N/A	N/A	N/A	N/A	N/A	Free	N/A	N/A	N/A	N/A	N/A
SB left		~	~	~	~	~	~	~	~	~	~	20.5	C	2.2	N/A	0.44	Stop	16.2	C	1.6	N/A	0.36
SB right		~	~	~	~	~	~	~	~	~	~	9.7	A	0.8	N/A	0.21	Stop	9.7	A	0.8	100	0.21
Barton Springs Rd Extension & Driveway C												9.8	A				Two-Way Stop	7.7	A			
EB left/through		~	~	~	~	~	~	~	~	~	~	7.9	A	0.3	N/A	0.09	Yield	7.9	A	0.3	N/A	0.09
WB through/right		~	~	~	~	~	~	~	~	~	~	N/A	N/A	N/A	N/A	N/A	Free	N/A	N/A	N/A	N/A	N/A
SB left		~	~	~	~	~	~	~	~	~	~	27.1	D	4.6	N/A	0.65	Stop	19.9	C	3.3	N/A	0.55
SB right		~	~	~	~	~	~	~	~	~	~	9.3	A	0.4	N/A	0.11	Stop	9.3	A	0.4	100	0.11

* 95th Queue is reported in feet for signalized intersections and vehicles for unsignalized intersections
** V/C: Volume to Capacity ratio
~ Movement does not exist under this condition

References

1. Texas Department of Transportation
2020 TxDOT Traffic Count Database System, Austin, TX.
2. ASMP
2015 CAMPO 2040 Regional Transportation Plan, Bastrop, Burnet, Caldwell, Hays, Travis and Williamson Counties, Texas.
3. Capital Metro Transit Authority
2019 Capital Metro Schedules and Maps, Austin, Texas.
4. Transportation Research Board
2016 Highway Capacity Manual, 6th Edition, Washington D.C.
5. Trafficware
2017 Synchro 10, Sugar Land, TX.
6. Institute of Transportation Engineers
2017 Trip Generation Manual, An Informational Report, 10th Edition, Washington, D.C.
7. Institute of Transportation Engineers
2012 Trip Generation Handbook, An ITE Proposed Recommended Practice, Washington D.C.