Traffic Impact Study
Lone Sun Brewery

Draft Report

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Prepared for:

Lone Sun Builders

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EXECUTIVE SUMMARY

The following contains a Traffic Impact Study (TIS) for a brewery and warehouse to be located on the southwest corner of El Pueblo Rd and Las Lomitas Dr within the city of Albuquerque (CABQ), NM. This report has been completed by Lee Engineering for Lone Sun Builders. All analyses and items contained herein conform to scoping requirements set forth in the CABQ Traffic Scoping Form dated September 1, 2021. Scoping forms are located in Appendix A.

BACKGROUND

The proposed development will consist of a newly constructed 11.875 ksf warehouse, and a newly constructed building, including a 5.334 ksf brewery and 9.054 ksf taproom, to be located at 8111 Las Lomitas Dr near the intersection of El Pueblo Rd and Las Lomitas Dr within the City of Albuquerque, NM. The development is expected to be completed by 2022. A detailed site plan is included in Figure 2 of this report. Access to the site is to be taken from Las Lomitas Dr via one proposed full access driveway and El Pueblo Rd via one driveway; movements are to be determined by the study. Study Intersections, as shown in Figure 1, include:

- El Pueblo Rd & Edith Blvd
- El Pueblo Rd & Las Lomitas Dr
- El Pueblo Rd & Jacs Ln
- El Pueblo Rd & Site Driveway 2
- Las Lomitas Dr & Site Driveway 1

9-hour turning movement counts were collected on Wednesday, August 25, 2021, for the intersection of El Pueblo Rd and Las Lomitas Dr and on September 22, 2021, for all other study intersections. These volumes were used in the existing conditions analysis. Traffic volumes for opening year scenarios (2022) were projected from 2021 turning movement counts using MRCOG growth rates. Construction is anticipated to begin in 2021, with full completion of the development in 2022. The development is to be constructed in one single phase.

Analysis scenarios for this study include:

1. Existing Conditions (2021)
2. Background - No Build (2022)
3. Full Build – Complete Construction (2022)

EL PUEBLO RD ACCESS (DRIVEWAY 2) ANALYSIS

Three alternatives for a driveway on El Pueblo Rd were analyzed to determine the overall operations of the study area for the proposed development.

CONFIGURATION 1

This configuration analyzes the study area intersections assuming there is no Driveway 2 on El Pueblo Rd. Therefore, all traffic must enter and exit the site using Driveway 1 on Las Lomitas Dr. This configuration is identified as “No Driveway 2” in this report.

The capacity analysis for this configuration shows that, under the full build 2022 conditions, during the PM peak, the northbound left-turn movement of El Pueblo Rd and Las Lomitas Dr will operate below acceptable delay and level of service. This is due to the intersection carrying all EB/WB and NB site traffic entering and exiting the site through Driveway 1. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.

Constructability:

Regardless of the driveway configuration and levels of service, it is recommended that the inner westbound through/left approach lane on El Pueblo Rd at Las Lomitas Dr be converted to a dedicated left-turn lane via re-striping the lane.

Configuration 2

This configuration analyzes the study area intersections assuming there is a restricted partial access Driveway 2 on El Pueblo Rd. Therefore, traffic is allowed to make a right turn in and a right turn out of Driveway 2. All traffic going west and north toward Edith Blvd will be required to exit at Driveway 1. This configuration is identified as "Driveway 2 Right-In/Right-Out" in this report.

The capacity analysis for this configuration shows that, under the full build 2022 conditions, during the PM peak, the northbound left-turn movement of El Pueblo Rd and Las Lomitas Dr will operate below acceptable delay and level of service. This is due to the intersection carrying the WB and some of the NB site traffic exiting the site through Driveway 1. Although the proposed right-in/right-out driveway will decrease the amount of site traffic using the intersection of El Pueblo Rd and Las Lomitas Dr, the intersection is shown to operate below acceptable levels of service.

Per the NMDOT SAMM, the required spacing for a right-in/right-out driveway (partial access) is 225 feet, and the current available spacing of the proposed driveway is 230 feet. Therefore, this spacing meets NMDOT SAMM recommended spacings. Furthermore, based on SAMM criteria, a dedicated right-turn lane is not required for this configuration.

Constructability:

Regardless of the driveway configuration and levels of service, it is recommended that the inner westbound through/left approach lane on El Pueblo Rd at Las Lomitas Dr be converted to a dedicated left-turn lane via re-striping the lane.

For the existing turn lane for the eastbound right turn at Las Lomitas Dr, it is recommended that the turn lane be shortened to approximately 230 feet, including taper between the Driveway 2 and Las Lomitas Dr. This configuration meets SAMM recommendations using the provisions of Chapter 8 Section K.(a).ii and Chapter 8 Section K.(b).ii.

It is recommended that a physical barrier be provided on El Pueblo Rd to prevent left turns into and out of Driveway 2.

Configuration 3

This configuration analyzes the study area intersections assuming full access is provided at Driveway 2 on El Pueblo Rd. This configuration allows entering and exiting traffic to make all movements at Driveway 2. This configuration is identified as "Driveway 2 Full Access" in this report.

The capacity analysis for this configuration shows that, under the full build 2022 conditions, all movements and approaches at all intersections will operate at acceptable levels of service and delay.

Per the NMDOT SAMM, the recommended spacing for a full access driveway is 330 feet, and the current available spacing of the proposed driveway is approximately 250 feet. While this spacing does not meet SAMM recommendations, the expected left turns generated by the proposed development at this driveway are 5 left turns during the mid-day peak and 6 left turns during the PM peak. Therefore, the provided spacing and low volumes of this movement are not likely to significantly impact the operations along El Pueblo Rd. Additionally, and based on the constructability recommendation below, the recommended roadway configuration provides additional areas for turning vehicles.

Based on SAMM criteria, turn lanes are not required for this configuration.

Constructability:

Regardless of the driveway configuration and levels of service, it is recommended that the inner westbound through/left approach lane on El Pueblo Rd at Las Lomitas Dr be converted to a dedicated left-turn lane via re-striping the lane.

For the existing turn lane for the EBR at Las Lomitas Dr, it is recommended that the turn lane be shortened to approximately 230 feet, including taper between the Driveway 2 and Las Lomitas Dr. This configuration meets SAMM recommendations using the provisions of Chapter 8 Section K.(a).ii and Chapter 8 Section K.(b).ii.

It is recommended that the second westbound lane at Driveway 2 be converted to a left turn lane via re-striping the lane.

CONCLUSION AND DRIVEWAY CONFIGURATION RECOMMENDATION

Based on the findings of this report, and information presented regarding driveway configuration, it is recommended that site access be provided via either one full access driveway on Las Lomitas Dr and one full access driveway on El Pueblo Rd or a partial access on El Pueblo Rd with full access to Las Lomitas Dr.

ADDITIONAL RECOMMENDATIONS

- Regardless of the driveway configuration and levels of service, it is recommended that the inner westbound through/left approach lane on El Pueblo Rd at Las Lomitas Dr be converted to a dedicated left-turn lane via re-striping the lane.
- It is recommended that intersection sight distance, as detailed in the sight distance section of this report, be provided/maintained.

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INTRODUCTION

This report details the procedures and findings of a Traffic Impact Study (TIS) performed by Lee Engineering for Lone Sun Builders. This report and the analyses contained herein were performed for a proposed brewery and warehouse to be located on the southwest corner of El Pueblo Rd and Las Lomitas Dr in Albuquerque, NM.

All analyses and items contained herein conform to scoping requirements set forth in the NMDOT Traffic Study Scoping meeting held on September 1, 2021. Scoping meeting notes are located in Appendix A. Analysis procedures, conclusions, and recommendations for this study were developed according to the *ITE Trip Generation Manual 10th Edition, and Highway Capacity Manual 6th Edition*.

Construction is anticipated to begin in 2021, with full completion of the development in 2022. The development is to be constructed in one single phase.

Analysis procedures included in this report were performed for the following scenarios:

1. Existing Conditions (2021)
2. Background - No Build (2022)
3. Full Build – Complete Construction (2022)
    a. Background 2022 traffic volumes plus site trips with no Driveway 2 on El Pueblo Rd
    b. Background 2022 traffic volumes plus site trips with Right-In/Right-Out Driveway 2 on El Pueblo Rd
    c. Background 2022 traffic volumes plus site trips with Full Access Driveway 2 on El Pueblo Rd

PROJECT LOCATION & SITE PLAN

The proposed development will consist of a newly constructed 26.263 ksf building, including a brewery, taproom, and warehouse. The development will be located on the southwest corner of El Pueblo Rd, and Las Lomitas Dr in Albuquerque, NM at 8111 Las Lomitas Dr. Surrounding major intersections include El Pueblo Rd & Edith Blvd. The project area is bounded by existing industrial type development. Adjacent to the proposed development, to the west, is a truck service center. South of the proposed development, along Las Lomitas Dr, consists of industrial and office buildings and single-family residential developments. East of the site is industrial and office buildings. Figure 2 shows the proposed site plan.

SITE ACCESS

Access to the site is to be taken from Las Lomitas Dr via one proposed full access driveway and El Pueblo Rd via one possible driveway, in which the following configurations were analyzed within this study:

Configuration 1 – Analyzes the study area intersections assuming there is no Driveway 2 on El Pueblo Rd. Therefore, all traffic must enter the site using Driveway 1 on Las Lomitas Dr. This configuration is identified as “No Driveway 2” in this report.

Configuration 2 – Analyzes the study area intersections assuming there is a restricted partial access Driveway 2 on El Pueblo Rd. Therefore, traffic is allowed to make a right turn in and a right turn out of Driveway 2. All traffic going west and north toward Edith Blvd will be required to exit at Driveway 1. This configuration is identified as “Driveway 2 Right-In/Right-Out” in this report.

Configuration 3 – Analyzes the study area intersections assuming full access is provided at Driveway 2 on El Pueblo Rd. This configuration allows entering and exiting traffic to make all movements at Driveway 2. This configuration is identified as “Driveway 2 Full Access” in this report.

Details of the driveway’s location and access are included in subsequent sections of this report.

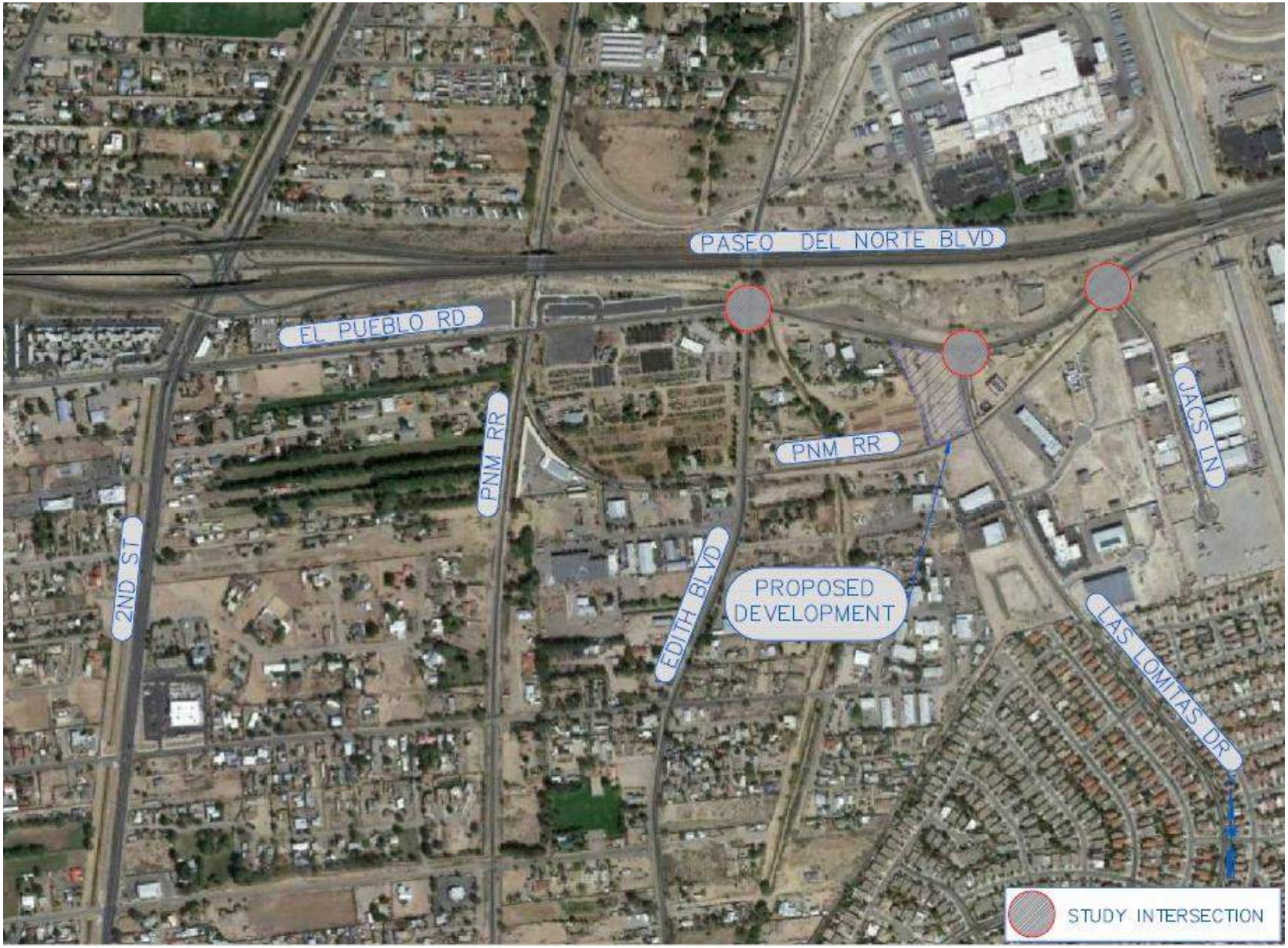

Figure 1. Vicinity Map

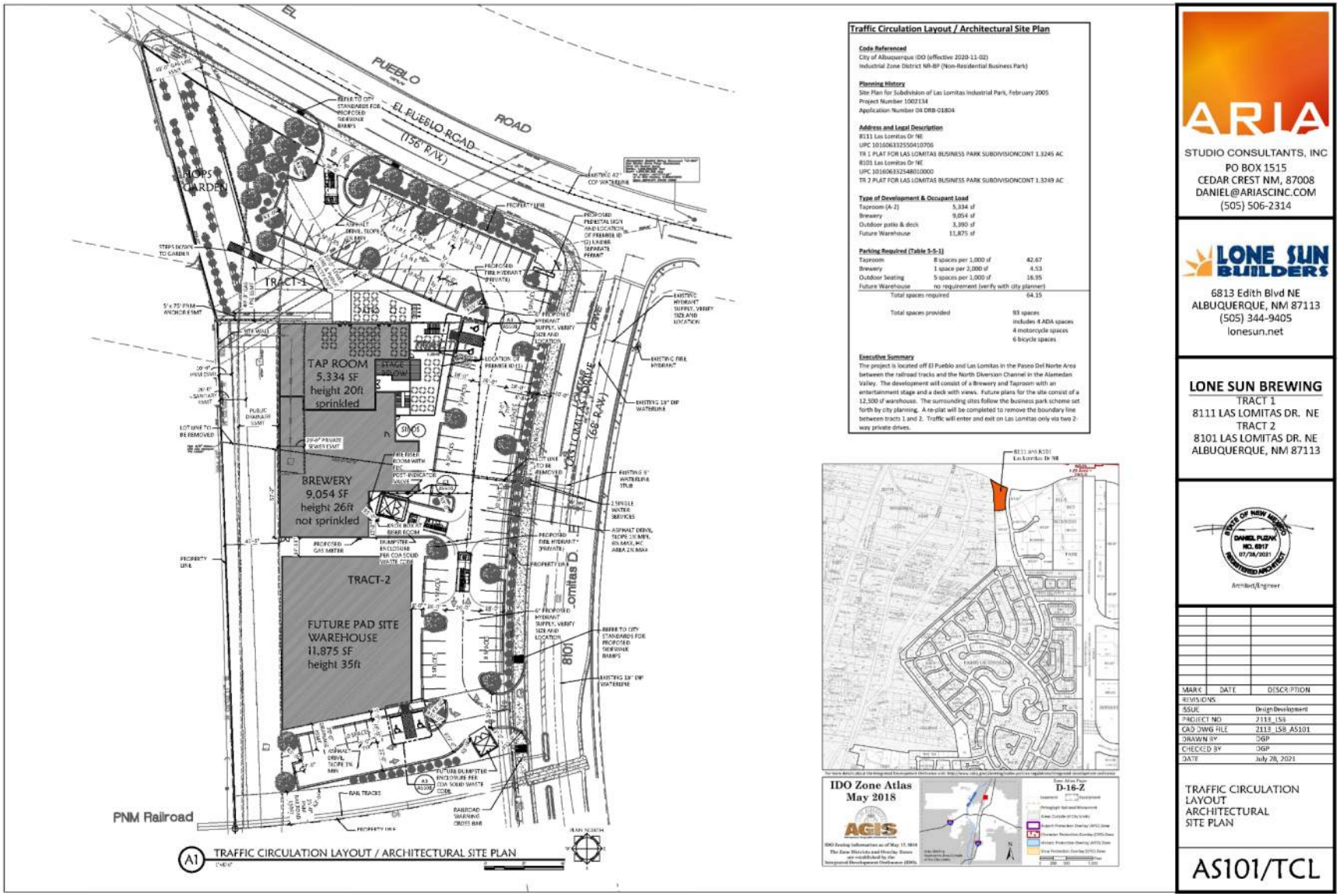

Figure 2. Site Plan

Study Area, Area Land Use, and Streets

STUDY AREA

The study area is defined as the area bounded by El Pueblo Rd and Las Lomitas Dr immediately surrounding the site. The following intersections were identified and agreed upon in the scoping form and will serve as the study intersections for this report:

- El Pueblo Rd & Edith Blvd
- El Pueblo Rd & Las Lomitas Dr
- El Pueblo Rd & Jacs Ln
- El Pueblo Rd & Site Driveway 2
- Las Lomitas Dr & Site Driveway 1

AREA LAND USE

As described, the proposed brewery and warehouse development is to be located on the north side of CABQ at 8111 Las Lomitas Dr within the city of Albuquerque. Surrounding major intersections include El Pueblo Rd and Edith Blvd. Adjacent to and surrounding the project site are land uses consisting of the following:

- Industrial: A majority of the surrounding land use is industrial in nature, with industrial developments located east, west, and south of the proposed developments.
- Residential: Just west and south of the proposed development, there are several multi-family housing developments as well as an area of single-family housing.

STREETS

The following details the characteristics and features of streets included in the study area:

El Pueblo Rd is a three-lane undivided roadway classified by MRCOG as a Major Collector, running east and west north of the proposed development. Travel lanes range from 11-12 feet wide, with two westbound lanes and one eastbound lane. The roadway incorporates auxiliary right turn lanes throughout the corridor at intersections. Curb and gutter are not present; however, a multi-use trail is present on the north side of the road. The roadway has a posted speed limit of 35 MPH.

Las Lomitas Dr is a two-lane undivided roadway classified by MRCOG as a Local Street, running north and south and serves as the eastern boundary of the proposed development. Travel lanes range from 10-12 feet wide. Las Lomitas Dr incorporates curb and gutter, and sidewalk is present on both sides of the road. The roadway has a posted speed limit of 35 MPH.

Jacs Ln is currently classified by MRCOG as a Local Street and runs north and south with a speed limit of 30 MPH. The roadway is 36 feet wide and provides marked left turn and right turns lanes at the northbound approach to El Pueblo Rd. Curb and gutter are present and incorporate sidewalks on both sides of the street.

INTERSECTIONS

The following details the traffic control and characteristics of existing intersections in the study area:

El Pueblo Rd & Edith Blvd is a 4-legged signalized intersection maintained by the City of Albuquerque. The signal operates with time-of-day coordination. Pedestrian crosswalks are present on the west leg of the intersection.

El Pueblo Rd & Las Lomitas Dr is a stop-controlled t-intersection with a stop on Las Lomitas Dr and is maintained by the City of Albuquerque.

El Pueblo Rd & Jacs Ln is a stop-controlled t-intersection with a stop on Jacs Ln and is maintained by the City of Albuquerque.

Transit

Currently, one bus route, Route 251, serves the study area on El Pueblo Rd at the Rail Runner Station near 2nd St. The route operates every weekday with two stops in the morning and two stops in the evening.

Multimodal Connectivity

Currently, bicycle facilities are not present immediately near the development or on its frontage. However, there is an existing multi-use trail along El Pueblo Rd on the north side of the street. El Pueblo Rd is identified as a future bike route and is highly used by bicyclists. Access from the trail to the intersection of El Pueblo Rd and Las Lomitas Dr is provided on the north side of the intersection. Pedestrian facilities for El Pueblo Rd are provided with the multi-use trail on the north side of the street, and sidewalks are present on both sides of Las Lomitas Dr.

Current Adjacent Projects

CABQ has an ongoing project to make improvements to the bike and pedestrian facilities on El Pueblo Rd.

ANALYSIS OF EXISTING CONDITIONS

Data Collection

Turning movement counts were collected for 9 hours in 3-periods: 6:00 AM-9:00 AM (morning), 11:00 AM-2:00 PM (mid-day), and 3:00 PM-6:00 PM (evening) on:

- On August 25, 2021, at:
  - El Pueblo Rd & Las Lomitas Dr on
- On September 22, 2021, at:
  - El Pueblo Rd & Edith Blvd
  - El Pueblo Rd & Jacs Ln

Growth rates were also obtained from the nearby traffic study for opening year and horizon year (10 years after projected build-out) analyses. Table 1 shows the peak hours for each intersection used in the analysis. Current year turning movement counts, lane geometry, and traffic control for the study intersections are presented in Figure 3. Full turning movement count sheets can be found in Appendix B.

Table 1: Intersection Peak Hours

Intersection	Data Collection Date	Mid-Day Peak Hour	PM Peak Hour
El Pueblo Rd & Las Lomitas Blvd	8/18/2021	12:00-1:00	4:45-5:45
El Pueblo Rd & Edith Dr	8/18/2021	12:00-1:00	4:45-5:45
El Pueblo Rd & Jacs Ln	8/18/2021	12:00-1:00	4:45-5:45

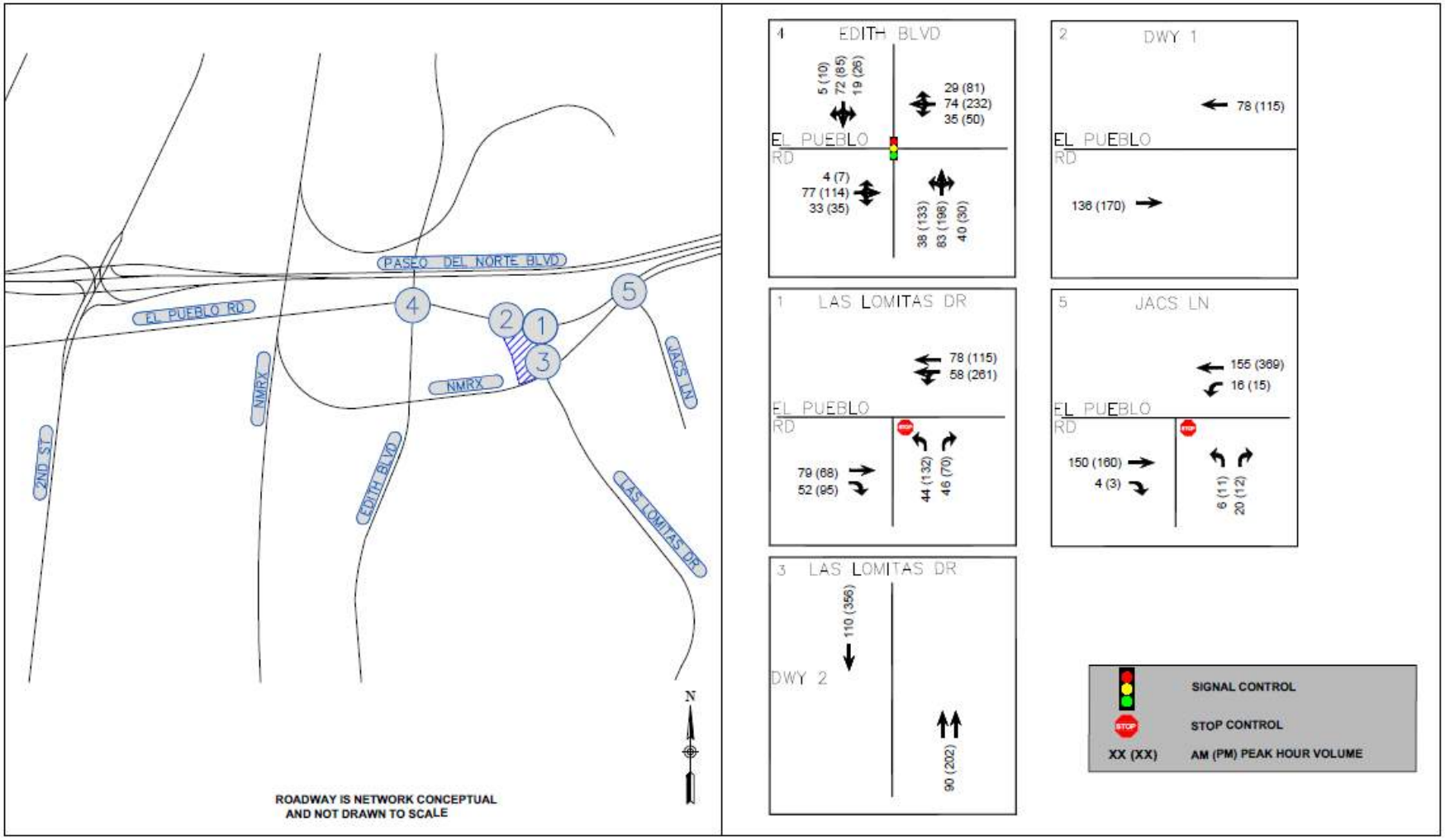

Figure 3. Existing 2021 Turning Movement Counts

Level of Service and Capacity Analysis

Intersection Analysis

Intersection Capacity and Level of Service (LOS) analysis were performed according to the methods and procedures provided in the *Highway Capacity Manual, 6th Edition (HCM6).* Highway Capacity software was used to facilitate the analysis. Per the Highway Capacity Manual, LOS is presented as a letter grade (A through F) based on the calculated average delay for an intersection or movement. Delay is calculated as a function of several variables, including signal phasing operations, cycle length, traffic volumes, and opposing traffic volumes, but is a measurement of the average wait time a driver can expect when moving through an intersection. Factors such as total cycle time (for all movements), queueing restrictions, and vehicle volumes can affect measurements of delay, especially for lower volume movements and side streets. Generally, these factors are only realized when delays reach or exceed LOS E thresholds. In such cases, a narrative is offered in subsequent sections specific to the individual movement in question.

Table 2 below, reproduced from the Highway Capacity Manual, shows delay thresholds and the associated Level of Service assigned to delay ranges. Generally, a LOS of D or better is considered an acceptable level of service.

Table 2: LOS Criteria and Descriptions for Signalized Intersections

Level of Service	Average Control Delay (sec/vehicle)	General Description (Signalized Intersections)
A	≤10	Free flow
B	>10 – 20	Stable flow (slight delays)
C	>10 – 35	Stable flow (acceptable delays)
D	>35 – 55	Approaching unstable flow (tolerable delay, occasionally wait through more than one signal cycle before proceeding)
E	>55 – 80	Unstable flow (intolerable delay)
F	>80	Forced flow (jammed)

Unsignalized intersection LOS is divided into two intersection types: all-way stop-controlled and two-way stop-controlled. All-way stop-controlled intersection LOS is expressed in terms of average vehicle delay of all the movements. Two-way stop-controlled intersection LOS is defined in terms of average vehicle delay of an individual movement. Table 3 shows LOS criteria for unsignalized intersections.

Table 3: LOS Criteria for Unsignalized Intersections

Level of Service	Average Control Delay (sec/veh)
A	≤10
B	>10 – 15
C	>15 – 25
D	>25 – 35
E	>35 – 50
F	>50

Based on procedures outlined in the Highway Capacity Manual, intersection delay and LOS for study intersections are reported as the delay and level of service for the worst-case movement. Per HCM6 procedures, peak hour factors obtained from collected traffic counts for the intersections were used in the existing conditions analysis and all other scenarios. Queues are reported for queue measurements falling within the 95th percentile. It should be noted that 95th percentile queues are statistically expected to occur during only 5% of the peak hour's sign cycles. It is also noted that un-reported average queueing at an intersection would statistically be much shorter than 95th percentile queueing.

ANALYSIS OF SIGNALIZED INTERSECTIONS

Table 4 below summarizes intersection capacity and LOS analysis performed for existing conditions for the signalized intersections at El Pueblo Rd & Edith Blvd. Per HCM6 procedures, peak hour factors obtained from collected traffic counts for the intersections were used in the existing conditions analysis and all other scenarios. Existing signal timings for El Pueblo Rd & Edith Blvd, provided by CABQ, were used in each analysis scenario unless otherwise stated. Queueing is reported as a ratio Queue Storage Ratio (QSR) for signalized intersections and indicates the ratio of demand to capacity based on possible lengths of waiting vehicles during "red" times for specific movements. Table 5 below summarizes queuing results. Detailed capacity output sheets can be found in Appendix D.

Table 4: 2021 Existing Signalized Capacity Analysis Summary

Study Intersection	Scenario	Individual Movement LOS and Delay								Intersection LOS			
		Mid-day				PM				Mid-day		PM	
		Movement	Delay[1]	V/C	LOS[2]	Movement	Delay[1]	V/C	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
El Pueblo Rd & Edith Blvd	Existing 2021	EBT	13.5	0.14	B	EBT	14.1	0.2	B	15.1	B	18.4	B
		WBT	13.9	0.18	B	WBT	17.6	0.5	B				
		NBT	16.8	0.23	B	NBT	21.8	0.54	C				
		SBT	15.7	0.13	B	SBR	16.2	0.18	B				

[1]Average delay in seconds per vehicle.

[2]LOS stands for Level of Service.

Table 5: 2021 Existing Signalized Queue Storage Summary

Study Intersection	Movement	Existing 2021		Storage Length Present (ft)
		Mid-day	PM	
		95th Percentile (QSR)	95th Percentile (QSR)	
El Pueblo Rd & Edith Blvd	EBT	0.00	0.00	---
	WBT	0.00	0.00	---
	NBT	0.00	0.00	---
	SBT	0.00	0.00	---

*95th Percentile (QSR)= Queue Storage Ratio

From the tables above, the following is summarized:

El Pueblo Rd & Edith Blvd

- Capacity Analysis:
  - Under existing conditions, the intersection is observed to operate at an acceptable level of service in both the Midday and PM peak hours. Individual movements are also observed to operate at an acceptable Level of Service (LOS) for the Midday and PM peaks. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.
- Queueing Analysis:
  - Under existing conditions, 95th percentile Queue Storage Ratios (QSR) lengths at the intersection are observed to be less than 1 vehicle during the Midday and PM peak hours.

ANALYSIS OF STOP-CONTROLLED INTERSECTIONS

Table 6 below summarizes stop-controlled intersection capacity and LOS analysis performed for existing conditions for the unsignalized intersections. Per the HCM, queueing for stop-controlled intersections is reported as a number of vehicles in the queue. For the purposes of this report, queued vehicles were converted to feet by multiplying queued vehicles by the HCM average vehicle length, 20 feet. Table 7 below summarizes queuing results. Detailed capacity output sheets can be found in Appendix D.

Table 6: 2021 Existing Stop Control Capacity Analysis Summary

Study Intersection	Scenario	Individual Movement LOS and Delay								Intersection LOS			
		Mid-day				PM				Mid-day		PM	
		Movement	Delay[1]	V/C	LOS[2]	Movement	Delay[1]	V/C	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
El Pueblo Rd & Las Lomitas Dr	Existing 2021	WBL/T	7.6	0.04	A	WBL/T	8.2	0.20	A	10.7	B	27.1	D
		NBL	10.7	0.07	B	NBL	27.1	0.46	D				
		NBR	8.9	0.05	A	NBR	8.9	0.07	A				
El Pueblo Rd & Jacs Ln	Existing 2021	WBL	7.6	0.01	A	WBL	7.6	0.01	A	10.8	B	13.6	B
		NBL	10.8	0.01	B	NBL	13.6	0.03	B				
		NBR	9.2	0.02	A	NBR	9.3	0.02	A				

[1]Average delay in seconds per vehicle.
[2]LOS stands for Level of Service.

Table 7: 2021 Existing Stop Control Queue Storage Summary

Study Intersection	Movement	Existing 2021		Storage Length Present (ft)
		Mid-day	PM	
		95th Percentile (ft)	95th Percentile (ft)	
El Pueblo Rd & Las Lomitas Dr	EBT	---	---	---
	EBR	---	---	310
	WBT	---	---	---
	WBL/T	2.0	14.0	---
	NBL	4.0	50.0	350
	NBR	4.0	4.0	260
El Pueblo Rd & Jacs Ln	EBT	---	---	---
	EBR	---	---	200
	WBT	---	---	---
	WBL	0.0	0.0	135
	NBL	0.0	2.0	200
	NBR	2.0	0.0	---
Las Lomitas Dr & Driveway 1	EBL/R	---	---	---
	NBL/T	---	---	---

*95th Percentile Queues are calculated in feet

From Tables 6 and 7, the following is summarized:

El Pueblo Rd & Las Lomitas Dr

- Capacity Analysis:
  - Under existing conditions, individual movements are observed to operate at an acceptable Level of Service (LOS) for both Midday and PM peak hours. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.
- Queueing Analysis:
  - Under existing conditions, 95th percentile queue lengths at the intersection are observed to accommodate existing storage lengths during the Midday and PM peak hours.

El Pueblo Rd & Jacs Ln

- Capacity Analysis:
  - Under existing conditions, individual movements are observed to operate at an acceptable Level of Service (LOS) for both Midday and PM peak hours. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.
- Queueing Analysis:
  - Under existing conditions, 95th percentile queue lengths at the intersection are observed to accommodate existing storage lengths during the Midday and PM peak hours.

ANALYSIS OF FUTURE CONDITIONS

The following sections detail the methods and calculations used to obtain traffic volumes for each analysis scenario. This process used the following tools as described below: Traffic Projections and Site Trip Distributions & Assignment. Figures at the end of this section show the resulting traffic volumes determined for each analysis scenario.

SITE ACCESS CONFIGURATION

Three configurations for Driveway 2 on El Pueblo Rd were analyzed for this report, as requested by NMDOT. It is noted that an EBR lane exists at Las Lomitas under existing conditions.

Configuration 1 – Analyzes the study area intersections assuming there is no Driveway 2 on El Pueblo Rd. Therefore, all traffic must enter the site using Driveway 1 on Las Lomitas Dr. This configuration is identified as “No Driveway 2” in this report.

Configuration 2 – Analyzes the study area intersections assuming there is a right turn restricted Driveway 2 on El Pueblo Rd. Therefore, traffic is allowed to make a right turn in and a right turn out of Driveway 2. All traffic going west and north toward Edith Blvd will be required to exit at Driveway 1. This configuration is identified as “Driveway 2 Right-In/Right-Out” in this report.

Configuration 3 – Analyzes the study area intersections assuming full access is provided at Driveway 2 on El Pueblo Rd. This configuration allows entering and exiting traffic to make all movements at Driveway 2. This configuration is identified as “Driveway 2 Full Access” in this report.

Each configuration is analyzed in sections below, and a comparison of the configurations is provided at the end of this report.

TRAFFIC PROJECTIONS

Construction is anticipated to begin in 2021, with full completion of the development in 2022. To forecast existing traffic volumes to future analysis background conditions, loading values from the 2016 and 2040 (updated) travel demand models were provided by MRCOG. These models were then compared using AM

and PM peak hour direction volumes (AMPH LOAD and PMPH LOAD) to calculate anticipated growth rates for individual roadways near the study area. To facilitate a conservative analysis, roadways calculated to have a yearly growth rate of less than 1% were analyzed with a 1% per year growth rate. Growth rates were then converted to growth factors for specific analysis scenarios. Values provided by MRCOG are reproduced verbatim in Table 8, in addition to the calculated growth rates used in the analysis. Growth rates were then applied to the 2021 turning movement volumes to forecast future volumes. MRCOG traffic growth data excerpts can found in Appendix E.

Table 8: Growth Rate Method

Roadway				MRCOG 2016 Model "Peak Hour Load"	MRCOG 2040 Model "Peak Hour Load"	Yearly Growth Rate	Average Yearly Growth	Growth Rate Used
El Pueblo Rd	East of Las Lomitas Dr	AM	PH	612	291	-3.05%	-2.18%	1.00%
		PM	PH	378	87	-5.94%		
El Pueblo Rd	West of Las Lomitas Dr	AM	PH	468	272	-2.24%		
		PM	PH	268	80	-4.91%		
El Pueblo Rd	West of Edith Blvd	AM	PH	219	273	0.92%		
		PM	PH	677	1120	2.12%		
Edith Blvd	North of El Pueblo Rd	AM	PH	163	181	0.44%	0.87%	
		PM	PH	300	410	1.31%		
Edith Blvd	South of El Pueblo Rd	AM	PH	256	492	2.76%	2.10%	
		PM	PH	265	374	1.45%		
Las Lomitas Dr	South of El Pueblo Rd	AM	PH	144	19	-8.09%	-9.47%	
		PM	PH	110	7	-10.84%		

Trip Generation

Trip generation for the development was performed using the procedures and methodologies provided in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th Edition.* The land use category Warehousing (ITE 150) was used to generate trips for the development. The midday peak rate for this land use was determined using Appendix C percentages of daily trips. Trips were calculated using rates for Midday peak hour and PM peak hour generators. Because there is no appropriate code for a brewery or taproom, data was collected during the Midday peak and PM peak at a nearby brewery to develop rates for this land use. As previously stated, the development is to consist of one single phase. Total development trips and trips generated are shown below in the tables. Site trips for the development site were generated using data and procedures according to the Institute of Transportation Engineer's Trip Generation Manual. The site-generated trips were added to background traffic volumes to create the build-out traffic volumes.

Table 9 provided below shows expected trips generated by the development.

Table 9: Trip Generation

Use	Units		TRIP GENERATION						PEAK HOUR TRIPS			
			Midday Peak			PM Peak			Midday Peak		PM Peak	
			Rate	Enter	Exit	Rate	Enter	Exit	In	Out	In	Out
Brewery (Tap Room)	5.334	1000 sq. ft. GFA	6.00	67%	33%	14.00	43%	57%	21	11	32	43
ITE 150 - Warehousing	11.875	1000 sq. ft. GFA	0.17	65%	35%	0.24	24%	76%	1	1	1	2
Total	17.209	1000 sq. ft. GFA	Total						22	12	33	45

TRIP DISTRIBUTION AND ASSIGNMENT

Trip Distribution was determined based on the analysis of existing intersection demand characteristics within the study area. Overall, trips were distributed within the roadway network to and from the development based on the proportions of existing turning movement counts/demands. Trip routing was based on logical trip attractions and destinations for residential-based trips. The figures below show the trip distribution and assignment for the development of each analysis scenario. Trips were then assigned to the background roadway networks to create build-out volumes and are shown in the figures below.

As stated previously, three access configurations are analyzed in this report. Therefore, trip distributions for each configuration were developed for a total of three trip distributions. Figure 5 through Figure 7 show the proposed trip distribution and trip assignments for each configuration.

Traffic Volume Calculations

Traffic volumes used in the analysis were calculated based on the following:

1. Existing Conditions: direct turning movement counts from 2021
2. Background 2022: 2022 growth rate applied to existing conditions
3. Full Build-out 2022:
    a. Background 2022 traffic volumes plus site trips with no Driveway 2 on El Pueblo Rd
    b. Background 2022 traffic volumes plus site trips with Right-In/Right-Out Driveway 2 on El Pueblo Rd
    c. Background 2022 traffic volumes plus site trips with Full Access Driveway 2 on El Pueblo Rd

As stated above, build-out traffic volumes were calculated using the growth rates and factors detailed in previous sections. Site trips were added to study intersections with direct access to the proposed development. Figure 8 through Figure 10 show the traffic volumes used for each individual analysis scenario.

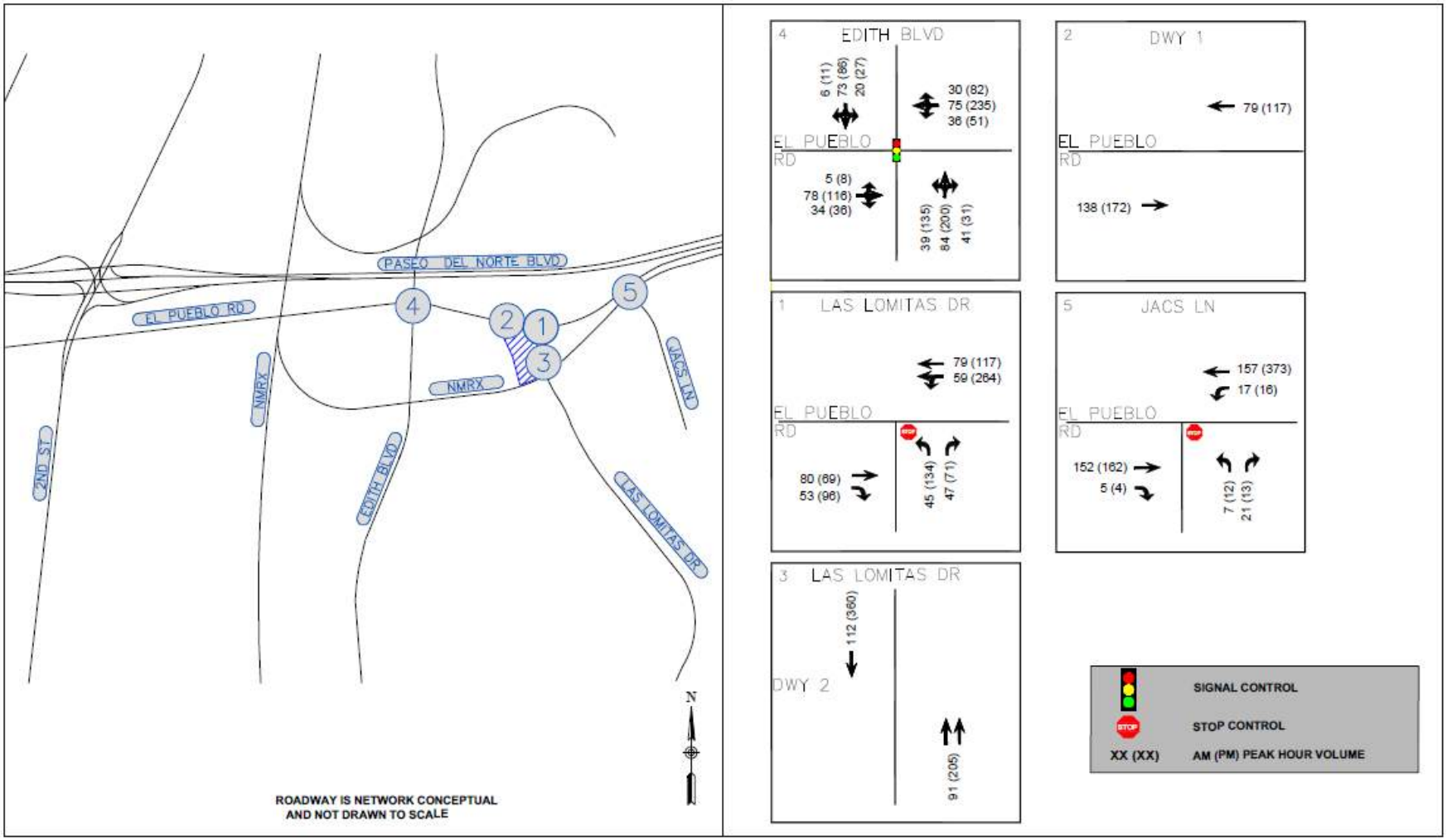

Figure 4. Background 2022 Turning Movement Traffic Volumes

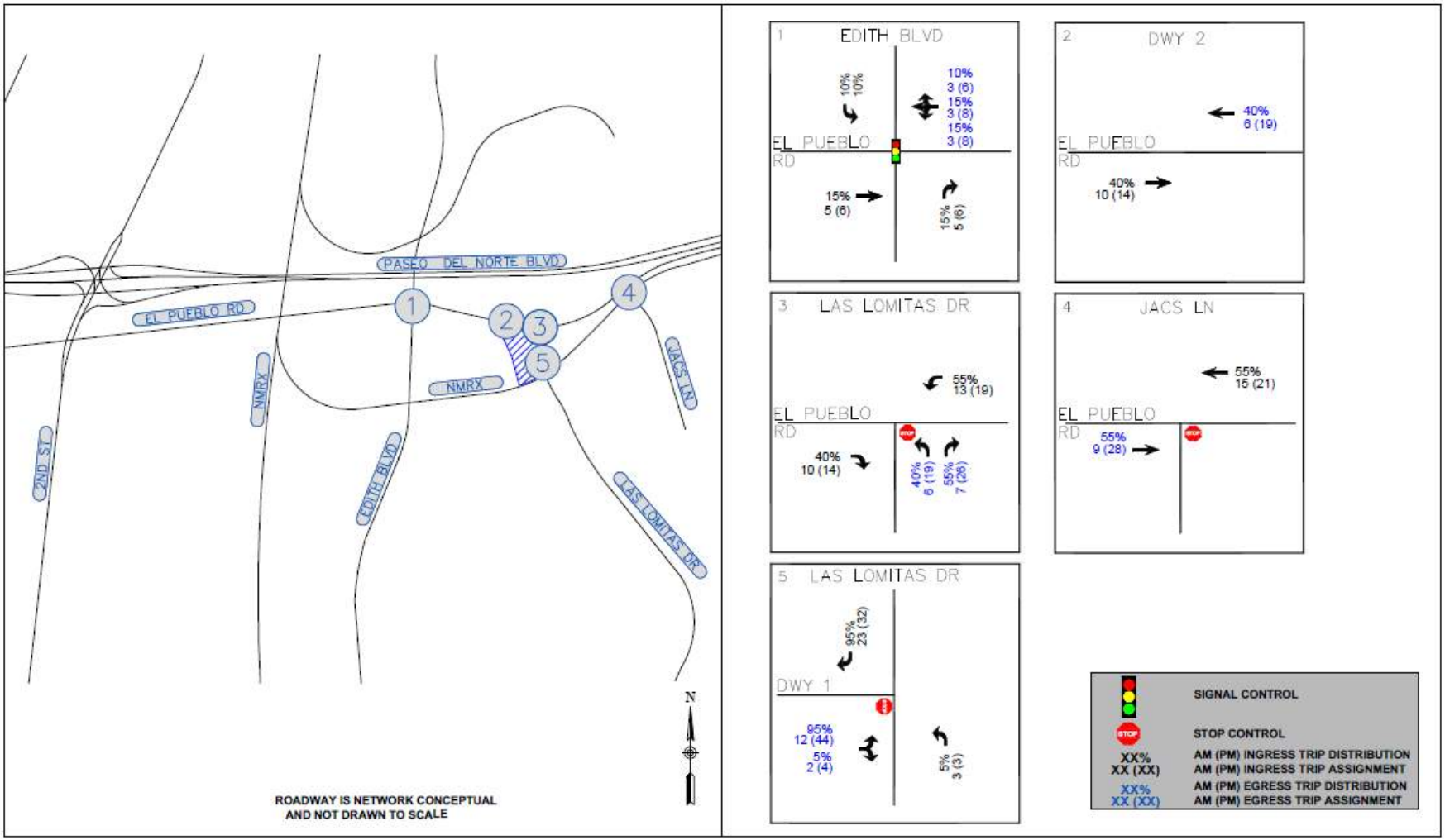

Figure 5. Trip Distribution and Assignment – No Driveway 2

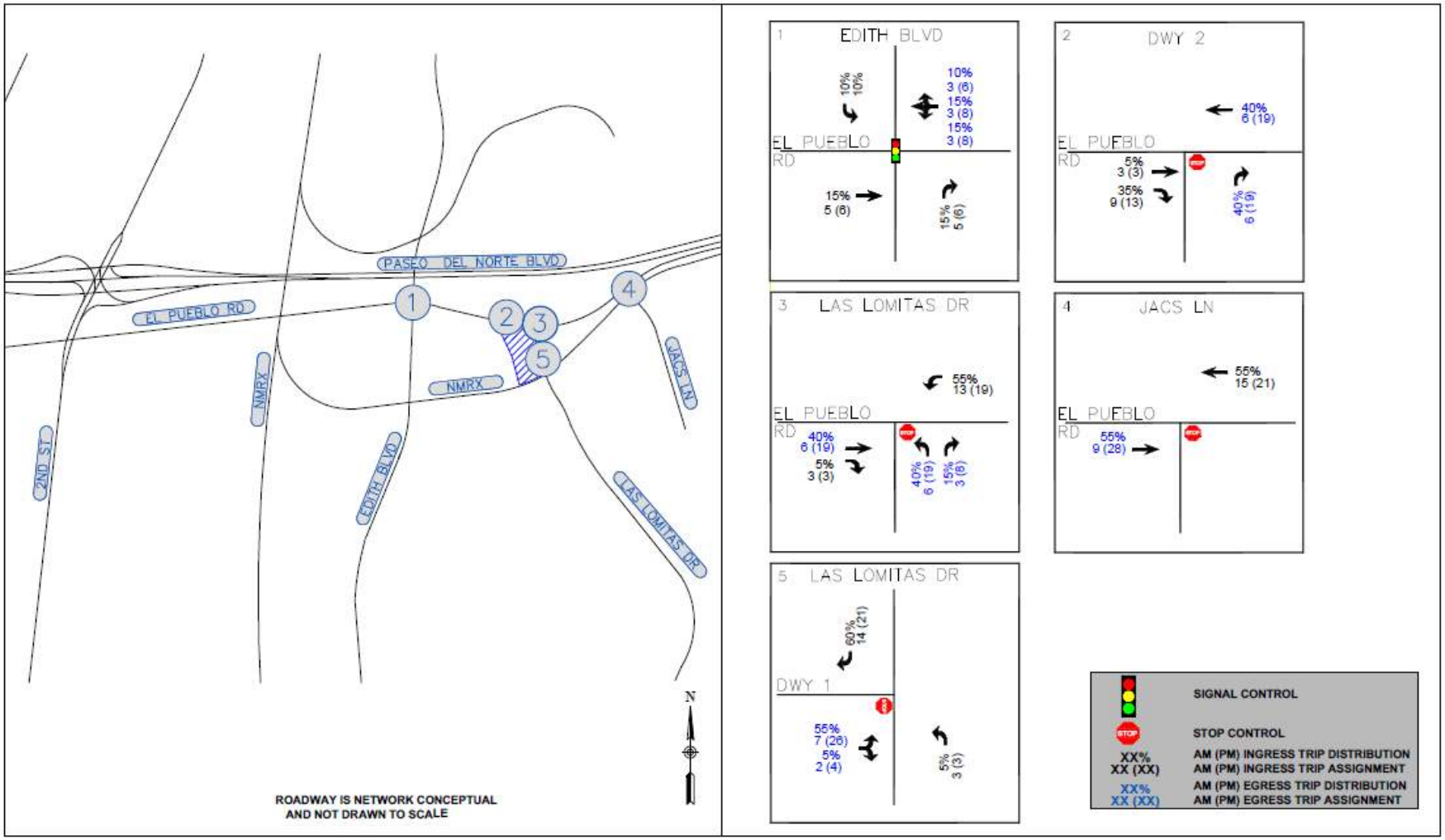

Figure 6. Trip Distribution and Assignment – Driveway 2 Right-in/Right-Out

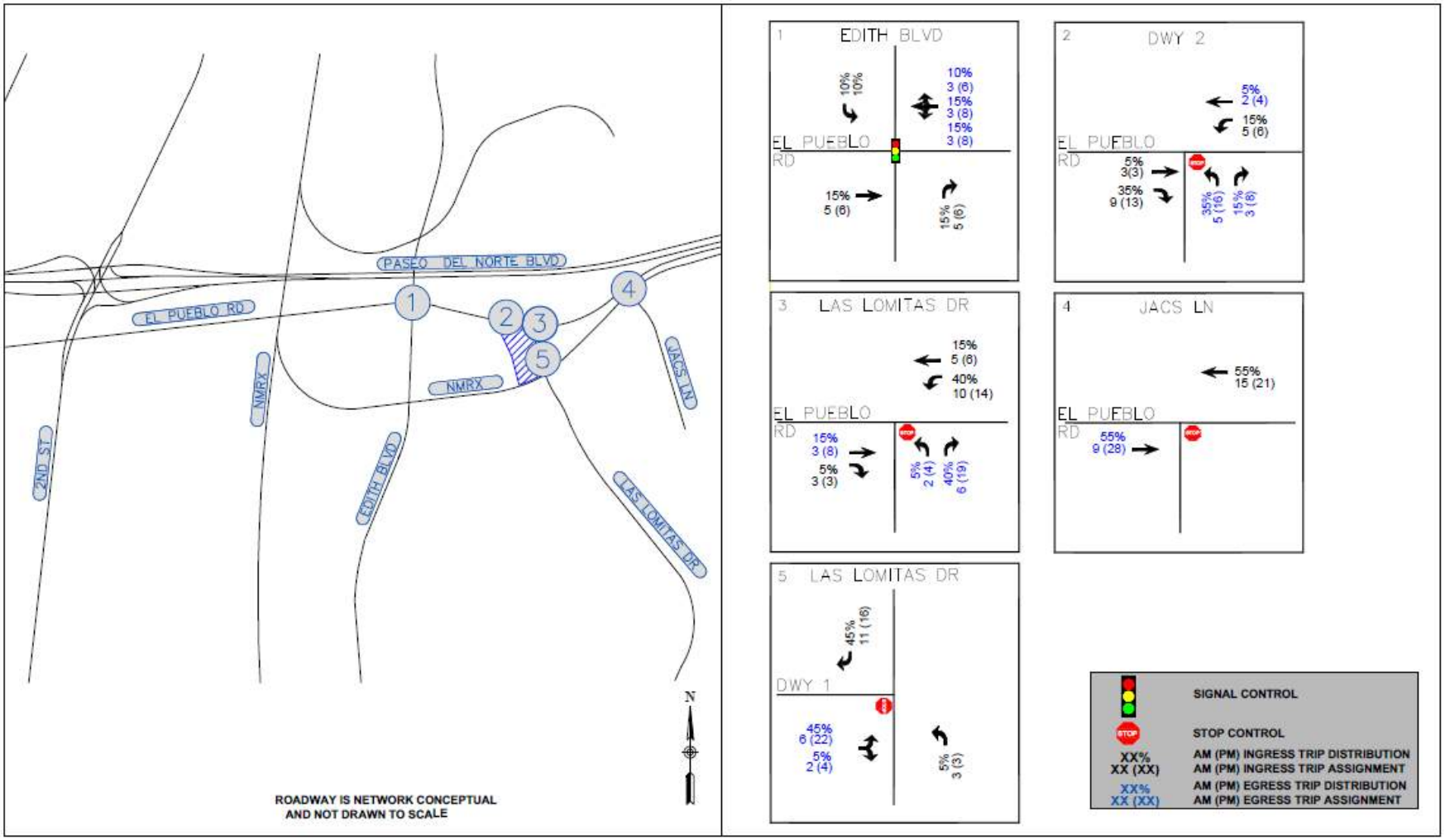

Figure 7. Trip Distribution and Assignment – Driveway 2 Full Access

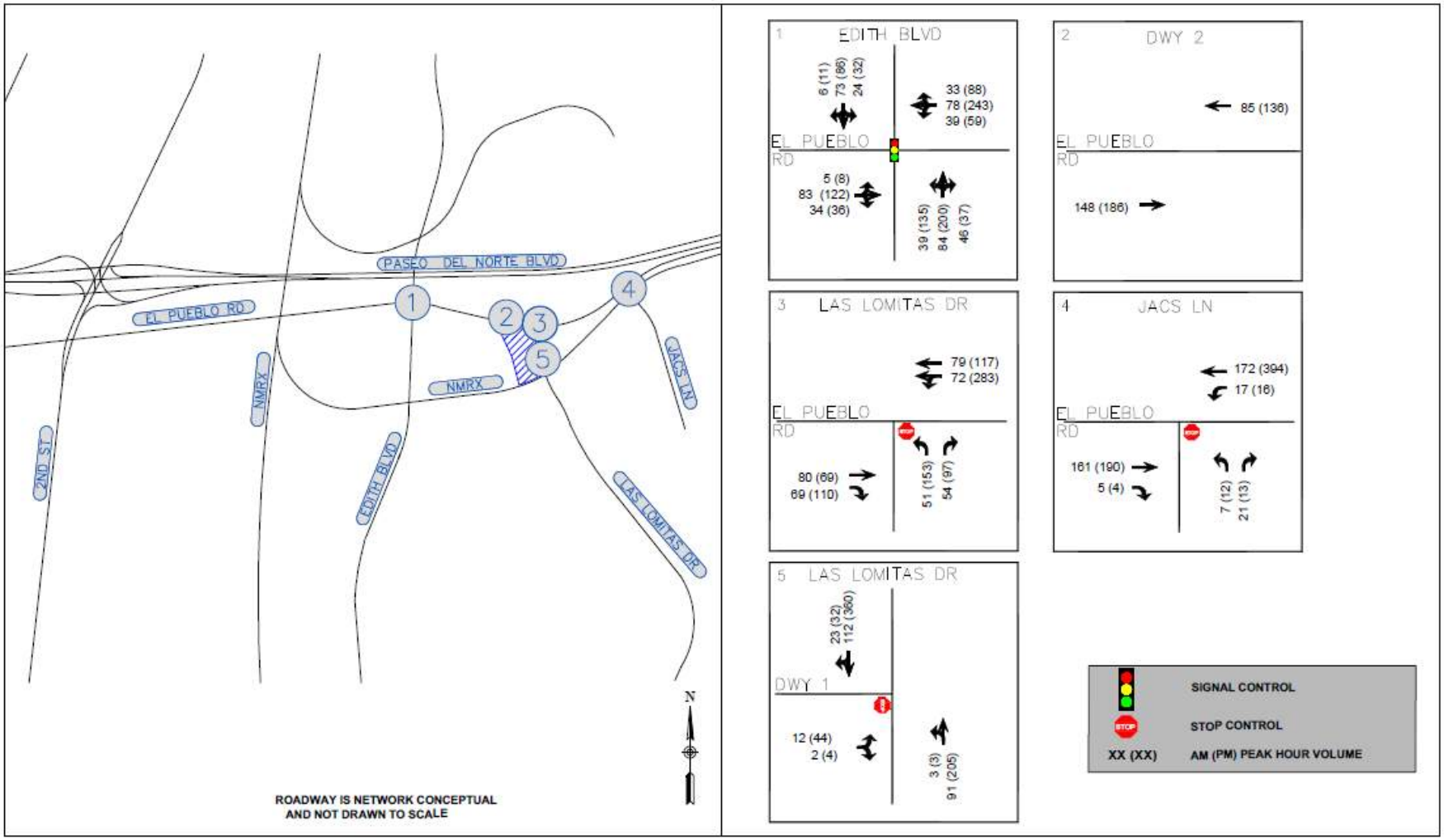

Figure 8. Full Build-Out 2022 Traffic Volumes – No Driveway 2

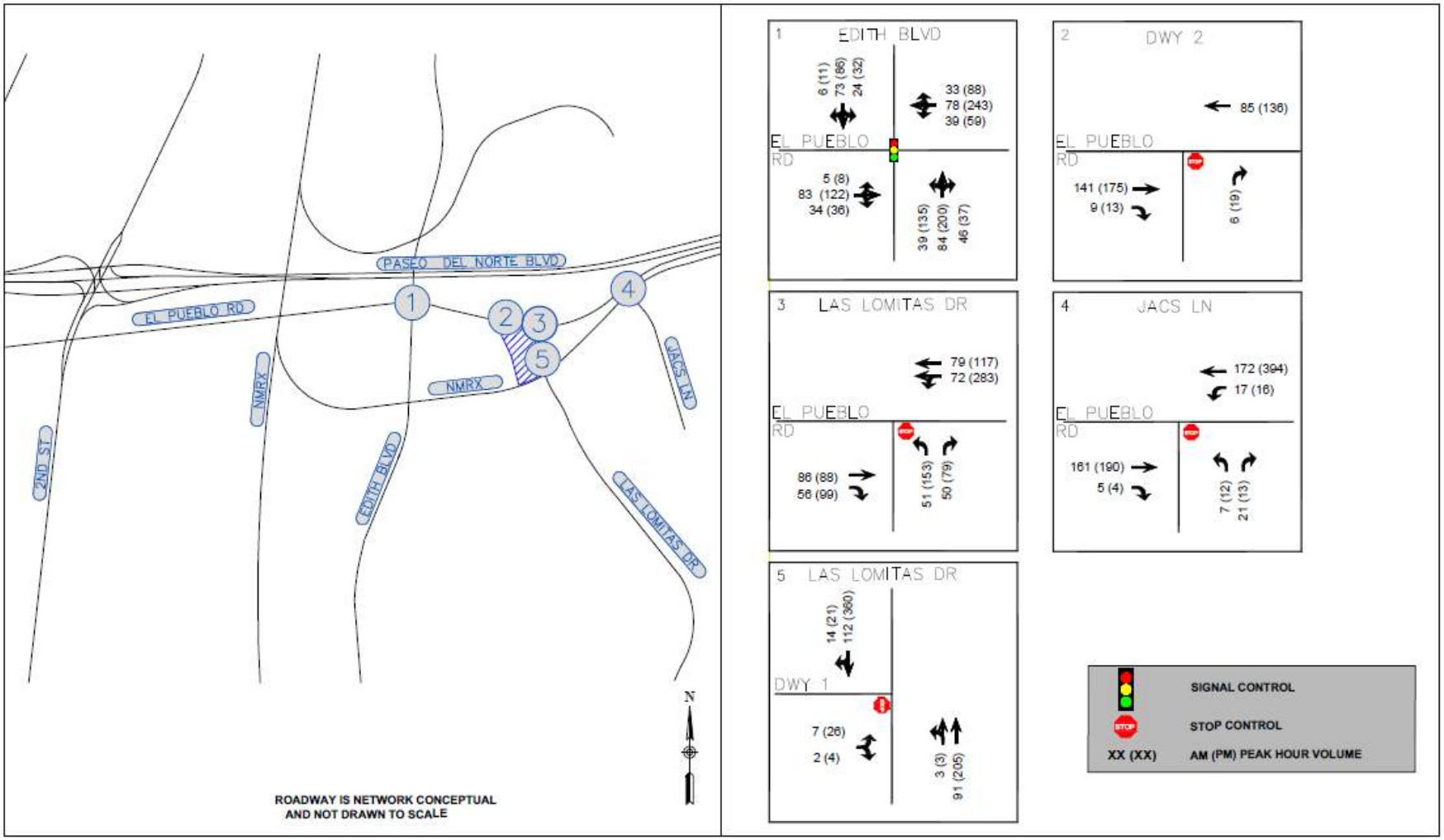

Figure 9. Full Build-Out 2022 Traffic Volumes – Right-in/Right-Out

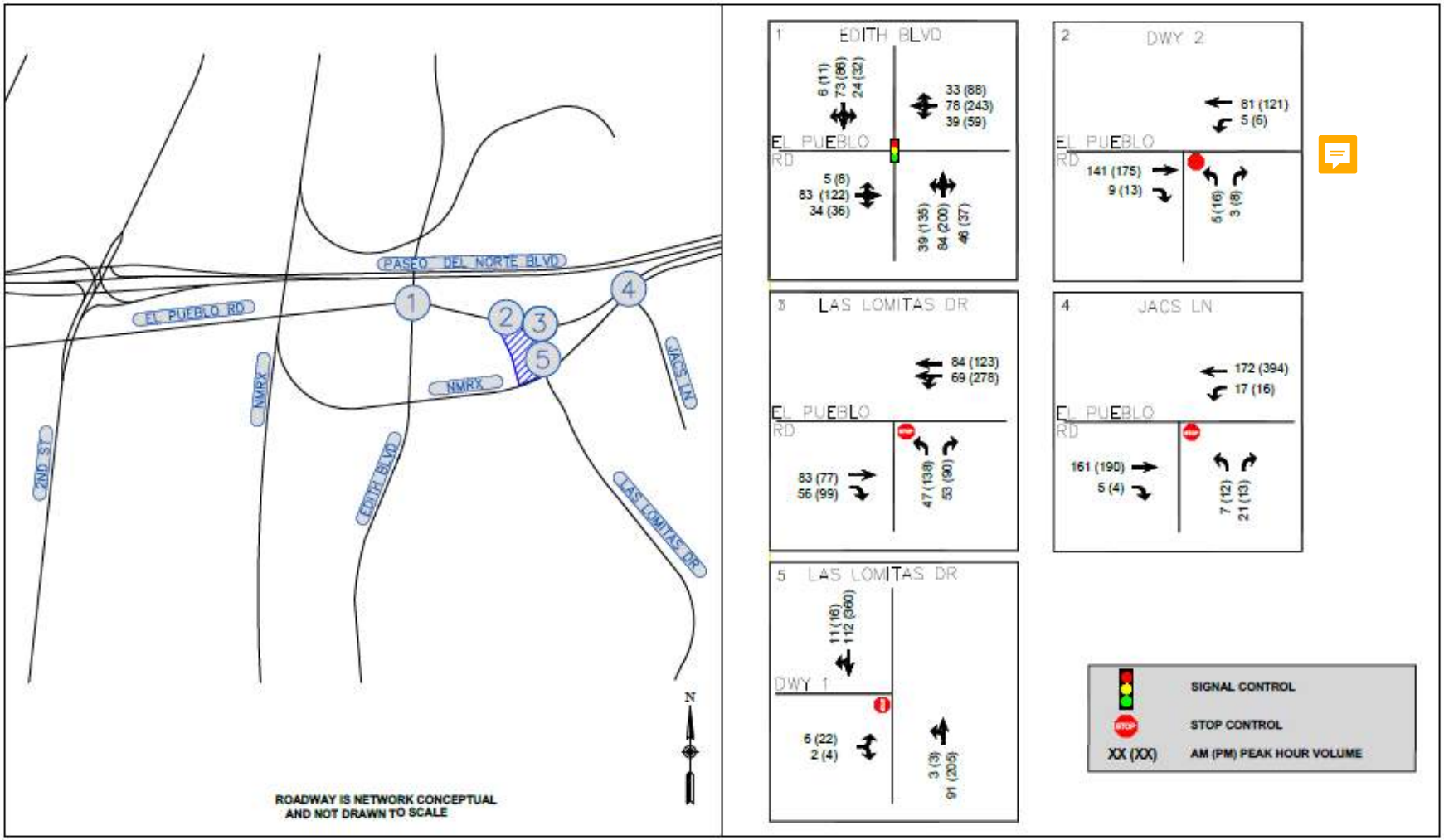

Figure 10. Full Build-Out 2022 Traffic Volumes – Full Access

TRAFFIC ANALYSIS OF BACKGROUND AND BUILD-OUT YEAR

As performed for existing conditions, a LOS, capacity, and queuing analysis was performed for all future analysis scenarios using the same procedures and assumptions. Signal timings used in the existing conditions analysis were retained and used for background conditions, build-out condition analysis, and horizon year.

2022 CONDITIONS – NO DRIVEWAY 2

ANALYSIS OF SIGNALIZED INTERSECTIONS

Table 10 below summarizes intersection capacity and LOS analysis performed for 2022 conditions for the signalized intersection at El Pueblo Rd & Edith Blvd. Table 11 below summarizes queuing results. Detailed capacity output sheets can be found in Appendix D.

Table 10: 2022 Background and Full Build-Out Signalized Capacity Analysis Summary – No Driveway 2

Study Intersection	Scenario	Individual Movement LOS and Delay								Intersection LOS			
		Mid-day				PM				Mid-day		PM	
		Movement	Delay[1]	V/C	LOS[2]	Movement	Delay[1]	V/C	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
El Pueblo Rd & Edith Blvd	Background 2022	EBT	13.6	0.14	B	EBT	14.1	0.20	B	15.1	B	18.1	C
		WBT	13.0	0.18	B	WBT	16.1	0.38	B				
		NBT	16.8	0.23	B	NBT	22.0	0.55	C				
		SBT	15.8	0.14	B	SBT	16.2	0.18	B				
	Full Build 2022	EBT	13.6	0.15	B	EBT	14.2	0.21	B	15.2	B	18.8	B
		WBT	14.0	0.20	B	WBT	18.3	0.51	B				
		NBT	16.9	0.24	B	NBT	22.2	0.56	C				
		SBT	15.8	0.14	B	SBT	16.3	0.20	B				

[1]Average delay in seconds per vehicle.

[2]LOS stands for Level of Service.

Table 11: 2022 Background and Full Build-Out Signalized Queue Storage Summary

Study Intersection	Movement	Background 2022		Full Build 2022		Storage Length Present (ft)
		Mid-day	PM	AM	PM	
		95th Percentile (QSR)	95th Percentile (QSR)	95th Percentile (QSR)	95th Percentile (QSR)	
El Pueblo Rd & Edith Blvd	EBT	0.00	0.00	0.00	0.00	---
	WBT	0.00	0.00	0.00	0.00	---
	NBT	0.00	0.00	0.00	0.00	---
	SBT	0.00	0.00	0.00	0.00	---

*95th Percentile (QSR)= Queue Storage Ratio

From the tables above, the following is summarized:

El Pueblo Rd & Edith Blvd

- Capacity Analysis:
  - Under 2022 background conditions, the intersection is observed to operate at an acceptable level of service in both the Midday and PM peak hours. Individual movements are also observed to operate at an acceptable Level of Service (LOS) for the Midday and PM peaks. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.
  - Under 2022 full build conditions, the intersection is observed to operate at an acceptable level of service in both the Midday and PM peak hours. Individual movements are also observed to operate at an acceptable Level of Service (LOS) for the Midday and PM peaks. It

is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.

- Queueing Analysis:
  - Under 2022 background conditions, 95th percentile Queue Storage Ratios (QSR) lengths at the intersection are observed to be less than 1 vehicle during the Midday and PM peak hours.
  - Under 2022 full-build conditions, 95th percentile Queue Storage Ratios (QSR) lengths at the intersection are observed to be less than 1 vehicle during the Midday and PM peak hours.

ANALYSIS OF STOP-CONTROLLED INTERSECTIONS

Table 12 below summarizes stop-controlled intersection capacity and LOS analysis performed for 2022 conditions for the unsignalized intersections. Queueing is reported as a number of vehicles in the queue for stop-controlled intersections. Table 13 below summarizes queuing results. Detailed capacity output sheets can be found in Appendix D.

Table 12: 2022 Background and Full Build-Out Stop Control Capacity Analysis Summary – No Driveway 2

Study Intersection	Scenario	Individual Movement LOS and Delay								Intersection LOS			
		Mid-day				PM				Mid-day		PM	
		Movement	Delay[1]	V/C	LOS[2]	Movement	Delay[1]	V/C	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
El Pueblo Rd & Las Lomitas Dr	Background 2022	WBL/T	7.6	0.04	A	WBL/T	8.1	0.20	A	10.7	B	28.1	D
		NBL	10.7	0.07	B	NBL	28.1	0.48	D				
		NBR	8.9	0.05	A	NBR	9.0	0.08	A				
	Full Build 2022	WBL/T	7.7	0.05	A	WBL/T	8.3	0.22	A	11.1	B	36.8	E
		NBL	11.1	0.08	B	NBL	36.8	0.59	E				
		NBR	8.9	0.06	A	NBR	9.1	0.10	A				
El Pueblo Rd & Jacs Ln	Existing 2021	WBL	7.6	0.01	A	WBL	7.6	0.01	A	10.8	B	13.6	B
		NBL	10.8	0.01	B	NBL	13.6	0.03	B				
		NBR	9.2	0.02	A	NBR	9.3	0.02	A				
El Pueblo Rd & Jacs Ln	Background 2022	WBL	7.6	0.01	A	WBL	7.7	0.01	A	10.9	B	13.7	B
		NBL	10.9	0.01	B	NBL	13.7	0.03	B				
		NBR	9.2	0.03	A	NBR	9.3	0.02	A				
	Full Build 2022	WBL	7.6	0.01	A	WBL	7.7	0.01	A	11.0	B	14.5	B
		NBL	11.0	0.02	B	NBL	14.5	0.04	B				
		NBR	9.2	0.03	A	NBR	9.5	0.02	A				
Las Lomitas Dr & Driveway 1	Full Build 2022	EBL/R	13.3	0.11	B	EBL/R	9.6	0.02	A	13.3	B	9.6	A
		NBL/T	8.2	0.00	A	NBL/T	7.5	0.00	A				

[1]Average delay in seconds per vehicle.
[2]LOS stands for Level of Service.

Table 13: 2022 Background and Full Build-Out Stop Control Queue Storage Summary

Study Intersection	Movement	Background 2022		Full Build 2022		Storage Length Present (ft)
		Mid-day	PM	AM	PM	
		95th Percentile (ft)	95th Percentile (ft)	95th Percentile (veh)	95th Percentile (veh)	
El Pueblo Rd & Las Lomitas Dr	EBT	---	---	---	---	---
	EBR	---	---	---	---	310
	WBT	---	---	---	---	---
	WBL/T	2.0	14.0	4.0	16.0	---
	NBL	4.0	52.0	6.0	80.0	350
	NBR	4.0	4.0	4.0	6.0	260
El Pueblo Rd & Jacs Ln	EBT	---	---	---	---	---
	EBR	---	---	---	---	200
	WBT	---	---	---	---	---
	WBL	0.0	0.0	0.0	0.0	135
	NBL	0.0	2.0	2.0	2.0	200
	NBR	2.0	2.0	2.0	2.0	---
Las Lomitas Dr & Driveway 1	EBL/R	---	---	8.0	2.0	---
	NBL/T	---	---	0.0	0.0	---

*95th Percentile Queues are calculated in feet

From the tables above, the following is summarized:

El Pueblo Rd & Las Lomitas Dr

- Capacity Analysis:
  - Under 2022 background conditions, individual movements are observed to operate at an acceptable Level of Service (LOS) for both Midday and PM peak hours. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.
  - Under 2022 full build conditions, individual movements are observed to operate at an acceptable Level of Service (LOS) for the Midday and PM peak hours, except for the northbound left turn movement during the PM peak. This can be attributed to all traffic moving through this intersection since the only available driveway is on Las Lomitas Dr. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.
- Queueing Analysis:
  - Under 2022 background conditions, 95th percentile queue lengths at the intersection are observed to accommodate existing storage lengths during the Midday and PM peak hours.
  - Under 2022 full build conditions, 95th percentile queue lengths at the intersection are observed to accommodate existing storage lengths during the Midday and PM peak hours.

El Pueblo Rd & Jacs Ln

- Capacity Analysis:
  - Under 2022 background conditions, individual movements are observed to operate at an acceptable Level of Service (LOS) for both Midday and PM peak hours. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.
  - Under 2022 full build conditions, individual movements are observed to operate at an acceptable Level of Service (LOS) for both Midday and PM peak hours. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.

- Queueing Analysis:
    - Under 2022 background conditions, 95th percentile queue lengths at the intersection are observed to accommodate existing storage lengths during the Midday and PM peak hours.
    - Under 2022 full build conditions, 95th percentile queue lengths at the intersection are observed to accommodate existing storage lengths during the Midday and PM peak hours.

Las Lomitas Dr & Driveway 1

- Capacity Analysis:
    - Under 2022 full build conditions, individual movements are observed to operate at an acceptable Level of Service (LOS) for both Midday and PM peak hours. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.
- Queueing Analysis:
    - Under 2022 full build conditions, 95th percentile queue lengths at the intersection are observed to accommodate existing storage lengths during the Midday and PM peak hours.

2022 Conditions – Driveway 2 - Right-In/Right-Out

Analysis of Signalized Intersections

Table 14 below summarizes intersection capacity and LOS analysis performed for 2022 conditions for the signalized intersection at El Pueblo Rd & Edith Blvd. Table 15 below summarizes queuing results. Detailed capacity output sheets can be found in Appendix D.

Table 14: 2022 Background and Full Build-Out Signalized Capacity Analysis Summary – Driveway 2 Right-In/Right-Out

Study Intersection	Scenario	Individual Movement LOS and Delay								Intersection LOS			
		Mid-day				PM				Mid-day		PM	
		Movement	Delay[1]	V/C	LOS[2]	Movement	Delay[1]	V/C	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
El Pueblo Rd & Edith Blvd	Background 2022	EBT	13.6	0.14	B	EBT	14.1	0.20	B	15.1	B	18.1	C
		WBT	13.0	0.18	B	WBT	16.1	0.38	B				
		NBT	16.8	0.23	B	NBT	22.0	0.55	C				
		SBT	15.8	0.14	B	SBT	16.2	0.18	B				
	Full Build 2022	EBT	13.6	0.15	B	EBT	14.2	0.21	B	15.2	B	18.8	B
		WBT	14.0	0.20	B	WBT	18.3	0.51	B				
		NBT	16.9	0.24	B	NBT	22.2	0.56	C				
		SBT	15.8	0.14	B	SBT	16.3	0.20	B				

[1]Average delay in seconds per vehicle.
[2]LOS stands for Level of Service.

Table 15: 2022 Background and Full Build-Out Signalized Queue Storage Summary

Study Intersection	Movement	Background 2022		Full Build 2022		Storage Length Present (ft)
		Mid-day	PM	AM	PM	
		95th Percentile (QSR)	95th Percentile (QSR)	95th Percentile (QSR)	95th Percentile (QSR)	
El Pueblo Rd & Edith Blvd	EBT	0.00	0.00	0.00	0.00	---
	WBT	0.00	0.00	0.00	0.00	---
	NBT	0.00	0.00	0.00	0.00	---
	SBT	0.00	0.00	0.00	0.00	---

*95th Percentile (QSR)= Queue Storage Ratio

From the tables above, the following is summarized:

El Pueblo Rd & Edith Blvd

- Capacity Analysis:
  - Under 2022 background conditions, the intersection is observed to operate at an acceptable level of service in both the Midday and PM peak hours. Individual movements are also observed to operate at an acceptable Level of Service (LOS) for the Midday and PM peaks. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.
  - Under 2022 full build conditions, the intersection is observed to operate at an acceptable level of service in both the Midday and PM peak hours. Individual movements are also observed to operate at an acceptable Level of Service (LOS) for the Midday and PM peaks. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.
- Queueing Analysis:
  - Under 2022 background conditions, 95th percentile Queue Storage Ratios (QSR) lengths at the intersection are observed to be less than 1 vehicle during the Midday and PM peak hours.
  - Under 2022 full-build conditions, 95th percentile Queue Storage Ratios (QSR) lengths at the intersection are observed to be less than 1 vehicle during the Midday and PM peak hours.

ANALYSIS OF STOP-CONTROLLED INTERSECTIONS

Table 16 below summarizes stop-controlled intersection capacity and LOS analysis performed for the 2032 Horizon Year for the unsignalized intersections. Queueing is reported as a number of vehicles in the queue for stop-controlled intersections. Table 17 below summarizes queuing results. Detailed capacity output sheets can be found in Appendix D.

Table 16: 2022 Background and Full Build-Out Stop Control Capacity Analysis Summary – Driveway 2 Right-In/Right-Out

Study Intersection	Scenario	Individual Movement LOS and Delay								Intersection LOS			
		Mid-day				PM				Mid-day		PM	
		Movement	Delay[1]	V/C	LOS[2]	Movement	Delay[1]	V/C	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
El Pueblo Rd & Driveway 2	Full Build 2022	NBR	8.8	0.01	A	NBR	9.0	0.02	A	8.8	A	9.0	A
El Pueblo Rd & Las Lomitas Dr	Background 2022	WBL/T	7.6	0.04	A	WBL/T	8.1	0.20	A	10.7	B	28.1	D
		NBL	10.7	0.07	B	NBL	28.1	0.48	D				
		NBR	8.9	0.05	A	NBR	9.0	0.08	A				
	Full Build 2022	WBL/T	7.7	0.05	A	WBL/T	8.4	0.22	A	11.2	B	39.3	E
		NBL	11.2	0.08	B	NBL	39.3	0.61	E				
		NBR	9.0	0.06	A	NBR	9.1	0.09	A				
El Pueblo Rd & Jacs Ln	Background 2022	WBL	7.6	0.01	A	WBL	7.7	0.01	A	10.9	B	13.7	B
		NBL	10.9	0.01	B	NBL	13.7	0.03	B				
		NBR	9.2	0.03	A	NBR	9.3	0.02	A				
	Full Build 2022	WBL	7.6	0.01	A	WBL	7.7	0.01	A	11.0	B	14.5	B
		NBL	11.0	0.02	B	NBL	14.5	0.04	B				
		NBR	9.2	0.03	A	NBR	9.5	0.02	A				
Las Lomitas Dr & Driveway 1	Full Build 2022	EBL/R	9.5	0.01	A	EBL/R	12.7	0.07	B	9.5	A	12.7	B
		NBL/T	7.5	0.00	A	NBL/T	8.2	0.00	A				

[1]Average delay in seconds per vehicle.

[2]LOS stands for Level of Service.

Table 17: 2022 Background and Full Build-Out Stop Control Queue Storage Summary

Study Intersection	Movement	Background 2022		Full Build 2022		Storage Length Present (ft)
		Mid-day	PM	AM	PM	
		95th Percentile (ft)	95th Percentile (ft)	95th Percentile (veh)	95th Percentile (veh)	
El Pueblo Rd & Driveway 2	NBR	---	---	0.0	2.0	---
El Pueblo Rd & Las Lomitas Dr	EBT	---	---	---	---	---
	EBR	---	---	---	---	310
	WBT	---	---	---	---	---
	WBL/T	2.0	14.0	4.0	16.0	---
	NBL	4.0	52.0	6.0	86.0	350
	NBR	4.0	4.0	4.0	6.0	260
El Pueblo Rd & Jacs Ln	EBT	---	---	---	---	---
	EBR	---	---	---	---	200
	WBT	---	---	---	---	---
	WBL	0.0	0.0	0.0	0.0	135
	NBL	0.0	2.0	2.0	2.0	200
	NBR	2.0	2.0	2.0	2.0	---
Las Lomitas Dr & Driveway 1	EBL/R	---	---	0.0	4.0	---
	NBL/T	---	---	0.0	0.0	---

*95th Percentile Queues are calculated in feet

From the tables above, the following is summarized:

El Pueblo Rd & Driveway 2

- Capacity Analysis:
  - Under 2022 full build conditions, individual movements are observed to operate at an acceptable Level of Service (LOS) for both Midday and PM peak hours. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.
- Queueing Analysis:
  - Under 2022 full build conditions, 95th percentile lengths at the intersection are observed to be less than 1 vehicle during the Midday and PM peak hours.

El Pueblo Rd & Las Lomitas Dr

- Capacity Analysis:
  - Under 2022 background conditions, individual movements are observed to operate at an acceptable Level of Service (LOS) for both Midday and PM peak hours. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.
  - Under 2022 full build conditions, individual movements are observed to operate at an acceptable Level of Service (LOS) for the Midday and PM peak hours, except for the northbound left turn movement during the PM peak. This can be attributed to all traffic moving through this intersection since the only available driveway is on Las Lomitas Dr. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.
- Queueing Analysis:
  - Under 2022 background conditions, 95th percentile queue lengths at the intersection are observed to accommodate existing storage lengths during the Midday and PM peak hours.

- Under 2022 full build conditions, 95th percentile queue lengths at the intersection are observed to accommodate existing storage lengths during the Midday and PM peak hours.

El Pueblo Rd & Jacs Ln

- Capacity Analysis:
  - Under 2022 background conditions, individual movements are observed to operate at an acceptable Level of Service (LOS) for both Midday and PM peak hours. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.
  - Under 2022 full build conditions, individual movements are observed to operate at an acceptable Level of Service (LOS) for both Midday and PM peak hours. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.
- Queueing Analysis:
  - Under 2022 background conditions, 95th percentile queue lengths at the intersection are observed to accommodate existing storage lengths during the Midday and PM peak hours.
  - Under 2022 full build conditions, 95th percentile queue lengths at the intersection are observed to accommodate existing storage lengths during the Midday and PM peak hours.

Las Lomitas Dr & Driveway 1

- Capacity Analysis:
  - Under 2022 background conditions, individual movements are observed to operate at an acceptable Level of Service (LOS) for both Midday and PM peak hours. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.
- Queueing Analysis:
  - Under 2022 background conditions, 95th percentile lengths at the intersection are observed to be less than 1 vehicle during the Midday and PM peak hours.

2022 Conditions – Driveway 2 - Full Access

Analysis of Signalized Intersections

Table 18 below summarizes intersection capacity and LOS analysis performed for 2022 conditions for the signalized intersection at El Pueblo Rd & Edith Blvd. Table 19 below summarizes queuing results. Detailed capacity output sheets can be found in Appendix D.

Table 18: 2022 Background and Full Build-Out Signalized Capacity Analysis Summary – Full Access

Study Intersection	Scenario	Individual Movement LOS and Delay								Intersection LOS			
		Mid-day				PM				Mid-day		PM	
		Movement	Delay[1]	V/C	LOS[2]	Movement	Delay[1]	V/C	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
El Pueblo Rd & Edith Blvd	Background 2022	EBT	13.6	0.14	B	EBT	14.1	0.20	B	15.1	B	18.1	C
		WBT	13.0	0.18	B	WBT	16.1	0.38	B				
		NBT	16.8	0.23	B	NBT	22.0	0.55	C				
		SBT	15.8	0.14	B	SBT	16.2	0.18	B				
	Full Build 2022	EBT	13.6	0.15	B	EBT	14.2	0.21	B	15.2	B	18.8	B
		WBT	14.0	0.20	B	WBT	18.3	0.51	B				
		NBT	16.9	0.24	B	NBT	22.2	0.56	C				
		SBT	15.8	0.14	B	SBT	16.3	0.20	B				

[1]Average delay in seconds per vehicle.
[2]LOS stands for Level of Service.

Table 19: 2022 Background and Full Build-Out Signalized Queue Storage Summary

Study Intersection	Movement	Background 2022		Full Build 2022		Storage Length Present (ft)
		Mid-day	PM	AM	PM	
		95th Percentile (QSR)	95th Percentile (QSR)	95th Percentile (QSR)	95th Percentile (QSR)	
El Pueblo Rd & Edith Blvd	EBT	0.00	0.00	0.00	0.00	---
	WBT	0.00	0.00	0.00	0.00	---
	NBT	0.00	0.00	0.00	0.00	---
	SBT	0.00	0.00	0.00	0.00	---

*95th Percentile (QSR)= Queue Storage Ratio

From the tables above, the following is summarized:

El Pueblo Rd & Edith Blvd

- Capacity Analysis:
  - Under 2022 background conditions, the intersection is observed to operate at an acceptable level of service in both the Midday and PM peak hours. Individual movements are also observed to operate at an acceptable Level of Service (LOS) for the Midday and PM peaks. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.
  - Under 2022 full build conditions, the intersection is observed to operate at an acceptable level of service in both the Midday and PM peak hours. Individual movements are also observed to operate at an acceptable Level of Service (LOS) for the Midday and PM peaks. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.

- Queueing Analysis:
  - Under 2022 background conditions, 95th percentile Queue Storage Ratios (QSR) lengths at the intersection are observed to be less than 1 vehicle during the Midday and PM peak hours.
  - Under 2022 full-build conditions, 95th percentile Queue Storage Ratios (QSR) lengths at the intersection are observed to be less than 1 vehicle during the Midday and PM peak hours.

ANALYSIS OF STOP-CONTROLLED INTERSECTIONS

Table 16 below summarizes stop-controlled intersection capacity and LOS analysis performed for 2022 conditions for the unsignalized intersections. Queueing is reported as a number of vehicles in the queue for stop-controlled intersections. Table 17 below summarizes queuing results. Detailed capacity output sheets can be found in Appendix D.

Table 20: 2022 Background and Full Build-Out Stop Control Capacity Analysis Summary – Driveway 2 Full Access

Study Intersection	Scenario	Individual Movement LOS and Delay								Intersection LOS			
		Mid-day				PM				Mid-day		PM	
		Movement	Delay[1]	V/C	LOS[2]	Movement	Delay[1]	V/C	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
El Pueblo Rd & Driveway 2	Full Build 2022	WBL/T	7.6	0.00	A	WBL/T	7.7	0.00	A	9.5	A	10.0	A
		NBL/R	9.5	0.01	A	NBL/R	10.0	0.03	A				
El Pueblo Rd & Las Lomitas Dr	Background 2022	WBL/T	7.6	0.04	A	WBL/T	8.1	0.20	A	10.7	B	28.1	D
		NBL	10.7	0.07	B	NBL	28.1	0.48	D				
		NBR	8.9	0.05	A	NBR	9.0	0.08	A				
	Full Build 2022	WBL/T	7.7	0.05	A	WBL/T	8.3	0.21	A	11.0	B	32.8	D
		NBL	11.0	0.08	B	NBL	32.8	0.53	D				
		NBR	9.0	0.60	A	NBR	9.1	0.10	A				
El Pueblo Rd & Jacs Ln	Background 2022	WBL	7.6	0.01	A	WBL	7.7	0.01	A	10.9	B	13.7	B
		NBL	10.9	0.01	B	NBL	13.7	0.03	B				
		NBR	9.2	0.03	A	NBR	9.3	0.02	A				
	Full Build 2022	WBL	7.6	0.01	A	WBL	7.7	0.01	A	11.0	B	14.5	B
		NBL	11.0	0.02	B	NBL	14.5	0.04	B				
		NBR	9.2	0.03	A	NBR	9.5	0.02	A				
Las Lomitas Dr & Driveway 1	Full Build 2022	EBL/R	9.5	0.01	A	EBL/R	12.6	0.06	B	9.5	A	12.6	B
		NBL/T	7.5	0.00	A	NBL/T	8.2	0.00	A				

[1]Average delay in seconds per vehicle.
[2]LOS stands for Level of Service.

Table 21: 2022 Background and Full Build-Out Stop Control Queue Storage Summary

Study Intersection	Movement	Background 2022		Movement	Full Build 2022		Storage Length Present (ft)
		Mid-day	PM		Mid-day	PM	
		95th Percentile (ft)	95th Percentile (ft)		95th Percentile (veh)	95th Percentile (veh)	
El Pueblo Rd & Driveway 2	NBR	---	---	WBL/T	0.0	0.0	---
El Pueblo Rd & Las Lomitas Dr	EBT	---	---	EBT	---	---	---
	EBR	---	---	EBR	---	---	310
	WBT	---	---	WBT	---	---	---
	WBL/T	2.0	14.0	WBL/T	4.0	16.0	---
	NBL	4.0	52.0	NBL	6.0	64.0	350
	NBR	4.0	4.0	NBR	4.0	6.0	260
El Pueblo Rd & Jacs Ln	EBT	---	---	EBT	---	---	---
	EBR	---	---	EBR	---	---	200
	WBT	---	---	WBT	---	---	---
	WBL	0.0	0.0	WBL	0.0	0.0	135
	NBL	0.0	2.0	NBL	2.0	2.0	200
	NBR	2.0	2.0	NBR	2.0	2.0	---
Las Lomitas Dr & Driveway 1	EBL/R	---	---	EBL/R	0.0	4.0	---
	NBL/T	---	---	NBL/T	0.0	0.0	---

*95th Percentile Queues are calculated in feet

From the tables above, the following is summarized:

El Pueblo Rd & Driveway 2

- Capacity Analysis:
  - Under 2022 full build conditions, individual movements are observed to operate at an acceptable Level of Service (LOS) for both Midday and PM peak hours. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.
- Queueing Analysis:
  - Under 2022 full build conditions, 95th percentile lengths at the intersection are observed to be less than 1 vehicle during the Midday and PM peak hours.

El Pueblo Rd & Las Lomitas Dr

- Capacity Analysis:
    - Under 2022 background conditions, individual movements are observed to operate at an acceptable Level of Service (LOS) for both Midday and PM peak hours. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.
    - Under 2022 full build conditions, individual movements are observed to operate at an acceptable Level of Service (LOS) for the Midday and PM peak hours. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.
- Queueing Analysis:
    - Under 2022 background conditions, 95th percentile queue lengths at the intersection are observed to accommodate existing storage lengths during the Midday and PM peak hours.
- Under 2022 full build conditions, 95th percentile queue lengths at the intersection are observed to accommodate existing storage lengths during the Midday and PM peak hours.

El Pueblo Rd & Jacs Ln

- Capacity Analysis:
    - Under 2022 background conditions, individual movements are observed to operate at an acceptable Level of Service (LOS) for both Midday and PM peak hours. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.
    - Under 2022 full build conditions, individual movements are observed to operate at an acceptable Level of Service (LOS) for both Midday and PM peak hours. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.
- Queueing Analysis:
    - Under 2022 background conditions, 95th percentile queue lengths at the intersection are observed to accommodate existing storage lengths during the Midday and PM peak hours.
    - Under 2022 full build conditions, 95th percentile queue lengths at the intersection are observed to accommodate existing storage lengths during the Midday and PM peak hours.

Las Lomitas Dr & Driveway 1

- Capacity Analysis:
    - Under 2022 full build conditions, individual movements are observed to operate at an acceptable Level of Service (LOS) for both Midday and PM peak hours. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.
- Queueing Analysis:
    - Under 2022 full build conditions, 95th percentile lengths at the intersection are observed to be less than 1 vehicle during the Midday and PM peak hours.

DEVELOPMENT SITE-SPECIFIC OBSERVATIONS AND RECOMMENDATIONS

SIGHT DISTANCE EVALUATION

The following presents a narrative detailing recommended intersection sight distance requirements for the development. Intersection sight distance requirements were calculated per the City of Albuquerque Design Process Manual using the 2018 AASHTO "Green Book" chapter 9.5. Two sight distance cases were used for this analysis:

- Case B1 – A stopped vehicle turning left from a minor street approach onto a major road.
- Case B2 – A stopped vehicle turning right from a minor street approach onto a major road.

Intersection sight distances were calculated based on the following assumptions:

- Required intersection sight distance for Case B1 at all four access driveways was calculated based on the design vehicle crossing a single lane of traffic on an undivided roadway.
- Required intersection sight distance for Case B2 at all four access driveways was calculated based on the design vehicle crossing into the nearest lane of traffic.

Due to the nature of this development, a single passenger vehicle was used as the design vehicle. Values shown below in Table 22 were rounded up to the nearest 5-foot increment. Formulas, values, and calculations used in the sight distance analysis can be found in the Appendix F.

Table 22: Sight Distance Requirements

Case	Location	Speed	Sight Distance
Case B1 - Turning Left	Driveway 1 on Las Lomitas Dr	35 MPH	390 Feet
Case B2 - Turning Right	Driveway 1 on Las Lomitas Dr	35 MPH	335 Feet
Case B1 - Turning Left	Driveway 2 on El Pueblo Rd	35 MPH	390 Feet
Case B2 - Turning Right	Driveway 2 on El Pueblo Rd	35 MPH	335 Feet

Using the values shown in Table 22, it is recommended that all development driveways adhere to the sight distance provisions detailed in the AASHTO "Green Book." An area bounded by the above sight distances with the decision point placed 14.5 feet back from the edge of the shoulder midway between the outbound driving lane should be maintained clear of any obstructions.

Turn Lane Analysis

As part of this study, an auxiliary lane analysis was conducted for the proposed site access driveway along El Pueblo Rd for each configuration.

Guidelines in NMDOT's *State Access Management Manual (SAMM) Table 17.B-1 Criteria for Deceleration Lanes on Urban Multi-Lane Highways* state that:

- For roadways with a posted speed limit of 35 mph, a left turn deceleration lane is required when peak hour right turns are greater than 36 vehicles per hour.
- For roadways with a posted speed limit of 35 mph, a right turn deceleration lane is required when peak hour right turns are greater than 41 vehicles per hour.

The results of this analysis are shown in the table below. Full-Build turning movement volumes and full build-out trips were used in the analysis.

Table 23: Auxiliary Lane Analysis

Roadway/Driveway		Left Turn Warrants			
Warrant Location	Speed Limit (MPH)	Left Turning Volume Mid-day (PM)	Left Turn Warrant Threshold	Adjacent Through Lane Volume Per	Left Turn Warrant Result (per Table 17B-1)
El Pueblo Rd at Driveway 2 (Right-In/Right-Out Configuration)	35	-	-	-	-
El Pueblo Rd at Driveway 2 (Full Access Configuration)	35	5 (6)	426 Adjacent Vehicles	86 (127)	Not Required

Roadway/Driveway		Right Turn Warrants			
Warrant Location	Speed Limit (MPH)	Right Turning Volume Mid-day (PM)	Right Turn Warrant Threshold	Adjacent Through Lane Volume Per	Right Turn Warrant Result (per Table 17B-1)
El Pueblo Rd at Driveway 2 (Right-In/Right-Out Configuration)	35	9 (13)	328 Adjacent Vehicles	150 (188)	Not Required
El Pueblo Rd at Driveway 2 (Full Access Configuration)	35	9 (13)	328 Adjacent Vehicles	150 (188)	Not Required

Based on the analysis presented above, turn lanes are not warranted for either configuration of the proposed site driveway on El Pueblo Rd.

Site Access Analysis (Driveway Spacing)

The NMDOT's *State Access Management Manual (SAMM)* Table, 18.C-1 Access Spacing Standards for Intersections and Driveways, states the following:

- For Urban Collectors (UCOL) with a posted speed limit of 35 mph to 40 mph, the required driveway spacing for partial access is 225 feet.
- For Urban Collectors (UCOL) with a posted speed limit of 35 mph to 40 mph, the required driveway spacing for full access is 330 feet.

The available spacing between the existing driveway is shown in the table below.

Table 24: Driveway Spacing

Location	Access Category	Speed	Driveway Spacing		
			Available (Approx.)	Partial Acccess Required	Full Access Required
El Pueblo between Driveway 2 and Las Lomitas Dr	Non-Interstate Highway - UCOL	35 MPH	250'	225'	330'

Based on the above information, the space provided between the proposed Driveway 2 and Las Lomitas Dr meets SAMM recommended spacing for partial access configuration but does not meet SAMM recommended spacing for full access configuration.

CRASH SUMMARY

Aggregate crash data were obtained for the study intersections for the most recently available five years of data. This included 2015 to 2019. Crashes are summarized by year, type, lighting conditions, severity, and cause. The table below summarizes crashes occurring at the intersection.

Table 25: Crash Summary

Crash Summary		El Pueblo Rd Between Edith Blvd and 2nd	El Pueblo Rd & Edith Blvd	El Pueblo Rd & Jacs Ln	El Pueblo Rd & Las Lomitas Dr	Las Lomitas Dr South of Pueblo Rd
	Total Crashes	**7**	**25**	**1**	**3**	**1**
By Year	2015	0	1	0	1	1
	2016	5	11	0	1	0
	2017	0	2	0	1	0
	2018	1	5	1	0	0
	2019	1	6	0	0	0
By Type	Fixed Object	0	1	0	2	0
	Invalid Code/Left Blank	0	1	0	0	0
	Other Vehicle - Both Going Straight/Entering At Angle	2	1	0	0	0
	Other Vehicle - Both Turning/Entering At Angle	0	1	0	0	0
	Other Vehicle - From Opposite Direction	1	2	0	0	0
	Other Vehicle - From Same Direction/All Others	3	16	0	1	1
	Parked Vehicle	1	1	0	0	0
	Pedalcyclist	0	1	0	0	0
	%Other Vehicle - From Same Direction/All Others	43%	64%	0%	33%	100%
	%Fixed Object	0%	4%	0%	67%	0%
	%Other Vehicle - Both Going Straight/Entering At Angle	29%	4%	0%	0%	0%
	%Other Vehicle - From Opposite Direction	14%	8%	0%	0%	0%
	%Parked Vehicle	0%	4%	0%	67%	0%
By Lighting Conditions	Day	6	18	1	2	1
	Dawn/Dusk	1	1	0	1	0
	Dark	0	5	0	0	0
	Invalid Code/Not Specified	0	1	0	0	0
	%Day	86%	72%	100%	67%	100%
	%Dark	0%	20%	0%	0%	0%
By Severity	PDO	6	16	1	1	1
	Injury	1	9	0	2	0
	%PDO	86%	64%	100%	33%	100%
	%Injury	14%	36%	0%	67%	0%
By Contributing Factors	Alcohol/Drug Involved	0	2	0	1	0
	Avoid No Contact - Vehicle	0	1	0	0	0
	Disregarded Traffic Signal	0	1	0	0	0
	Driver Inattention	2	7	1	0	1
	Excessive Speed	0	1	0	0	0
	Failed to Yield Right of Way	2	6	0	0	0
	Following Too Closely	0	2	0	1	0
	Improper Backing	1	1	0	0	0
	Improper Overtaking	1	0	0	0	0
	Made Improper Turn	0	2	0	0	0
	None/Missing Data	0	2	0	1	0
	Speed Too Fast for Conditions	1	0	0	0	0
	%Driver Inattention	29%	28%	100%	0%	100%
	%Failed to Yield Right of Way	29%	24%	0%	0%	0%
	%Alcohol/Drug Involved	0%	8%	0%	33%	0%
	%Alcohol/Drug Involved	0%	8%	0%	33%	0%

Based on Table 25, the following is observed for the signalized intersection of El Pueblo Rd and Edith Dr:

- For the 5 years of data summarized, 25 crashes occurred.
- The most common classification of crashes (other than an invalid code) is observed to be Other Vehicle – From Same Direction/All Others.
- A majority of the crashes occurred during daylight hours, totaling 72% of the crashes.
- For the data reviewed, no fatal crashes were reported, but injury crashes accounted for 36% of the total crashes.
- The most common contributing factor was observed to be Driver Inattention.

Based on the above table, the following is observed for the remaining unsignalized study intersections along El Pueblo Rd:

- For the 5 years of data summarized, 12 crashes occurred.
- The most common classification of crashes (other than an invalid code) is observed to be Other Vehicle – From Same Direction/All Others.
- A majority of the crashes occurred during daylight hours, totaling 83% of the crashes.
- For the data reviewed, no fatal crashes were reported, but injury crashes accounted for 25% of the total crashes.
- The most common contributing factor was observed to be Driver Inattention.

Highway Safety Manual Predictive Crash Analysis

Using existing roadway configurations and existing traffic conditions, an Interactive Highway Safety Design Manual (IHSDM) model was developed for the intersection of El Pueblo Rd & Driveway 2 as a right-in/right-out driveway and full access driveway. The model utilizes Highway Manual Safety Performance Functions (SPF). Crash rates and total expected crash frequencies were predicted for a 5-year period to be consistent with historical crash data reviewed in the previous section. Table 26 shows the results of the IHSDM analysis and compares the calculated results to crash data detailed in the intersection crash analysis section of this report. Output sheets from the IHSDM software can be found in the Appendix G.

Table 26: IHSDM Predictive Crash Analysis

Location	IHSDM Analysis	
	Predicted Total Crashes in 5 Year Period	Predicted No. of Crashes/Year
El Pueblo Rd & Driveway 2 (No DWY 2)	---	---
El Pueblo Rd & Driveway 2 (RI/RO)	0.573	0.095
El Pueblo Rd & Driveway 2 (Full Access)	0.140	0.023
El Pueblo Rd & Las Lomitas Dr (No DWY 2)	1.901	0.317
El Pueblo Rd & Las Lomitas Dr (RI/RO)	0.121	0.020
El Pueblo Rd & Las Lomitas Dr (Full Access)	0.070	0.012

As shown in Table 26, all access scenarios of the intersection of El Pueblo Rd & Driveway 2 are observed to have less than 1 predicted crash per year, as predicted by the IHSDM software. The software was unable to provide results for the El Pueblo Rd & Driveway 2 (No DWY 2) scenario because the intersection does not exist. However, there were no reported crashes along this segment of El Pueblo Rd within the last five years.

It should be noted that IHSDM software uses various factors as default inputs that are based on national trends. The state of New Mexico has not yet developed inputs for local calibration adjustments. This lack of calibration would explain some of the differences between observed and predicted crash frequencies. In addition, the predictive model is focused primarily on the volume of demand, traffic control, and lane geometry. However, it does not account for other local factors that may impact crash frequency.

EL PUEBLO RD ACCESS (DRIVEWAY 2) ANALYSIS

Three alternatives for a driveway on El Pueblo Rd were analyzed to determine the overall operations of the study area for the proposed development.

CONFIGURATION 1

This configuration analyzes the study area intersections assuming there is no Driveway 2 on El Pueblo Rd. Therefore, all traffic must enter and exit the site using Driveway 1 on Las Lomitas Dr. This configuration is identified as "No Driveway 2" in this report.

The capacity analysis for this configuration shows that, under the full build 2022 conditions, during the PM peak, the northbound left-turn movement of El Pueblo Rd and Las Lomitas Dr will operate below acceptable delay and level of service. This is due to the intersection carrying all EB/WB and NB site traffic entering and exiting the site through Driveway 1. It is noted that the v/c ratios for these movements do not indicate that the movements exceed capacity.

Constructability:

Regardless of the driveway configuration and levels of service, it is recommended that the inner westbound through/left approach lane on El Pueblo Rd at Las Lomitas Dr be converted to a dedicated left-turn lane via re-striping the lane.

CONFIGURATION 2

This configuration analyzes the study area intersections assuming there is a restricted partial access Driveway 2 on El Pueblo Rd. Therefore, traffic is allowed to make a right turn in and a right turn out of Driveway 2. All traffic going west and north toward Edith Blvd will be required to exit at Driveway 1. This configuration is identified as "Driveway 2 Right-In/Right-Out" in this report.

The capacity analysis for this configuration shows that, under the full build 2022 conditions, during the PM peak, the northbound left-turn movement of El Pueblo Rd and Las Lomitas Dr will operate below acceptable delay and level of service. This is due to the intersection carrying the WB and some of the NB site traffic exiting the site through Driveway 1. Although the proposed right-in/right-out driveway will decrease the amount of site traffic using the intersection of El Pueblo Rd and Las Lomitas Dr, the intersection is shown to operate below acceptable levels of service.

Per the NMDOT SAMM, the required spacing for a right-in/right-out driveway (partial access) is 225 feet, and the current available spacing of the proposed driveway is 230 feet. Therefore, this spacing meets NMDOT SAMM recommended spacings. Furthermore, based on SAMM criteria, a dedicated right-turn lane is not required for this configuration.

Constructability:

Regardless of the driveway configuration and levels of service, it is recommended that the inner westbound through/left approach lane on El Pueblo Rd at Las Lomitas Dr be converted to a dedicated left-turn lane via re-striping the lane.

For the existing turn lane for the EBR at Las Lomitas Dr, it is recommended that the turn lane be shortened to approximately 230 feet, including taper between the Driveway 2 and Las Lomitas Dr. This configuration

meets SAMM recommendations using the provisions of Chapter 8 Section K.(a).ii and Chapter 8 Section K.(b).ii.

It is recommended that a physical barrier be provided on El Pueblo Rd to prevent left turns into and out of Driveway 2.

CONFIGURATION 3

This configuration analyzes the study area intersections assuming full access is provided at Driveway 2 on El Pueblo Rd. This configuration allows entering and exiting traffic to make all movements at Driveway 2. This configuration is identified as "Driveway 2 Full Access" in this report.

The capacity analysis for this configuration shows that, under the full build 2022 conditions, all movements and approaches at all intersections will operate at acceptable levels of service and delay.

Per the NMDOT SAMM, the recommended spacing for a full access driveway is 330 feet, and the current available spacing of the proposed driveway is approximately 250 feet. While this spacing does not meet SAMM recommendations, the expected left turns generated by the proposed development at this driveway are 5 left turns during the mid-day peak and 6 left turns during the PM peak. Therefore, the provided spacing and low volumes of this movement are not likely to significantly impact the operations along El Pueblo Rd.

Based on SAMM criteria, turn lanes are not required for this configuration.

Constructability:

Regardless of the driveway configuration and levels of service, it is recommended that the inner westbound through/left approach lane on El Pueblo Rd at Las Lomitas Dr be converted to a dedicated left-turn lane via re-striping the lane.

For the existing turn lane for the EBR at Las Lomitas Dr, it is recommended that the turn lane be shortened to approximately 230 feet, including taper between the Driveway 2 and Las Lomitas Dr. This configuration meets SAMM recommendations using the provisions of Chapter 8 Section K.(a).ii and Chapter 8 Section K.(b).ii.

It is recommended that the second westbound lane at Driveway 2 be converted to a left turn lane via re-striping the lane.

CONCLUSION AND DRIVEWAY CONFIGURATION RECOMMENDATION

Based on the findings of this report, and information presented regarding driveway configuration, it is recommended that site access be provided via either one full access driveway on Las Lomitas Dr and one full access driveway on El Pueblo Rd or a partial access on El Pueblo Rd with full access to Las Lomitas Dr.

ADDITIONAL RECOMMENDATIONS

- Regardless of the driveway configuration and levels of service, it is recommended that the inner westbound through/left approach lane on El Pueblo Rd at Las Lomitas Dr be converted to a dedicated left-turn lane via re-striping the lane.
- It is recommended that intersection sight distance, as detailed in the sight distance section of this report, be provided/maintained.