



OCTOBER 25, 2022

UNIVERSE VIEW SUBDIVISION
TRAFFIC IMPACT ANALYSIS
ALBUQUERQUE, NEW MEXICO

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HT#C09D016
Received 11/1/2022

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EXECUTIVE SUMMARY

Study Purpose

This report analyzes the traffic impacts of the proposed Universe View subdivision, which will be located in the northwest area of Albuquerque, New Mexico. This analysis will identify the traffic impacts of the Universe View development and develop mitigations for intersections that are adversely impacted.

Site Location and Study Area

The proposed Universe View subdivision will include the developments listed below, which will be built in separate phases. A site plan of the proposed site is provided in **Appendix A1**.

- Phase I – 162 townhome units (Opening Year 2023)
- Phase II – 196 apartment units. An apartment leasing office and gym will also be built in this phase. The gym will only be available to apartment tenants. (Opening Year 2025)
- Phase III – 14,400 GSF pharmacy without drive-through and 14,726 GSF commercial building (Opening Year 2027)

The proposed subdivision will be located about 5 miles north of Interstate Highway 40 (IH 40) and about 7 miles west of Interstate Highway 25 (IH 25). The subdivision can be accessed through Universe Blvd, which connects to Paseo Del Norte Blvd and Rainbow Blvd. Currently the site of the proposed subdivision is vacant. Once the subdivision is built, it will only have access to Universe Blvd through driveways and the proposed Rosa Parks Rd and Perezoso Dr cross streets. The subdivision will have two driveways intersecting Universe Blvd, three driveways intersecting Rosa Parks Rd, and one driveway intersecting Perezoso Dr.

Major intersections in the vicinity of the project area were investigated for this study. **Table A** includes the intersections investigated, the intersection numbering used in this report, and the intersection control type. The study intersections are also identified with corresponding intersection numbers in **Figure 1 (Appendix B)**.

Table A – Intersections Identified for Impact Analysis Numbering and Control Type

Intersection Numbering	Location	Control Type
1	Universe Blvd & Paseo Del Norte Blvd	Signalized
2	Universe Blvd & School Access Road	Unsignalized
3	Universe Blvd & Rosa Parks Rd	Unsignalized
4	Universe Blvd & Driveway 1	Unsignalized
5	Universe Blvd & Driveway 2	Unsignalized
6	Universe Blvd & Perezoso Dr	Unsignalized
7	Universe Blvd & Rainbow Blvd	Signalized
8	Rosa Parks Rd & Driveway 3	Unsignalized
9	Rosa Parks Rd & Driveway 4	Unsignalized
10	Rosa Parks Rd & Driveway 5	Unsignalized
11	Perezoso Dr & Driveway 6	Unsignalized

For this study, Synchro 11 software was used to analyze the traffic conditions for the following scenarios:

- 2022 Existing Conditions
- Phase I No Build Conditions (Year 2023 without Universe View subdivision)
- Phase I Build Conditions (Year 2023 with Universe View subdivision)
- Phase II No Build Conditions (Year 2025 without Universe View subdivision)
- Phase II Build Conditions (Year 2025 with Universe View subdivision)
- Phase III No Build Conditions (Year 2027 without Universe View subdivision)
- Phase III Build Conditions (Year 2027 with Universe View subdivision)
- Horizon Year No Build (Year 2033 without Universe View subdivision)
- Horizon Year Build (Year 2033 with Universe View subdivision)

The sight distance was also evaluated for the proposed access points along Universe Blvd (Rosa Parks Rd, Driveway 1, Driveway 2, and Perezoso Dr). AASHTO's *A Policy on Geometric Design of Highways and Streets, 2018 7th Edition* methodology was followed in the sight distance evaluation.

Principal Findings

Based on the results of the traffic analysis, it was concluded that the development will not adversely impact the intersections in the Phase I (2023), Phase II (2025), and Phase III (2027) scenarios. All intersections perform at a LOS D or better in 2027 for all scenarios, except for:

- Intersection 1 (Universe Blvd & Paseo del Norte Blvd) – The intersection is expected to deteriorate to a LOS E and F during the 2025 AM and PM peak hour, respectively. However, this deterioration in LOS is expected to occur even without the proposed development which only increases the delay by less than one second during both peak hours. It was also noted that the EB and SB left-turns and NB right-turn auxiliary lane storage lengths are exceeded in the No Build conditions.

The City may consider increasing the storage length for these movements to accommodate the turning traffic. Intersection 1 may be improved in a future phase of the City's Paseo del Norte project; however, the intersection improvements and the timeline for their implementation have not been defined by the City at the moment.

By the Horizon 2033 year, all intersections are still expected to perform at a LOS D or better except for:

- Intersection 1 (Universe Blvd & Paseo del Norte Blvd) – The intersection is expected to deteriorate to a LOS F by 2033 during both peak hours. However, this deterioration in LOS is expected to occur even without the proposed development, which only increases the delay by less than one second during both peak hours.
- Intersection 2 (Universe Blvd and School Access Road) – A LOS E is expected during the 2033 AM Build peak hour for 1-stage EB left turns. However, the proposed cross section of Universe Blvd will include a median, which will allow a 2-staged left turn movement for the EB approach. This will improve the LOS to a C or better during both peak hours.
- Intersection 7 (Universe Blvd & Rainbow Blvd intersection) – The intersection is expected to deteriorate to a LOS E in the 2033 AM No Build and Build peak hour. However, the proposed development will increase the delay by almost 20 seconds when compared to the 2033 No Build conditions. It can also be noted that the Existing 2022 queue (without the development) exceeds the SB left-turn storage. The City may consider modifying the lane configuration for the SB movement to accommodate the high SB left-turn volumes.

Based on the traffic analysis results, it can be concluded that the Universe View development will adversely impact Intersection 7.

Also, from the sight distance analysis performed, it can be concluded that there will be no sight distance issues at the proposed Rosa Parks Rd and Perezoso Dr intersections with Universe Blvd, and the two driveway access points along Universe Blvd.

Recommendations

To mitigate the impacts to Intersection 7, a WB right-turn auxiliary lane (240-ft storage length with 150-ft of transition) and signal optimization are recommended after Phase III is completed. However, before any improvements are implemented, it is recommended that the intersection be evaluated again at the completion of Phase III to verify that the improvements are required. If Rosa Parks Rd is extended to Unser Blvd by the end of this phase, the amount of traffic accessing the development through Universe Blvd will be reduced given that traffic would be able to access the development through Rosa Parks Rd and Unser Blvd. This would decrease the development's generated traffic at Intersection 7 and minimize the traffic impacts; therefore, only signal optimization (without the additional WB right-turn auxiliary lane) would be recommended.

INTRODUCTION

This report analyzes the traffic impacts of the proposed Universe View subdivision. The subdivision will include 162 townhome units, 196 apartment units, a pharmacy with no drive-through (14,400 GSF), and a commercial building (14,726 GSF). This analysis will determine the traffic impacts of the development and develop mitigations for intersections that are adversely impacted.

PROPOSED DEVELOPMENT

The proposed Universe View subdivision will be located in the northwest area of Albuquerque, New Mexico. It will include the developments listed below, which will be built in separate phases. A site plan of the proposed development is provided in **Appendix A1**.

- Phase I – 162 townhome units (Opening Year 2023)
- Phase II – 196 apartment units (Opening Year 2025)
- Phase III – 14,400 GSF pharmacy without drive-through and 14,726 GSF commercial building (Opening Year 2027)

The Universe View subdivision will be located about 5 miles north of Interstate Highway 40 (IH 40) and about 7 miles west of Interstate Highway 25 (IH 25). The subdivision can be accessed through Universe Blvd, which connects to Paseo Del Norte Blvd. Paseo Del Norte Blvd is a principal arterial that provides direct access to IH 25. Access to IH 40 is also possible through Unser Blvd, a principal arterial east of the Universe View subdivision. **Figure 1 (Appendix B)** identifies the project area in relation to the surrounding roadway network.

Currently the site of the proposed subdivision is vacant. Once the subdivision is built, it will have access to Universe Blvd through driveways and the proposed Rosa Parks Rd and Perezoso Dr cross streets. The subdivision will have two driveways intersecting Universe Blvd, three driveways intersecting Rosa Parks Rd, and one driveway intersecting Perezoso Dr. The characteristics of the main access roads to the subdivision site are described in **Table 1.1**. **Table 1.2** compares the existing and proposed characteristics of each access road. Exhibits of the existing and proposed typical sections are also presented in **Appendix A2**.

Table 1.1 – Access Road Characteristics

Roadway	Number of Lanes	Classification	Speed Limit (mph)
Universe Blvd	2	Minor Arterial	35
Rosa Parks Rd (Proposed)	2	Local Road	30
Perezoso Dr (Proposed)	2	Local Road	25

Table 1.2 – Existing and Proposed Typical Sections

Roadway	Cross-Section	Number of Lanes	Shoulder Width	Median Width	Curb	Bike Lanes	Sidewalk	Paved
Universe Blvd	Existing	Two - 11 ft ea.	4 to 6 ft	None	No	No	No	Yes
	Proposed	Two - 11 ft ea.	None	16 ft	Yes	Yes	Yes	Yes
Rosa Parks Rd	Existing	Unpaved Road						
	Proposed	Two - 11 ft ea.	None	None	Yes	Yes	Yes	Yes
Perezoso Dr	Existing	Unpaved Road						
	Proposed	Two - 9 ft ea.	None	None	Yes	None	Yes	Yes

STUDY AREA

Study Intersections

Major intersections in the vicinity of the project area were investigated for this study. **Table 2** includes the intersections investigated, the numbering used in this report, and the intersection control type. The study intersections are also identified with corresponding intersection numbers in **Figure 1 (Appendix B)**.

Table 2 – Study Intersections Numbering and Control Type

Intersection Numbering	Location	Control Type
1	Universe Blvd & Paseo Del Norte Blvd	Signalized
2	Universe Blvd & School Access Road	Unsignalized
3	Universe Blvd & Rosa Parks Rd	Unsignalized
4	Universe Blvd & Driveway 1	Unsignalized
5	Universe Blvd & Driveway 2	Unsignalized
6	Universe Blvd & Perezoso Dr	Unsignalized
7	Universe Blvd & Rainbow Blvd	Signalized
8	Rosa Parks Rd & Driveway 3	Unsignalized
9	Rosa Parks Rd & Driveway 4	Unsignalized
10	Rosa Parks Rd & Driveway 5	Unsignalized
11	Perezoso Dr & Driveway 6	Unsignalized

Intersection 1 is an existing signalized intersection at Universe Blvd and Paseo Del Norte Blvd. Universe Blvd southbound (SB) and Paseo Del Norte Blvd westbound (WB) include one channelized right-turn lane, one through lane, and one dedicated left-turn auxiliary lane. Universe Blvd northbound (NB) and Paseo Del Norte Blvd eastbound (EB) include one dedicated left-turn auxiliary lane, one through lane, and one right-turn auxiliary lane. All left-turns are permitted-protected.

Intersection 2 is an existing unsignalized intersection at Universe Blvd and an access road to Volcano Vista High School. The NB approach of Universe Blvd includes one auxiliary left-turn lane and one through lane. The SB approach of Universe Blvd includes one shared through/right-turn lane. The EB approach of the driveway includes one wide lane where vehicles separate into a left-turn lane and right-turn lane.

Intersection 3 is an unsignalized intersection at Universe Blvd and Rosa Park Rd. Currently, Rosa Parks Rd is an unpaved road. The Universe View subdivision will pave a segment of Rosa Parks Rd east of Universe Blvd and provide a two-lane street (one lane in each direction). The NB and SB directions along Universe Blvd will be free flow, and the WB direction will be stop-controlled.

Intersection 4 is a future unsignalized three-way intersection at Universe Blvd and Driveway 1. The driveway includes one entry and one exit lane to the development. The NB and SB directions along Universe Blvd will be free flow, and the WB direction will be stop-controlled.

Intersection 5 is a future unsignalized three-way intersection at Universe Blvd and Driveway 2. The driveway includes one entry and one exit lane to the development. The NB and SB directions along Universe Blvd will be free flow, and the WB direction will be stop-controlled.

Intersection 6 is an unsignalized intersection at Universe Blvd and Perezoso Dr. Currently, Perezoso Dr is an unpaved road. The Universe View subdivision will pave a segment of Perezoso Dr east of Universe Blvd and provide a two-lane road (one lane in each direction). The NB and SB directions along Universe Blvd will be free flow, and the WB direction will be stop-controlled.

Intersection 7 is an existing signalized intersection at Universe Blvd and Rainbow Blvd. Universe Blvd, NB and SB, include one dedicated left-turn auxiliary lane and one shared through/right-turn lane. Rainbow Blvd, EB and WB, include one dedicated left-turn auxiliary lane, one through lane, and one shared through/right-turn lane. All left-turns are permitted-protected.

Intersection 8 is a future unsignalized three-way intersection at Rosa Parks Rd and Driveway 3. The driveway includes one entry and one exit lane to the development. The EB and WB directions along Rosa Parks Rd will be free flow, and the NB direction will be stop-controlled.

Intersection 9 is a future unsignalized three-way intersection at Rosa Parks Rd and Driveway 4. The driveway includes one entry and one exit lane to the development. The EB and WB directions along Rosa Parks Rd will be free flow, and the NB direction will be stop-controlled.

Intersection 10 is a future unsignalized three-way intersection at Rosa Parks Rd and Driveway 5. The driveway includes one entry and one exit lane to the development. The EB and WB directions along Rosa Parks Rd will be free flow, and the NB direction will be stop-controlled.

Intersection 11 is a future unsignalized three-way intersection at Perezoso Dr and Driveway 6. The driveway includes one entry and one exit lane to the development. The EB and WB directions along Perezoso Dr will be free flow, and the SB direction will be stop-controlled.

Adjacent Developments

The proposed project site is primarily surrounded by vacant land east and west of the project site, and residential developments north of the school access road and south of Rainbow Blvd. Volcano Vista High School and Tony Hillerman Middle School are located within a mile northwest of the project site. Ventana Ranch Park, Ventana Ranch Elementary, Sunset View Elementary, James Monroe Middle school, and a small shopping center are located north of Paseo del Norte within about 1.5 miles from the project site.

Future Developments

Four future developments planned in the vicinity of the project site were identified. The developments considered are described below and are labeled in **Figure 1 (Appendix B)**. Two of these developments were under construction during the data collection process, and the other two will be constructed in future years. Therefore, the expected generated trips for all developments will need to be considered in this study.

The traffic studies provided by the City of Albuquerque for the four developments were reviewed to identify the expected trip generation for each. The traffic generated by the developments was distributed through the roadway network and study intersections to consider their impact in the study area. The generated trips considered for the study intersections are presented in **Figures 7 through 10 in Appendix B**.

- Sonata Apartments
 - Description: 245-unit multi-family residential development on approximately 29.9 acres
 - Location: located along the east side of Universe Blvd, south of Paseo del Norte Blvd
 - Completion Year: 2022
- Trails Tract 1
 - Description: 333 multi-family residential units
 - Location: located in the southwest corner of Paseo del Norte and Woodmont Ave
 - Completion Year: 2022.
- La Cuentista
 - Description: 244-unit single family residential development on approximately 59.08 acres
 - Location: southeast of the Paseo del Norte Blvd and Unser Blvd intersection
 - Completion Year: 2024
- Ventana Ranch Retail Commercial Development
 - Description: 92,240 SF of retail commercial floor space on 11 acres of land
 - Location: northeast corner of the Paseo del Norte Blvd and Universe Blvd intersection
 - Completion Year: 2025

Study Scenarios

For this study, Synchro 11 software was used to analyze the traffic conditions for the following scenarios:

- 2022 Existing Conditions
- Phase I No Build Conditions (Year 2023 without Universe View subdivision)
- Phase I Build Conditions (Year 2023 with Universe View subdivision)
- Phase II No Build Conditions (Year 2025 without Universe View subdivision)
- Phase II Build Conditions (Year 2025 with Universe View subdivision)
- Phase III No Build Conditions (Year 2027 without Universe View subdivision)
- Phase III Build Conditions (Year 2027 with Universe View subdivision)
- Horizon Year No Build (Year 2033 without Universe View subdivision)
- Horizon Year No Build (Year 2033 with Universe View subdivision)

All No Build and Build scenarios will include background traffic growth and the four future developments identified in the previous section.

TRAFFIC VOLUMES

Existing Traffic Volumes

Existing turning movement counts for the three existing project intersections were collected during the AM and PM peak hours on March 16 and 17 of year 2022. The data was collected between the hours of 7 AM to 9 AM and 4 PM to 6 PM for the Universe Blvd & Paseo del Norte Blvd intersection. For the Universe Blvd & School access road and Universe Blvd & Rainbow Blvd intersections, traffic volumes were collected from 6:45 AM to 8:45 AM, and 3:45 PM and 5:45 PM. Turning movement count data is included in the **Appendix C**.

Traffic volumes were analyzed to determine the AM and PM peak hour volumes (PHV) and peak hour factors (PHF). PHVs were calculated by taking the highest four-consecutive 15-minute total volumes for the intersection over their respective hour data collection period. Using this calculated peak hour, corresponding peak hour factors were calculated for each turning movement.

Peak hour factors are a traffic parameter used to describe the relationship between the peak 15-minute flow rate within the peak hour and the total peak hour volume. A high PHF (closer to 1) indicates that traffic is spread out relatively evenly throughout the peak hour. A low PHF (closer to 0) indicates that traffic is concentrated within the peak 15 minutes. **Table 3** shows the peak hour starting time, the peak hour turning movement volumes, and peak hour factors for the AM and PM periods. **Figure 2** in **Appendix B** shows the 2022 AM and PM turning movement volumes for the study intersections. Existing 2022 traffic volumes for Intersections 3 through 6 were determined by balancing traffic volumes between Intersections 2 and 7. Traffic volumes for Intersections 8 through 11 will be zero for all movements since the driveways to the Universe View development currently do not exist.

From **Table 3**, it is observed that AM peak hours mainly occurred at 6:45 AM or 7:00 AM. PHFs during the AM period range from 0.39 to 0.87. During the PM period, the PM peak hours mainly occurred at 4:30 PM or 4:45 PM. PHFs during the PM period range from 0.25 to 0.95.

Albuquerque, NM

October 25, 2022

Table 3 – Existing Peak Hour Movements

2022 Existing Peak Hour Movements*																		
Intersection		Peak Hour	Southbound				Westbound				Northbound				Eastbound			
			Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn
1	Universe Blvd & Paseo Del Norte Blvd	AM PH Start	7:00 AM	7:00 AM	7:00 AM	-	7:00 AM	7:00 AM	7:00 AM	-	7:00 AM	7:00 AM	7:00 AM	-	7:00 AM	7:00 AM	7:00 AM	-
		AM PHV	278	455	237	-	71	152	120	-	9	198	89	-	148	333	57	-
		AM PHF	0.869	0.784	0.884	-	0.612	0.691	0.732	-	0.450	0.786	0.586	-	0.841	0.816	0.792	-
		PM PH Start	4:45 PM	4:45 PM	4:45 PM	-	4:45 PM	4:45 PM	4:45 PM	-	4:45 PM	4:45 PM	4:45 PM	-	4:45 PM	4:45 PM	4:45 PM	-
		PM PHV	143	302	252	-	99	321	288	-	6	351	75	-	204	234	5	-
		PM PHF	0.794	0.812	0.955	-	0.798	0.912	0.947	-	0.750	0.852	0.815	-	0.729	0.813	0.625	-
2	Universe Blvd & School Access Road	AM PH Start	6:45 AM	6:45 AM	6:45 AM	-	-	-	-	-	6:45 AM	6:45 AM	6:45 AM	-	6:45 AM	6:45 AM	6:45 AM	-
		AM PHV	0	0	125	-	-	-	-	-	53	0	0	-	11	0	25	-
		AM PHF	0	0	0.473	-	-	-	-	-	0.491	0	0	-	0.393	0	0.446	-
		PM PH Start	4:30P M	4:30P M	4:30 PM	-	-	-	-	-	4:30P M	4:30 PM	4:30 PM	-	4:30 PM	4:30 PM	4:30 PM	-
		PM PHV	0	254	0	-	-	-	-	-	1	402	0	-	2	0	4	-
		PM PHF	0	0.934	0	-	-	-	-	-	0.250	0.922	0	-	0.500	0	0.333	-
7	Universe Blvd & Rainbow Blvd	AM PH Start	6:45 AM	6:45 AM	6:45 AM	-	6:45 AM	6:45 AM	6:45 AM	-	6:45 AM	6:45 AM	6:45 AM	-	6:45 AM	6:45 AM	6:45 AM	-
		AM PHV	524	27	15	-	10	338	165	-	53	40	47	-	2	406	14	-
		AM PHF	0.868	0.750	0.417	-	0.500	0.665	0.859	-	0.491	0.714	0.734	-	0.500	0.775	0.500	-
		PM PH Start	4:30 PM	4:30 PM	4:30 PM	-	4:30 PM	4:30 PM	4:30 PM	-	4:30 PM	4:30 PM	4:30 PM	-	4:30 PM	4:30 PM	4:30 PM	-
		PM PHV	214	45	2	-	58	337	383	-	34	47	10	-	2	221	10	-
		PM PHF	0.836	0.662	0.500	-	0.853	0.896	0.878	-	0.625	0.783	0.850	-	0.500	0.650	0.625	-

* The “-” indicates that there is no traffic for that movement

Background Growth

The study area population and corresponding traffic volumes will continue to grow in future years. To account for future traffic growth, existing traffic counts were projected using a growth rate (GR) and a growth factor (GF). The growth rate is expressed as a percentage of growth over a year. For this study, a 3.1% growth rate was used to forecast existing 2022 traffic to the build-out years 2023, 2025 and 2027, and Horizon year 2033. This growth rate was determined from a linear regression of the historical average weekday daily traffic (AWDT) data obtained from the Mid-Region Council of Governments' (MRCOG) website. The traffic data and linear regression worksheet are provided in **Appendix D**.

In this study, future traffic forecasts were determined using a growth factor, which is dependent on the growth rate. This growth factor is calculated using the equation $GF = (1+GR)^n$, where n is time in years. The calculated growth factors for 2023, 2025, 2027 and 2033 are 1.03, 1.10, 1.16, and 1.40, respectively. The existing 2022 AM and PM turning movement volumes were multiplied by these growth factors to determine the forecasted turning movements for 2023, 2025, 2027, and 2033. **Figures 3 through 6 in Appendix B** include the projected peak hour traffic volumes for the 2023, 2025, 2027, and 2033 AM and PM scenarios.

In addition to considering traffic growth expected to occur by population growth, the generated traffic for the four future developments in the vicinity of the project area were included in the analysis years based on their respective completion year. Therefore, only the generated traffic for the Sonata and Trails Track 1 developments was included in the 2023 analysis scenarios. All developments were included in the 2025, 2027, and 2033 analysis scenarios. **Figures 11 through 14 in Appendix B** include the No Build peak hour traffic volumes for the 2023, 2025, 2027, and 2033 AM and PM scenarios. These volumes were calculated by adding the generated traffic of the four future developments to the projected traffic volumes.

Trip Generation

The number of trips generated by the proposed developments were calculated using the *ITE Trip Generation Manual*, 11th Edition. The average trip rates for the peak hour of the adjacent street traffic were used for this study. These trips represent the highest peak hour vehicle trip ends generated by the development for a peak hour between 7 to 9 AM and a peak hour between 4 to 6 PM. The proposed Universe View subdivision developments were categorized into four different land uses. The developments were classified as follows:

- Phase I – 162 townhome units → Single-Family Attached Housing (Land Use 215)
- Phase II – 196 apartment units → Multifamily Housing (Low-Rise) (Land Use 220)
- Phase III –
 - 14,400 GSF pharmacy without drive-through → Pharmacy/Drugstore without Drive-Through Window (Land Use 880)
 - 14,726 GSF commercial building (Opening Year 2027) → Strip Retail Plaza (<40K) (Land Use 822)

Trip generation for these developments was calculated using the fitted curve equations for Land Use Codes 215, 220, 822 and 880. The generated trips for the AM and PM peak hour are presented in **Table 4**. Directional distribution for the generated trips were also determined using the *ITE Trip Generation Manual*. The number of vehicles entering and exiting the facility are also presented in **Table 4**.

Table 4 – Proposed Development Generated Trips

	Single-Family Attached Housing Land Use 215		Multifamily Housing (Low-Rise) Land Use 220		Strip Retail Plaza (<40K) Land Use 822		Pharmacy/Drugstore without Drive-Through Window (Land Use 880)	
	AM	PM	AM	PM	AM	PM	AM	PM
TOTAL GENERATED TRIPS	79	93	84	105	37	102	71	123
% Entering	30%	57%	24%	63%	60%	50%	65%	49%
Trips Entering	24	53	20	66	22	51	46	60
% Exiting	70%	43%	76%	37%	40%	50%	35%	51%
Trips Exiting	55	40	64	39	15	51	25	63

Internal capture and pass-by trips were also considered in this study and are described in the following sections.

Internal Capture

According to the *ITE Trip Generation Handbook 3rd Edition*, internal capture occurs at a site when two or more land uses have a possibility of interacting with each other, particularly where the trip can be made by walking. This can result in the total generation of trips being reduced. Internal capture was considered between the proposed apartments and the pharmacy and commercial developments since they will be directly connected through an internal street system and pedestrian walkways. The methodology outlined in Chapter 6 of the *ITE Trip Generation Handbook 3rd Edition* and the National Cooperative Highway Research Program (NCHRP) 684 Internal Trip Capture Estimation Tool were used to calculate internal capture for these developments. The spreadsheet tool considers the total trip generation of the proposed developments, vehicle occupancy, percent transit/non-motorized trips for entering and exiting traffic, and the distance between the developments. The total generated trips for the commercial development and pharmacy were considered retail trips in the spreadsheet calculations. An average weighted distance between the residential and commercial developments of 865-ft was calculated using the methodology presented in the handbook. Vehicle occupancy and percent transit/non-motorized trips were determined from Table B.2 of the *ITE Trip Generation Handbook*. To be conservative, smaller internal capture percentages than those calculated with the spreadsheet tool were considered for the outbound retail and inbound residential trips for the PM peak hour. The internal capture percentages used in the analysis are presented in **Table 5**. Additional information on the internal capture calculations is provided in **Appendix E**.

Table 5 – Internal Capture Percentages by Land Use

Peak Hour	Land Use	Entering Trips	Exiting Trips
AM Peak Hour	Retail	1%	0%
	Residential	0%	1%
PM Peak Hour	Retail	8%	20%
	Residential	35%	23%

Pass-By Trips

Pass-by trips are defined as intermediate stops on the way from an origin to a primary trip destination without a route diversion. Pass-by trips were considered in this study since the pharmacy and commercial developments are an attractive stop for commuters on Universe Blvd. Pass-by trips were only considered for the Universe Blvd & Rosa Parks Rd and Universe Blvd & Driveway 1 intersections. These two intersections are the access points for the pharmacy and commercial developments.

Using data from the *ITE Trip Generation Handbook 3rd Edition*, pass-by trip volume adjustments for the pharmacy and commercial developments were calculated. A 53% and 40% average pass-by trip adjustment was applied to the AM and PM peak hour generated trips of the pharmacy and commercial development, respectively. Pass-by trips were applied to the trips adjusted by internal capture; however, the number of entering and exiting trips to/from the driveways providing access to the pharmacy and commercial developments were not reduced by the pass-by trips.

Trip Adjustment Summary

Internal capture only affected the trips generated by the apartments, pharmacy, and commercial developments. Pass-by trips only affected trips generated by the pharmacy and commercial developments. The internal capture and pass-by trip adjustments for each development are presented in **Tables 6 through 8**.

Table 6 – Trip Adjustments for Proposed Apartments

Generated Trips	AM Peak Hour		PM Peak Hour	
	Original Generated Trips	Final Trips Adjusted for Internal Capture	Original Generated Trips	Final Trips Adjusted for Internal Capture
Total Trips	84	83	105	73
Entering	20	20	66	43
Exiting	64	63	39	30

Table 7 – Trip Adjustments for Commercial Development

Generated Trips	AM Peak Hour				PM Peak Hour			
	Original Generated Trips	Trips Adjusted for Internal Capture*	Pass-By Trips	Non-Pass-By Trips	Original Generated Trips	Trips Adjusted for Internal Capture	Pass-By Trips	Non-Pass-By Trips
Total Trips	37	37	15	22	102	88	35	53
Entering	22	22	9	13	51	47	19	28
Exiting	15	15	6	9	51	41	16	25

*Internal capture reductions were less than one trip, so they were not considered.

Table 8 – Trip Adjustments for Pharmacy

Generated Trips	AM Peak Hour				PM Peak Hour			
	Original Generated Trips	Trips Adjusted for Internal Capture	Pass-By Trips	Non-Pass-By Trips	Original Generated Trips	Trips Adjusted for Internal Capture	Pass-By Trips	Non-Pass-By Trips
Total Trips	71	70	37	33	123	105	56	49
Entering	46	45	24	21	60	55	29	26
Exiting	25	25	13	12	63	50	27	23

*Internal capture reductions were less than one trip, so they were not considered.

Trip Distribution

Traffic generated by the proposed developments was distributed and assigned to the study area intersections using the Gravity Model distributions. Population and employment data for years 2016 and 2040 was obtained for all Data Analysis Subzones (DASZ) within a 2-mile radius of the proposed Universe View development. The data was obtained from the 2040 Socioeconomic Forecasts by Subareas for the Mid-Region of New Mexico supplied by MRCOG. Population data was used to determine the pharmacy and commercial development trip distributions, while employment data was used to determine the townhome and apartment trip distributions. Population and employment data was interpolated for each of the implementation years (Phase I – 2023, Phase II-2025, and Phase III- 2027). The DASZ were then grouped based on the possible origins/destinations of the trips generated by the proposed Universe View development. The figure in **Appendix F** shows the DASZ, possible origins/destinations (A through G), and the percentage of trips of each DASZ in route to/from the destinations/origins (A through G). The trip distribution calculations are also included in **Appendix F**. The following assumptions were also considered for the trip distribution of each driveway:

1. The townhomes will be accessed through the Universe Blvd & Rosa Parks Rd intersection, and Driveways 2, 4 and 5.
2. The apartments will be accessed through the Universe Blvd & Perezoso Dr intersection, and Driveways 1, 2 and 6.

3. The pharmacy and commercial developments will be accessed through Universe Blvd & Rosa Parks Rd intersection, and Driveways 1 and 3.

Considering the Gravity Model distributions and the assumptions mentioned, the trip distributions were assumed and generated trips were calculated for the turning movements. **Figures 15 through 30 (Appendix B)** summarize the inbound and outbound trip distribution and number of generated trips for the study intersections for the AM and PM peak hours. To determine the 2023, 2025, 2027 and 2033 Build traffic volumes, the generated trips of each development were then added to the 2023, 2025, 2027, and 2033 No Build traffic volumes according to opening year of each development. **Figures 31 through 34 (Appendix B)** show the AM and PM peak hour turning movements for the Build scenarios.

TRAFFIC ANALYSIS

Methodology

To determine the traffic impact, the intersection level of service (LOS) and delay were evaluated for the study intersections.

Intersection LOS is a measure of driving conditions and vehicle delay. In addition, the LOS describes the quality of traffic operation on roadway facilities. The traffic capacity of intersections was evaluated to determine the LOS for the AM and PM peak hours. LOS range from A (best) to F (poorest). LOS A, B, and C indicate conditions where traffic can move freely. LOS D describes conditions where delay is noticeable. LOS E and F indicate conditions where traffic volumes are close to capacity or beyond capacity, experiencing significant delays, slow speeds or stop-and-go conditions, and queuing at signalized intersections. **Table 9** outlines the LOS definitions for signalized and unsignalized intersections as defined in the Highway Capacity Manual.

Table 9 – Level of Service Standards

LOS	Signalized Intersection Delay (sec)	Unsignalized Intersection Delay (sec)	Traffic Flow Characteristics
A	<10	0-10	Virtually free flow, completely unimpeded
B	>10-20	>10-15	Stable Flow with slight delays, less freedom to maneuver
C	>20-35	>15-25	Stable flow with delays, less freedom to maneuver
D	>35-55	>25-35	High density, but stable flow
E	>55-80	>35-50	Operating conditions at or near capacity, unstable flow
F	>80	>50	Forced flow, breakdown conditions

< indicates less than

> indicates greater than

Intersection delay is calculated by taking a weighted average of the total delays for each intersection lane group. Total delay includes queue delay and delay from stopping for signalized intersections. Intersection delay for unsignalized intersections does not include queue delay. Using this intersection delay, a LOS value is assigned to the intersection.

For this study, Synchro 11 software was used to analyze the traffic conditions for the following scenarios:

- 2022 Existing Conditions
- Phase I No Build Conditions (Year 2023 without Universe View subdivision)
- Phase I Build Conditions (Year 2023 with Universe View subdivision)
- Phase II No Build Conditions (Year 2025 without Universe View subdivision)
- Phase II Build Conditions (Year 2025 with Universe View subdivision)
- Phase III No Build Conditions (Year 2027 without Universe View subdivision)
- Phase III Build Conditions (Year 2027 with Universe View subdivision)
- Horizon Year No Build (Year 2033 without Universe View subdivision)
- Horizon Year No Build (Year 2033 with Universe View subdivision)

Traffic Analysis Results

The LOS and delay for all scenarios were calculated using the HCM 6th edition methodology included in Synchro Version 11. These parameters are summarized in **Tables 10** through **20** for both AM and PM peak hours. The volume to capacity (v/c) ratio and 95th percentile queue length are also included in the tables. Detailed results are included in the following appendices:

- **Appendix G** – Existing
- **Appendix H** – Phase I 2023, No Build
- **Appendix I** – Phase I 2023, Build
- **Appendix J** – Phase II 2025, No Build
- **Appendix K** – Phase II 2025, Build
- **Appendix L** – Phase III 2027, No Build
- **Appendix M** – Phase III 2027, Build
- **Appendix N** – Horizon 2033, No Build
- **Appendix O** – Horizon 2033, Build
- **Appendix P** – Mitigation 2033

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Table 10 summarizes the intersection LOS, approach LOS, 95th percentile queue length, and volume to capacity (v/c) ratio for all traffic movements of the signalized Intersection 1. The results are presented for the Existing, Phase I, Phase II, Phase III, and Horizon year AM and PM peak hours of the No Build and Build scenarios. Based on the analysis results, Intersection 1 is expected to fail in future years even without the proposed Universe View development. It can be noted that the proposed development will only increase the intersection delay by less than one second. Minimal impacts are also observed for the 95th percentile queue and v/c ratio. Therefore, no recommendations are made for Intersection 1. The City may consider optimizing the signal timing in the future to improve the intersection delay. **Table 10** also shows the approximate left-turn and right turn auxiliary lane storage lengths in the top row. It can be noted that the EB and SB left-turn and NB right-turn auxiliary lane storage lengths are exceeded in the No Build conditions. The City may consider increasing the storage length for these movements to accommodate the turning traffic.

Table 10 – Intersection 1 Traffic Analysis Results

INTERSECTION		PK HR	SCENARIO	INTERSECTION		APPROACH LOS				95 th PERCENTILE QUEUE											V/C RATIO												
				LOS	DELAY	EB	WB	NB	SB	EBL (70')	EBT	EBR (70')	WBL (160')	WBT	WBR	NBL (125')	NBT	NBR (35')	SBL (295')	SBT	SBR (295')	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
1	Universe Blvd & Paseo Del Norte Blvd	AM	Existing 2022	C	31.4	D	E	B	B	120	#377	0	61	259	-	9	169	0	169	359	41	0.67	0.86	0.15	0.53	0.91	-	0.06	0.35	0.21	0.53	0.61	0.28
			Phase 1-No Build 2023	D	42.5	E	E	B	B	136	#514	0	77	#330	-	10	175	37	175	375	42	0.75	1.05	0.15	0.71	1.01	-	0.08	0.37	0.37	0.56	0.66	0.31
			Phase 1- Build 2023	D	43.0	E	E	B	B	136	#514	1	83	#330	-	11	176	50	175	377	42	0.75	1.06	0.15	0.75	1.01	-	0.09	0.37	0.42	0.56	0.66	0.31
			Phase 2-No Build 2025	E	56.6	F	F	B	C	#179	#564	3	80	#408	-	10	192	41	195	416	51	0.81	1.13	0.16	0.73	0.12	-	0.09	0.41	0.39	0.64	0.71	0.34
			Phase 2- Build 2025	E	57.2	F	F	C	C	#178	#564	4	90	#408	-	11	196	67	195	419	51	0.81	1.14	0.17	0.82	0.12	-	0.11	0.42	0.49	0.64	0.72	0.34
			Phase 3-No Build 2027	E	64.7	F	F	C	C	#197	#600	6	83	#438	-	11	203	44	207	448	59	0.84	1.18	0.17	0.76	1.27	-	0.11	0.43	0.41	0.69	0.75	0.36
			Phase 3- Build 2027	E	65.4	F	F	C	C	#195	#600	12	94	#438	-	11	207	72	207	461	61	0.84	1.2	0.19	0.85	1.27	-	0.14	0.44	0.51	0.69	0.76	0.36
			Horizon - No Build 2033	F	101.4	F	F	C	C	#263	#741	17	95	#551	-	11	246	58	#324	#615	102	0.94	1.41	0.21	0.86	1.54	-	0.21	0.53	0.46	0.91	0.91	0.43
			Horizon - Build 2033	F	101.5	F	F	C	C	#263	#741	22	107	#551	-	13	250	88	#329	#657	105	0.94	1.41	0.23	0.97	1.54	-	0.24	0.54	0.57	0.91	0.92	0.43
		PM	Existing 2022	D	47.1	E	E	D	C	#235	201	0	67	#692	-	11	#369	29	113	278	56	1.10	0.40	0.01	0.25	1.01	-	0.02	0.78	0.18	0.64	0.51	0.34
			Phase 1-No Build 2023	E	61.6	E	F	D	C	#254	250	0	105	#855	-	13	#404	61	116	290	58	1.16	0.51	0.02	0.45	1.16	-	0.03	0.81	0.27	0.69	0.53	0.36
			Phase 1- Build 2023	E	61.3	E	F	D	C	#254	250	0	116	#855	-	14	#406	73	116	293	58	1.16	0.51	0.02	0.5	1.16	-	0.04	0.81	0.31	0.69	0.53	0.36
			Phase 2-No Build 2025	F	95.4	F	F	D	C	#313	629	0	110	#1070	-	13	#462	65	#181	319	61	1.32	0.55	0.02	0.49	1.37	-	0.04	0.91	0.29	0.88	0.58	0.39
			Phase 2- Build 2025	F	94.2	F	F	D	C	#311	269	0	130	#1070	-	14	#467	87	#181	324	61	1.32	0.55	0.02	0.58	1.37	-	0.05	0.91	0.35	0.88	0.61	0.4
			Phase 3-No Build 2027	F	106.8	F	F	E	C	#335	282	0	114	#1131	-	13	#498	69	#195	338	62	1.39	0.57	0.02	0.53	1.44	62	0.04	0.96	0.3	0.91	0.61	0.41
			Phase 3- Build 2027	F	105.6	F	F	E	C	#334	282	0	136	#1131	-	21	#521	93	#195	360	63	1.39	0.58	0.04	0.63	1.44	63	0.09	0.99	0.37	0.91	0.66	0.42
			Horizon - No Build 2033	F	157.4	F	F	F	D	#426	340	0	129	#1375	-	14	#648	84	#262	425	88	1.65	0.68	0.02	0.69	1.68	-	0.07	1.16	0.35	1.08	0.76	0.48
			Horizon - Build 2033	F	156.5	F	F	F	D	#424	340	0	152	#1375	-	22	#669	109	#262	#482	100	1.65	0.69	0.04	0.81	1.68	-	0.14	1.19	0.41	1.08	0.82	0.5

- Indicates that the volume for the 95th percentile cycle exceeds capacity.

Table 11 summarizes the intersection LOS, approach LOS, 95th percentile queue length, and volume to capacity (v/c) ratio for all traffic movements of the unsignalized Intersection 2. The results are presented for the Existing, Phase I, Phase II, Phase III, and Horizon year AM and PM peak hours of the No Build and Build scenarios. The three-way intersection is stop controlled in the EB direction, and free flow in the NB and SB directions; therefore, Synchro only evaluates the EB approach and NB left-turn movement. The LOS E for the Horizon 2033 AM peak hour scenario is based on a single stage left turn movement. Since the proposed cross section of Universe Blvd will include a median, a 2-staged left turn movement will be allowed for the EB approach. This will improve the LOS to a C in the AM peak. Therefore, no recommendations are made for Intersection 2. The Synchro results for the 2- staged left turn analysis are provided in **Appendix P**.

Table 11 – Intersection 2 Traffic Analysis Results

INTERSECTION	PK HR	SCENARIO	INTERSECTION		APPROACH LOS				95 th PERCENTILE QUEUE												V/C RATIO											
			LOS	DELAY	EB	WB	NB	SB	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2	Universe & School Driveway	AM	Existing 2022	-	-	C	-	-	-	10	-	10	-	-	-	12.5	-	-	-	-	0.117	-	0.109	-	-	-	0.138	-	-	-	-	-
			Phase 1-No Build 2023	-	-	C	-	-	-	12.5	-	10	-	-	-	12.5	-	-	-	-	0.141	-	0.12	-	-	-	0.15	-	-	-	-	-
			Phase 1- Build 2023	-	-	C	-	-	-	12.5	-	10	-	-	-	15	-	-	-	-	0.154	-	0.127	-	-	-	0.157	-	-	-	-	-
			Phase 2-No Build 2025	-	-	C	-	-	-	15	-	12.5	-	-	-	15	-	-	-	-	0.174	-	0.137	-	-	-	0.17	-	-	-	-	-
			Phase 2- Build 2025	-	-	C	-	-	-	20	-	12.5	-	-	-	17.5	-	-	-	-	0.208	-	0.152	-	-	-	0.188	-	-	-	-	-
			Phase 3-No Build 2027	-	-	C	-	-	-	17.5	-	12.5	-	-	-	17.5	-	-	-	-	0.193	-	0.149	-	-	-	0.186	-	-	-	-	-
			Phase 3- Build 2027	-	-	C	-	-	-	22.5	-	15	-	-	-	20	-	-	-	-	0.24	-	0.179	-	-	-	0.212	-	-	-	-	-
			Horizon - No Build 2033	-	-	D	-	-	-	37.5	-	20	-	-	-	27.5	-	-	-	-	0.363	-	0.217	-	-	-	0.269	-	-	-	-	-
			Horizon - Build 2033	-	-	E	-	-	-	47.5	-	25	-	-	-	32.5	-	-	-	-	0.461	-	0.256	-	-	-	0.302	-	-	-	-	-
		PM	Existing 2022	-	-	B	-	-	-	0	-	0	-	-	-	0	-	-	-	-	0.011	-	0.016	-	-	-	0.003	-	-	-	-	-
			Phase 1-No Build 2023	-	-	B	-	-	-	2.5	-	2.5	-	-	-	0	-	-	-	-	0.018	-	0.02	-	-	-	0.006	-	-	-	-	-
			Phase 1- Build 2023	-	-	B	-	-	-	2.5	-	2.5	-	-	-	0	-	-	-	-	0.019	-	0.03	-	-	-	0.013	-	-	-	-	-
			Phase 2-No Build 2025	-	-	B	-	-	-	2.5	-	2.5	-	-	-	0	-	-	-	-	0.019	-	0.021	-	-	-	0.006	-	-	-	-	-
			Phase 2- Build 2025	-	-	B	-	-	-	2.5	-	2.5	-	-	-	2.5	-	-	-	-	0.023	-	0.041	-	-	-	0.017	-	-	-	-	-
			Phase 3-No Build 2027	-	-	B	-	-	-	2.5	-	2.5	-	-	-	0	-	-	-	-	0.02	-	0.022	-	-	-	0.007	-	-	-	-	-
			Phase 3- Build 2027	-	-	B	-	-	-	5	-	2.5	-	-	-	2.5	-	-	-	-	0.028	-	0.053	-	-	-	0.035	-	-	-	-	-
			Horizon - No Build 2033	-	-	B	-	-	-	2.5	-	2.5	-	-	-	0	-	-	-	-	0.026	-	0.028	-	-	-	0.007	-	-	-	-	-
			Horizon - Build 2033	-	-	B	-	-	-	2.5	-	5	-	-	-	2.5	-	-	-	-	0.036	-	0.063	-	-	-	0.037	-	-	-	-	-

Table 12 through 15 summarize the intersection LOS, approach LOS, 95th percentile queue length, and volume to capacity (v/c) ratio for all traffic movements of unsignalized Intersections 3 through 6. The results are presented for the Existing, Phase I, Phase II, Phase III, and Horizon year AM and PM peak hours of the No Build and Build scenarios. The three-way intersections are stop controlled in the WB direction, and free flow in the NB and SB directions; therefore, Synchro only evaluates the WB approach and SB left-turn movement. It can be noted that all scenarios evaluated meet the minimum acceptable LOS standard (LOS D or better); therefore, no recommendations are made for Intersections 3 through 6.

Table 12 – Intersection 3 Traffic Analysis Results

INTERSECTION	PK HR	SCENARIO	INTERSECTION		APPROACH LOS				95 th PERCENTILE QUEUE												V/C RATIO											
			LOS	DELAY	EB	WB	NB	SB	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
3	Universe Blvd & Rosa Parks Rd	AM	Existing 2022	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 1-No Build 2023	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 1- Build 2023	-	-	-	B	-	-	-	-	5	-	-	-	-	-	0	-	-	-	-	-	0.056	-	-	-	-	-	0.009	-	-
			Phase 2-No Build 2025	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 2- Build 2025	-	-	-	B	-	-	-	-	5	-	-	-	-	-	0	-	-	-	-	-	0.062	-	-	-	-	-	0.01	-	-
			Phase 3-No Build 2027	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 3- Build 2027	-	-	-	B	-	-	-	-	10	-	-	-	-	-	2.5	-	-	-	-	-	0.128	-	-	-	-	-	0.025	-	-
			Future - No Build 2033	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Future - Build 2033	-	-	-	C	-	-	-	-	15	-	-	-	-	-	2.5	-	-	-	-	-	0.159	-	-	-	-	-	0.026	-	-
		PM	Existing 2022	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 1-No Build 2023	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 1- Build 2023	-	-	-	B	-	-	-	-	2.5	-	-	-	-	-	2.5	-	-	-	-	-	0.047	-	-	-	-	-	0.023	-	-
			Phase 2-No Build 2025	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 2- Build 2025	-	-	-	B	-	-	-	-	5	-	-	-	-	-	2.5	-	-	-	-	-	0.052	-	-	-	-	-	0.024	-	-
			Phase 3-No Build 2027	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 3- Build 2027	-	-	-	C	-	-	-	-	20	-	-	-	-	-	5	-	-	-	-	-	0.225	-	-	-	-	-	0.057	-	-
			Future - No Build 2033	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Future - Build 2033	-	-	-	C	-	-	-	-	27.5	-	-	-	-	-	5	-	-	-	-	-	0.279	-	-	-	-	-	0.063	-	-

Table 13 – Intersection 4 Traffic Analysis Results

INTERSECTION		PK HR	SCENARIO	INTERSECTION		APPROACH LOS				95 th PERCENTILE QUEUE												V/C RATIO											
				LOS	DELAY	EB	WB	NB	SB	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
4	Universe Blvd & Driveway 1	AM	Existing 2022	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 1-No Build 2023	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 1- Build 2023	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 2-No Build 2025	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 2- Build 2025	-	-	-	B	-	-	-	-	5	-	-	-	-	-	0	-	-	-	-	-	0.057	-	-	-	-	-	0.003	-	-	
			Phase 3-No Build 2027	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 3- Build 2027	-	-	-	C	-	-	-	-	10	-	-	-	-	-	2.5	-	-	-	-	-	0.128	-	-	-	-	-	0.019	-	-	
			Horizon - No Build 2033	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-		
			Horizon - Build 2033	-	-	-	C	-	-	-	-	15	-	-	-	-	-	2.5	-	-	-	-	-	0.161	-	-	-	-	-	0.019	-	-	
		PM	Existing 2022	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 1-No Build 2023	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 1- Build 2023	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 2-No Build 2025	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 2- Build 2025	-	-	-	B	-	-	-	-	2.5	-	-	-	-	-	0	-	-	-	-	-	0.032	-	-	-	-	-	0.01	-	-	
			Phase 3-No Build 2027	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 3- Build 2027	-	-	-	C	-	-	-	-	25.7	-	-	-	-	-	2.5	-	-	-	-	-	0.191	-	-	-	-	-	0.042	-	-	
			Horizon - No Build 2033	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Horizon - Build 2033	-	-	-	C	-	-	-	-	22.5	-	-	-	-	-	2.5	-	-	-	-	-	0.237	-	-	-	-	-	0.047	-	-	

Table 14 – Intersection 5 Traffic Analysis Results

NTERSECTION		PK HR	SCENARIO	INTERSECTION		APPROACH LOS				95 th PERCENTILE QUEUE												V/C RATIO											
				LOS	DELAY	EB	WB	NB	SB	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
5	Universe Blvd & Driveway 2	AM	Existing 2022	-	-	-	A	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 1-No Build 2023	-	-	-	A	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 1- Build 2023	-	-	-	C	-	-	-	-	-	5	-	-	-	-	-	0	-	-	-	-	-	0.073	-	-	-	-	-	0.002	-	-
			Phase 2-No Build 2025	-	-	-	A	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 2- Build 2025	-	-	-	C	-	-	-	-	-	15	-	-	-	-	-	0	-	-	-	-	-	0.162	-	-	-	-	-	0.007	-	-
			Phase 3-No Build 2027	-	-	-	A	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 3- Build 2027	-	-	-	C	-	-	-	-	-	15	-	-	-	-	-	0	-	-	-	-	-	0.176	-	-	-	-	-	0.007	-	-
			Horizon - No Build 2033	-	-	-	A	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Horizon - Build 2033	-	-	-	C	-	-	-	-	-	20	-	-	-	-	-	0	-	-	-	-	-	0.225	-	-	-	-	-	0.007	-	-
		PM	Existing 2022	-	-	-	A	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 1-No Build 2023	-	-	-	A	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 1- Build 2023	-	-	-	C	-	-	-	-	-	5	-	-	-	-	-	0	-	-	-	-	-	0.055	-	-	-	-	-	0.008	-	-
			Phase 2-No Build 2025	-	-	-	A	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 2- Build 2025	-	-	-	C	-	-	-	-	-	7.5	-	-	-	-	-	2.5	-	-	-	-	-	0.097	-	-	-	-	-	0.02	-	-
			Phase 3-No Build 2027	-	-	-	A	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 3- Build 2027	-	-	-	C	-	-	-	-	-	10	-	-	-	-	-	2.5	-	-	-	-	-	0.116	-	-	-	-	-	0.022	-	-
			Horizon - No Build 2033	-	-	-	A	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Horizon - Build 2033	-	-	-	C	-	-	-	-	-	12.5	-	-	-	-	-	2.5	-	-	-	-	-	0.145	-	-	-	-	-	0.024	-	-

Table 15 – Intersection 6 Traffic Analysis Results

INTERSECTION	PK HR	SCENARIO	INTERSECTION		APPROACH LOS				95 th PERCENTILE QUEUE												V/C RATIO											
			LOS	DELAY	EB	WB	NB	SB	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
6	Universe Blvd & Perezoso Rd	AM	Existing 2022	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 1-No Build 2023	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 1- Build 2023	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 2-No Build 2025	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 2- Build 2025	-	-	-	B	-	-	-	-	2.5	-	-	-	-	-	0	-	-	-	-	-	0.024	-	-	-	-	-	0.002	-	-
			Phase 3-No Build 2027	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 3- Build 2027	-	-	-	B	-	-	-	-	2.5	-	-	-	-	-	0	-	-	-	-	-	0.026	-	-	-	-	-	0.002	-	-
			Horizon - No Build 2033	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Horizon - Build 2033	-	-	-	C	-	-	-	-	2.5	-	-	-	-	-	0	-	-	-	-	-	0.033	-	-	-	-	-	0.002	-	-
		PM	Existing 2022	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 1-No Build 2023	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 1- Build 2023	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 2-No Build 2025	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 2- Build 2025	-	-	-	B	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0.01	-	-	-	-	-	0.004	-	-
			Phase 3-No Build 2027	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 3- Build 2027	-	-	-	B	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0.011	-	-	-	-	-	0.005	-	-
			Horizon - No Build 2033	-	-	-	A	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Horizon - Build 2033	-	-	-	C	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0.014	-	-	-	-	-	0.005	-	-

Table 16 summarizes the intersection LOS, approach LOS, 95th percentile queue length, and volume to capacity (v/c) ratio for all traffic movements of the signalized Intersection 7. The results are presented for the Existing, Phase I, Phase II, Phase III, and Horizon year AM and PM peak hours of the No Build and Build scenarios. Based on the analysis results, Intersection 7 will only exceed the minimum LOS D standard in the Horizon 2033 AM peak hour for the No Build and Build scenarios. The 2033 Build scenario will increase the delay by almost 20 seconds when compared to the 2033 No Build conditions. To mitigate these impacts, a WB right-turn auxiliary lane with a minimum 200-ft storage length and signal optimization are recommended after Phase III is completed. However, to meet the criteria of the City of Albuquerque Development Process Manual, a 240-ft storage length with a 150-ft transition length is recommended. This will improve the LOS to a D and maintain a LOS C in the AM and PM peak hour, respectively, as can be noted in **Table 16** under the 2033 Mitigation scenario. However, before any improvements are implemented, it is recommended that the intersection be evaluated again after the completion of Phase III to verify that the improvements are required. If Rosa Parks Rd is extended to Unser Blvd by the end of this phase, the amount of traffic accessing the development through Universe Blvd will be reduced given that traffic would be able to access the development through Rosa Parks Rd and Unser Blvd. This would decrease the development’s generated traffic at Intersection 7 and minimize the traffic impacts; therefore, only signal optimization (without the additional WB right-turn auxiliary lane) would be recommended. As can be noted in **Table 16**, Intersection 7 is expected to maintain the same LOS and experience a minimal increase in delay in the Build 2033 conditions with the Rosa Parks Rd extension when compared to the No Build 2033 conditions. The extension of Rosa Parks Rd by the City or another development may be possible by 2027 given that the Rosa Parks Rd extension between Universe Blvd and Unser Blvd has been included in the MRMPO Long Range Roadway System Corridors (LRRS) Connections 2040 MTP projects and the project site is in an area that is rapidly growing and being developed. Based on the results, it can also be noted that the Existing 2022 queue exceeds the SB left-turn storage. The City may consider modifying the lane configuration for the SB movement to accommodate the high SB left-turn volumes.

Table 16 – Intersection 7 Traffic Analysis Results

Intersection		PK HR	Scenario	Intersec- tion		Approach LOS				95 th Percentile Queue											V/C Ratio												
				LOS	Delay	EB	WB	NB	SB	EBL 120'	EBT	EBR	WBL 130'	WBT	WBR	NBL 80'	NBT	NBR	SBL 100'	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
7	Universe Blvd & Rainbow Blvd	A M	Existing 2022	C	28	D	D	B	B	4	168	-	12	162	-	33	63	-	374	34	-	0.02	0.64	-	0.1	0.75	-	0.2	0.22	-	0.68	0.08	-
			Phase 1-No Build 2023	C	29	D	C	B	B	5	186	-	12	172	-	35	67	-	#522	36	-	0.04	0.67	-	0.11	0.75	-	0.26	0.31	-	0.73	0.09	-
			Phase 1- Build 2023	C	29.3	D	C	C	C	6	185	-	12	173	-	35	68	-	#623	38	-	0.05	0.67	-	0.11	0.76	-	0.28	0.35	-	0.76	0.09	-
			Phase 2-No Build 2025	C	30	D	C	C	C	5	192	-	12	178	-	39	71	-	#677	41	-	0.04	0.67	-	0.11	0.76	-	0.3	0.37	-	0.81	0.1	-
			Phase 2- Build 2025	C	31.4	C	C	C	C	7	188	-	11	178	-	40	75	-	#761	43	-	0.06	0.66	-	0.11	0.77	-	0.3	0.38	-	0.88	0.11	-
			Phase 3-No Build 2027	C	31.7	C	C	C	C	5	196	-	12	184	-	42	78	-	#753	44	-	0.04	0.68	-	0.12	0.77	-	0.32	0.4	-	0.88	0.11	-
			Phase 3- Build 2027	D	36.4	C	C	C	D	8	193	-	12	187	-	43	83	-	#841	48	-	0.09	0.64	-	0.11	0.8	-	0.32	0.42	-	0.98	0.13	-
			Horizon - No Build 2033	E	59.4	C	C	C	F	5	236	-	13	226	-	50	95	-	#863	53	-	0.04	0.73	-	0.14	0.81	-	0.37	0.47	-	1.22	0.15	-
			Horizon - Build 2033	E	78.2	C	C	C	F	8	236	-	13	233	-	50	101	-	#940	57	-	0.09	0.68	-	0.13	0.82	-	0.37	0.5	-	1.37	0.17	-
			2033 Mitigation	D	53.9	E	D	D	E	14	405	-	24	321	136	49	147	-	#1009	50	-	0.12	0.90		0.25	0.83	0.51	0.39	0.45	-	1.03	0.12	-
		Horizon - Build 2033 w/ Rosa Parks Extension	E	60.4	D	E	D	E	14	403	-	24	410	-	49	146	-	#936	49	-	0.13	0.79	-	0.21	0.95	-	0.38	0.44	-	1.07	0.12	-	
		P M	Existing 2022	C	21.4	C	C	B	B	4	85	-	45	193	-	10	55	-	116	37	-	0.02	0.51	-	0.22	0.73	-	0.02	0.13	-	0.33	0.07	-
			Phase 1-No Build 2023	C	22.2	C	C	B	B	5	98	-	47	245	-	10	59	-	128	38	-	0.04	0.5	-	0.22	0.76	-	0.03	0.15	-	0.38	0.08	-
			Phase 1- Build 2023	C	21.8	C	C	B	B	6	98	-	47	251	-	10	62	-	136	39	-	0.05	0.48	-	0.21	0.75	-	0.03	0.17	-	0.41	0.09	-
			Phase 2-No Build 2025	C	21.1	C	C	B	B	5	104	-	48	269	-	10	66	-	136	40	-	0.04	0.44	-	0.21	0.72	-	0.03	0.19	-	0.44	0.1	-
			Phase 2- Build 2025	C	21.4	C	C	B	B	7	104	-	48	269	-	10	71	-	151	42	-	0.06	0.45	-	0.21	0.73	-	0.03	0.21	-	0.48	0.1	-
			Phase 3-No Build 2027	C	21.1	C	C	B	B	5	110	-	51	#322	-	11	70	-	144	43	-	0.03	0.44	-	0.22	0.73	-	0.04	0.22	-	0.48	0.11	-
			Phase 3- Build 2027	C	21.7	C	C	C	B	8	110	-	51	#355	-	11	77	-	167	45	-	0.07	0.44	-	0.22	0.77	-	0.04	0.25	-	0.54	0.12	-
			Horizon - No Build 2033	C	25.4	C	C	C	C	5	131	-	59	#448	-	12	86	-	174	49	-	0.04	0.53	-	0.29	0.87	-	0.05	0.29	-	0.57	0.13	-
			Horizon - Build 2033	C	27.1	C	C	C	C	8	131	-	59	#483	-	12	93	-	199	52	-	0.07	0.53	-	0.29	0.91	-	0.05	0.32	-	0.64	0.14	-
			2033 Mitigation	C	21.4	C	B	C	B	8	131	-	59	#345	64	12	93	-	199	52	-	0.06	0.53	-	0.29	0.70	0.50	0.05	0.32	-	0.64	0.14	-
			Horizon - Build 2033 with Rosa Parks Extension	C	23.8	C	C	B	C	7	121	-	58	#433	-	13	74	-	195	56	-	0.06	0.48	-	0.29	0.84	-	0.04	0.24	-	0.67	0.15	-

Table 17 through **20** summarize the intersection LOS, approach LOS, 95th percentile queue length, and volume to capacity (v/c) ratio for all traffic movements of unsignalized Intersections 8 through 11. The results are presented for the Existing, Phase I, Phase II, Phase III, and Horizon year AM and PM peak hours of the No Build and Build scenarios. The three-way intersections are stop controlled in the NB or SB direction, and free flow in the EB and WB directions; therefore, Synchro only evaluates the NB approach and WB left-turn movement, or SB approach and EB left-turn movement. It can be noted that all scenarios evaluated meet the minimum acceptable LOS standard (LOS D or better); therefore, no recommendations are made for Intersections 8 through 11.

Table 17 – Intersection 8 Traffic Analysis Results

INTERSECTION		PK HR	SCENARIO	INTERSECTION		APPROACH LOS				95 th PERCENTILE QUEUE												V/C RATIO											
				LOS	DELAY	EB	WB	NB	SB	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
8	Rosa Parks Rd & Driveway 3	AM	Existing 2022	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 1-No Build 2023	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 1- Build 2023	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 2-No Build 2025	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 2- Build 2025	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 3-No Build 2027	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 3- Build 2027	-	-	-	-	A	-	-	-	-	0	-	-	2.5	-	-	-	-	-	-	-	-	-	-	-	0.03	-	-	-	-	-
			Horizon - No Build 2033	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Horizon - Build 2033	-	-	-	-	A	-	-	-	-	0	-	-	2.5	-	-	-	-	-	-	-	-	-	-	-	0.03	-	-	-	-	-
		PM	Existing 2022	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 1-No Build 2023	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 1- Build 2023	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 2-No Build 2025	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 2- Build 2025	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 3-No Build 2027	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 3- Build 2027	-	-	-	-	A	-	-	-	-	0	-	-	5	-	-	-	-	-	-	-	-	-	0.015	-	-	0.058	-	-	-	-
			Horizon - No Build 2033	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Horizon - Build 2033	-	-	-	-	A	-	-	-	-	0	-	-	5	-	-	-	-	-	-	-	-	-	0.015	-	-	0.058	-	-	-	-

Table 18 – Intersection 9 Traffic Analysis Results

ERSECTION		PK HR	SCENARIO	INTERSECTION		APPROACH LOS				95 th PERCENTILE QUEUE												V/C RATIO											
				LOS	DELAY	EB	WB	NB	SB	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
9	Rosa Parks Rd & Driveway 4	AM	Existing 2022	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 1-No Build 2023	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 1- Build 2023	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 2-No Build 2025	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 2- Build 2025	-	-	-	-	A	-	-	-	-	0	-	-	2.5	-	-	-	-	-	-	-	-	-	-	-	0.017	-	-	-	-	-
			Phase 3-No Build 2027	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 3- Build 2027	-	-	-	-	A	-	-	-	-	0	-	-	2.5	-	-	-	-	-	-	-	-	-	-	-	0.017	-	-	-	-	-
			Horizon - No Build 2033	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Horizon - Build 2033	-	-	-	-	A	-	-	-	-	0	-	-	2.5	-	-	-	-	-	-	-	-	-	-	-	0.017	-	-	-	-	-
		PM	Existing 2022	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 1-No Build 2023	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 1- Build 2023	-	-	-	-	A	-	-	-	-	0	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0.012	-	-	-	-	-
			Phase 2-No Build 2025	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 2- Build 2025	-	-	-	-	A	-	-	-	-	0	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0.012	-	-	-	-	-
			Phase 3-No Build 2027	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Phase 3- Build 2027	-	-	-	-	A	-	-	-	-	0	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0.012	-	-	-	-	-
			Horizon - No Build 2033	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Horizon - Build 2033	-	-	-	-	A	-	-	-	-	0	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0.012	-	-	-	-	-

Table 19 – Intersection 10 Traffic Analysis Results

INTERSECTION		PK HR	SCENARIO	INTERSECTION		APPROACH LOS				95 th PERCENTILE QUEUE												V/C RATIO											
				LOS	DELAY	EB	WB	NB	SB	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
10	Rosa Parks Rd & Driveway 5	AM	Existing 2022	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 1-No Build 2023	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 1- Build 2023	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 2-No Build 2025	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 2- Build 2025	-	-	-	-	A	-	-	-	-	0	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0.016	-	-	-	-	-
			Phase 3-No Build 2027	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 3- Build 2027	-	-	-	-	A	-	-	-	-	0	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0.016	-	-	-	-	-
			Horizon - No Build 2033	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Horizon - Build 2033	-	-	-	-	A	-	-	-	-	0	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0.016	-	-	-	-	-
		PM	Existing 2022	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 1-No Build 2023	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 1- Build 2023	-	-	-	-	A	-	-	-	-	0	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0.011	-	-	-	-	-
			Phase 2-No Build 2025	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 2- Build 2025	-	-	-	-	A	-	-	-	-	0	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0.011	-	-	-	-	-
			Phase 3-No Build 2027	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 3- Build 2027	-	-	-	-	A	-	-	-	-	0	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0.011	-	-	-	-	-
			Horizon - No Build 2033	-	-	-	-	A	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Horizon - Build 2033	-	-	-	-	A	-	-	-	-	0	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0.011	-	-	-	-	-

Table 20 – Intersection 11 Traffic Analysis Results

INTERSECTION		PK HR	SCENARIO	INTERSECTION		APPROACH LOS				95 th PERCENTILE QUEUE												V/C RATIO											
				LOS	DELAY	EB	WB	NB	SB	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
11	Perezoso Dr & Driveway 6	AM	Existing 2022	-	-	-	-	-	A	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 1-No Build 2023	-	-	-	-	-	A	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 1- Build 2023	-	-	-	-	-	A	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 2-No Build 2025	-	-	-	-	-	A	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 2- Build 2025	-	-	-	-	-	A	0	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0.009	-	-
			Phase 3-No Build 2027	-	-	-	-	-	A	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 3- Build 2027	-	-	-	-	-	A	0	-	-	-	-	-	-	-	-	0	-	-	0.002	-	-	-	-	-	-	-	-	0.009	-	-
			Horizon - No Build 2033	-	-	-	-	-	A	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Horizon - Build 2033	-	-	-	-	-	A	0	-	-	-	-	-	-	-	-	0	-	-	0.002	-	-	-	-	-	-	-	-	0.009	-	-
		PM	Existing 2022	-	-	-	-	-	A	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 1-No Build 2023	-	-	-	-	-	A	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 1- Build 2023	-	-	-	-	-	A	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 2-No Build 2025	-	-	-	-	-	A	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 2- Build 2025	-	-	-	-	-	A	0	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0.004	-	-
			Phase 3-No Build 2027	-	-	-	-	-	A	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Phase 3- Build 2027	-	-	-	-	-	A	0	-	-	-	-	-	-	-	-	0	-	-	0.005	-	-	-	-	-	-	-	-	0.004	-	-
			Horizon - No Build 2033	-	-	-	-	-	A	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Horizon - Build 2033	-	-	-	-	-	A	0	-	-	-	-	-	-	-	-	-	-	-	0.005	-	-	-	-	-	-	-	-	0.004	-	-

INTERSECTION SIGHT DISTANCE

The ability of drivers to safely maneuver turns from the proposed development to Universe Blvd was analyzed. Areas near the intersection should be clear of obstructions that might block a driver's view of potentially conflicting vehicles. These areas are known as clear sight triangles. The sight triangle leg dimensions depend on the design speeds of the intersecting roadways and the type of traffic control used at the intersection.

The sight distance was evaluated for the minor roads intersecting Universe Blvd (Rosa Parks Rd, Driveway 1, Driveway 2, and Perezoso Dr). AASHTO's *A Policy on Geometric Design of Highways and Streets, 2018 7th Edition* methodology was followed in the sight distance evaluation. The sight distance is affected by the type of stop control and speed along the major roadway (Universe Blvd). For the intersections evaluated, the control type can be classified as a Case B – "Intersection with stop control on the minor road". The existing speed along the major road, Universe Blvd is 35 miles per hour (mph). In the case for right turns from a minor road to a major road, the departure sight triangle distance for traffic approaching from the left is 490 ft for trucks and passenger cars. In the case for left turns from a minor road to a major road, the departure sight triangle distance for traffic approaching from the right is 440 ft. **Figure 35** shows the sight distance triangles for right turns at all four intersections. **Figure 36** shows the sight distance triangles for left turns at all four intersections. The sight triangles are also presented in **Appendix Q**. **Figure 37** shows the street view from the proposed intersections for vehicles turning left and right. Currently, from the point of departure at the evaluated intersections, there are no obstructions that might block a driver's view of approaching vehicles. It is recommended that a driver's view be considered when making improvements to Universe Blvd. No obstructions should be placed within the driver's sight distance.

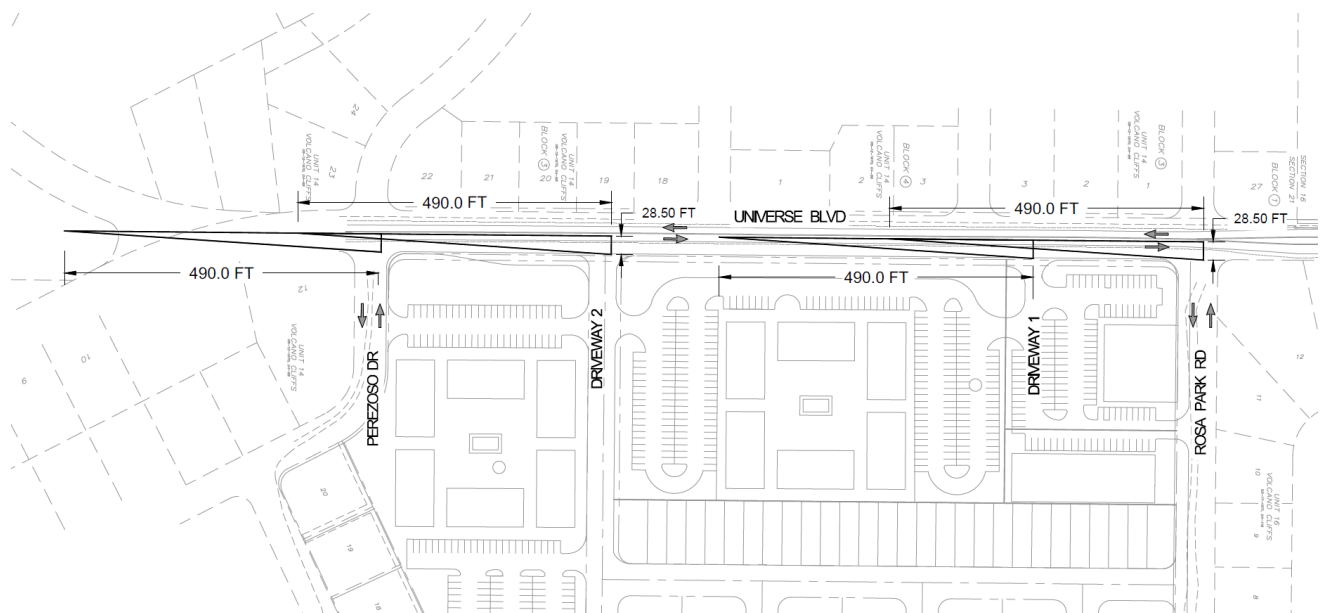


Figure 35 – Sight Distance Triangles for Right Turns at Proposed Intersections

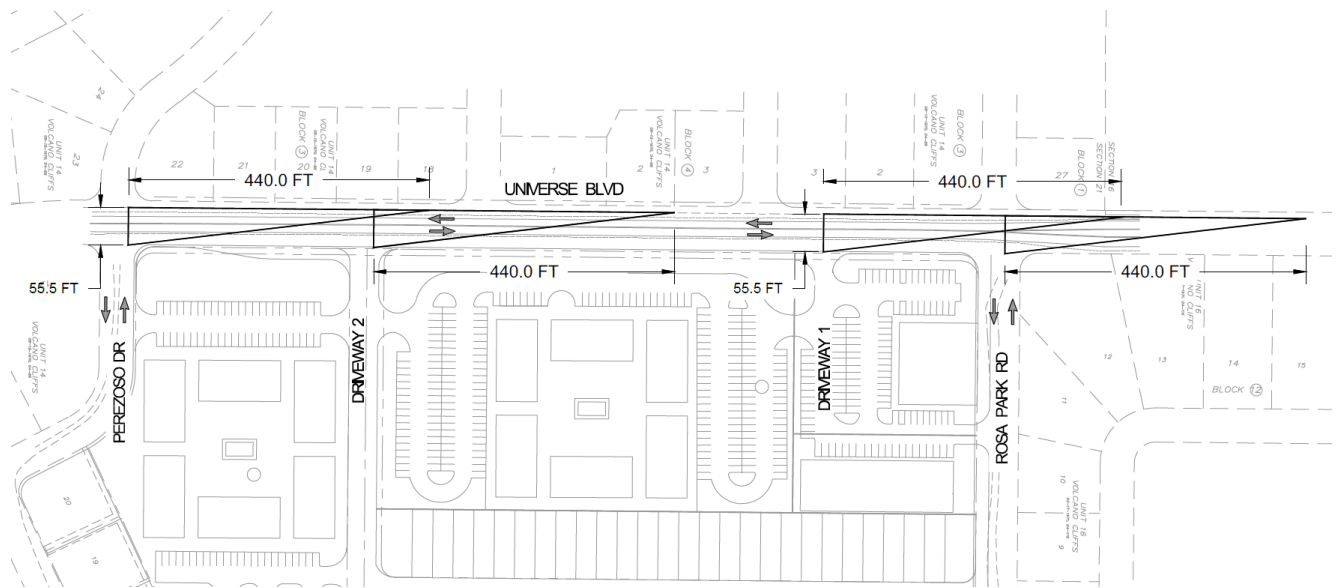


Figure 36 – Sight Distance Triangles for Left Turns at Proposed Intersections



Rosa Parks Rd North View (Left Turn View)



Rosa Parks Rd South View (Right Turn View)



Driveway 1 North View (Left Turn View)



Driveway 1 South View (Right Turn View)



Driveway 2 North View (Left Turn View)



Driveway 2 South View (Right Turn View)



Perezoso Dr North View (Left Turn View)



Perezoso Dr South View (Right Turn View)

Figure 37 –Proposed Intersection Street View Obstruction Analysis

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Based on the results of the traffic analysis, it was concluded that the development will not adversely impact the intersections in the Phase I (2023), Phase II (2025), and Phase III (2027) scenarios. All intersections perform at a LOS D or better in 2027 for all scenarios, except for:

- Intersection 1 (Universe Blvd & Paseo del Norte Blvd) – The intersection is expected to deteriorate to a LOS E and F during the 2025 AM and PM peak hour, respectively. However, this deterioration in LOS is expected to occur even without the proposed development which only increases the delay by less than one second during both peak hours. It was also noted that the EB and SB left-turns and NB right-turn auxiliary lane storage lengths are exceeded in the No Build conditions. The City may consider increasing the storage length for these movements to accommodate the turning traffic. Intersection 1 may be improved in a future phase of the City's Paseo del Norte project; however, the intersection improvements and the timeline for their implementation have not been defined by the City at the moment.

By the Horizon 2033 year, all intersections are still expected to perform at a LOS D or better except for:

- Intersection 1 (Universe Blvd & Paseo del Norte Blvd) – The intersection is expected to deteriorate to a LOS F by 2033 during both peak hours. However, this deterioration in LOS is expected to occur even without the proposed development which only increases the delay by less than one second during both peak hours.
- Intersection 2 (Universe Blvd and School Driveway) – A LOS E is expected during the 2033 AM Build peak hour for 1-stage EB left turns. However, the proposed cross section of Universe Blvd will include a median, which will allow a 2-staged left turn movement for the EB approach. This will improve the LOS to a C or better during both peak hours.
- Intersection 7 (Universe Blvd & Rainbow Blvd intersection) – The intersection is expected to deteriorate to a LOS E in the 2033 AM No Build and Build peak hour. However, the proposed development will increase the delay by almost 20 seconds when compared to the 2033 No Build conditions. It can also be noted that the Existing 2022 queue (without the development) exceeds the SB left-turn storage. The City may consider modifying the lane configuration for the SB movement to accommodate the high SB left-turn volumes.

Based on the traffic analysis results, it can be concluded that the Universe View development will adversely impact Intersection 7.

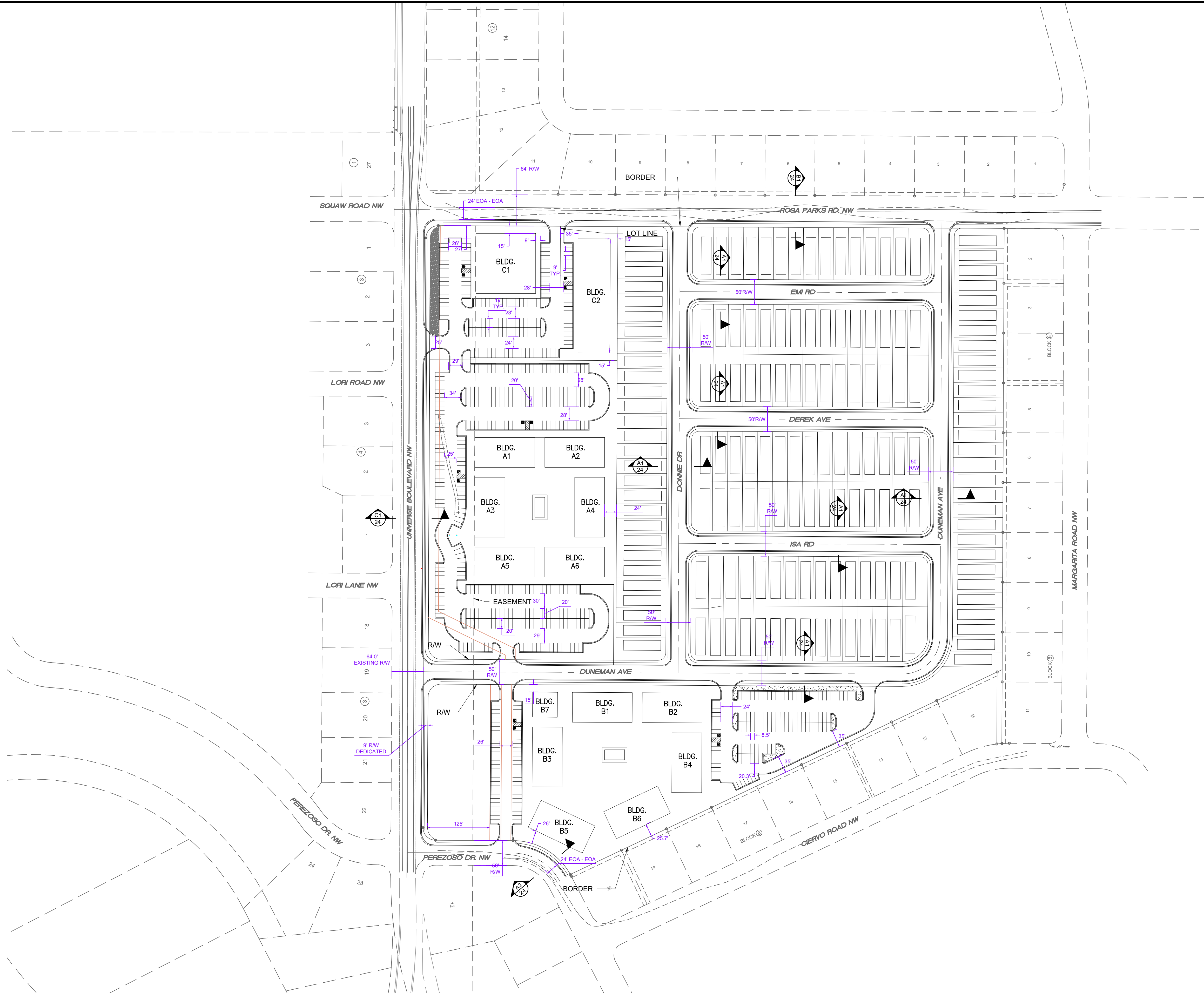
Also, from the sight distance analysis performed, it can be concluded that there will be no sight distance issues at the proposed Rosa Parks Rd and Perezoso Dr intersections with Universe Blvd, and the two driveway access points along Universe Blvd.

Recommendations

To mitigate the impacts to Intersection 7, a WB right-turn auxiliary lane (240-ft storage length with 150-ft of transition) and signal optimization are recommended after Phase III is completed. However, before any improvements are implemented, it is recommended that the intersection be evaluated again at the completion of Phase III to verify that the improvements are required. If Rosa Parks Rd is extended to Unser Blvd by the end of this phase, the amount of traffic accessing the development through Universe Blvd will be reduced given that traffic would be able to access the development through Rosa Parks Rd and Unser Blvd. This would decrease the development's generated traffic at Intersection 7 and minimize the traffic impacts; therefore, only signal optimization (without the additional WB right-turn auxiliary lane) would be recommended.

APPENDIX A1

Site Plan



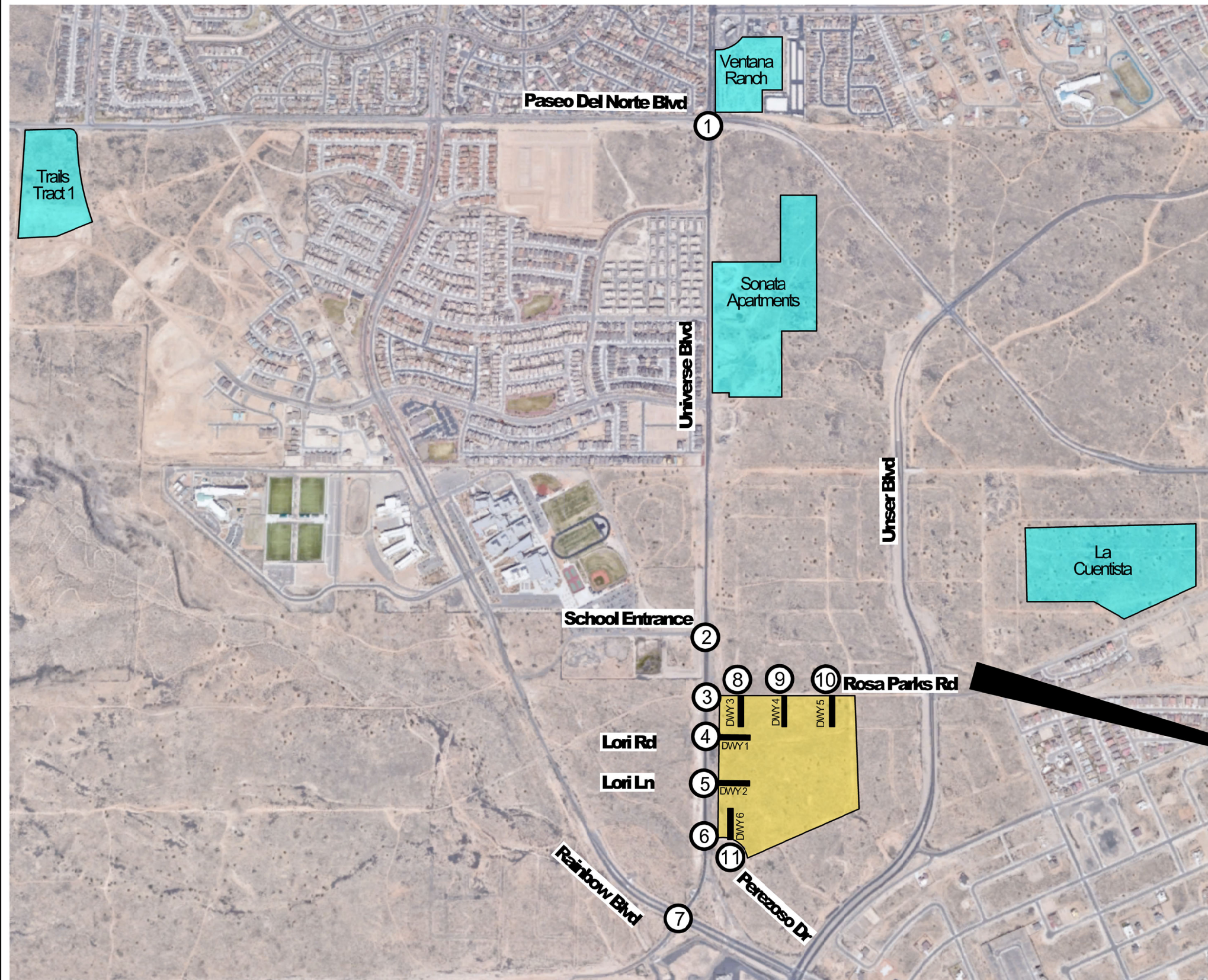
SITE DATA					
SITE ADDRESS: UNIVERSE BLVD AND ROSA PARKS RD NW, ALBUQUERQUE, NM LEGAL DESCRIPTION: LOT 1, BLOCK 8, VOLCANO CLIFFS SUBDIVISION ACRES: .3013 ZONE/ATLAS: D-10 ZONING SUMMARY: (MX-L) MIXED-USE - LOW INTENSITY ZONE DISTRICT CONSTRUCTION TYPE: V-B FOR TOWNHOME LOTS BUILDING HEIGHT: COMMERCIAL 20'-0". APARTMENTS 32'-0" SPRINKLERED: APARTMENTS & COMMERCIAL FULLY SPRINKLERED; TOWNHOMES NOT SPRINKLERED					
BUILDING DATA					
BUILDING TYPE - A: FIRST LEVEL 7,200 GSF = APARTMENTS SECOND LEVEL 7,200 GSF = APARTMENTS BLDG A1-A6 86,400 GSF TOTAL 86,400 GSF CONSTRUCTION TYPE: V-A					
BUILDING TYPE - B: FIRST LEVEL 7,200 GSF = APARTMENTS SECOND LEVEL 7,200 GSF = APARTMENTS BLDG B1-B6 86,400 GSF TOTAL 86,400 GSF CONSTRUCTION TYPE: V-A					
BUILDING TYPE - B7: FIRST LEVEL 2,500 GSF = (GYM/OFFICE) SECOND LEVEL 2,500 GSF = (APARTMENTS) TOTAL 5,000 GSF					
BUILDING TYPE - C1: FIRST LEVEL 14,400 GSF = PHARMACY w/o DRIVE THRU TOTAL 14,400 GSF CONSTRUCTION TYPE: V-A					
BUILDING TYPE - C2: FIRST LEVEL 14,726 GSF = (SHOPPING CENTER) TOTAL 14,726 GSF CONSTRUCTION TYPE: V-A					
TOTAL BUILDING AREA 203,325 GSF LARGEST SF SPACE: BLDG C2 16,725 GSF					
BUILDING TYPE - TOWNHOMES: LOT SIZE 3000 SF NUMBER OF LOTS 162 CONSTRUCTION TYPE: V-B					
Designed By: HUITT-ZOLLARS Huitt-Zollars, Inc. Albuquerque 6501 Americas Pkwy NE, Suite 550 Albuquerque, New Mexico 87110 Phone (505) 883-8114 Fax (505) 883-5022					
CITY OF ALBUQUERQUE DEPARTMENT OF MUNICIPAL DEVELOPMENT ENGINEERING DIVISION					
TITLE: UNIVERSE VIEW SUBDIVISION SITE PLAN					
Design Review Committee		City Engineer			
City Project No.		Zone Map No.		Sheet Of	
		D - 10		35	

APPENDIX A2

Typical Sections

APPENDIX B

Figures

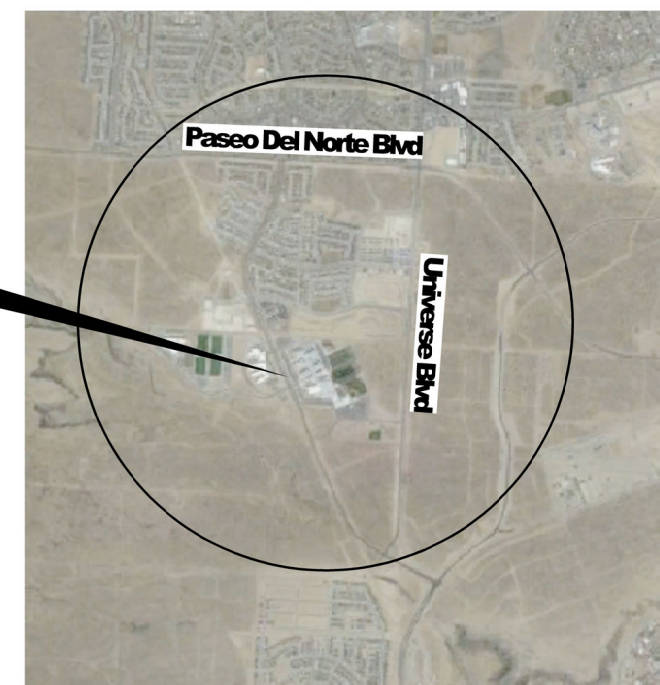


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INTERSECTION NUMBER

 FUTURE DEVELOPMENTS VOLCANO CLIFFS
SUBDIVISION

DWY DRIVEWAY

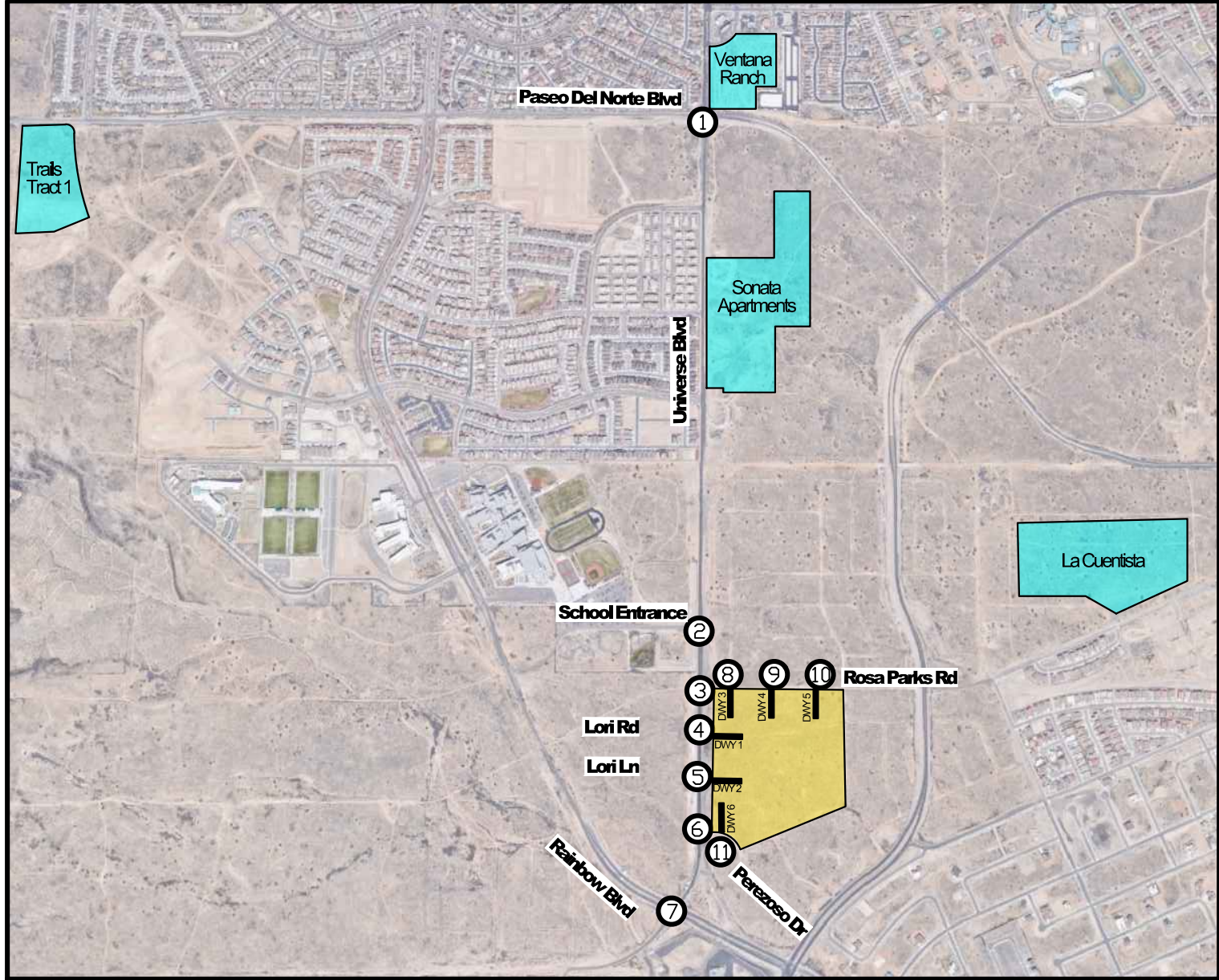


Universe View Subdivision

Project Location Exhibit

Figure number

1

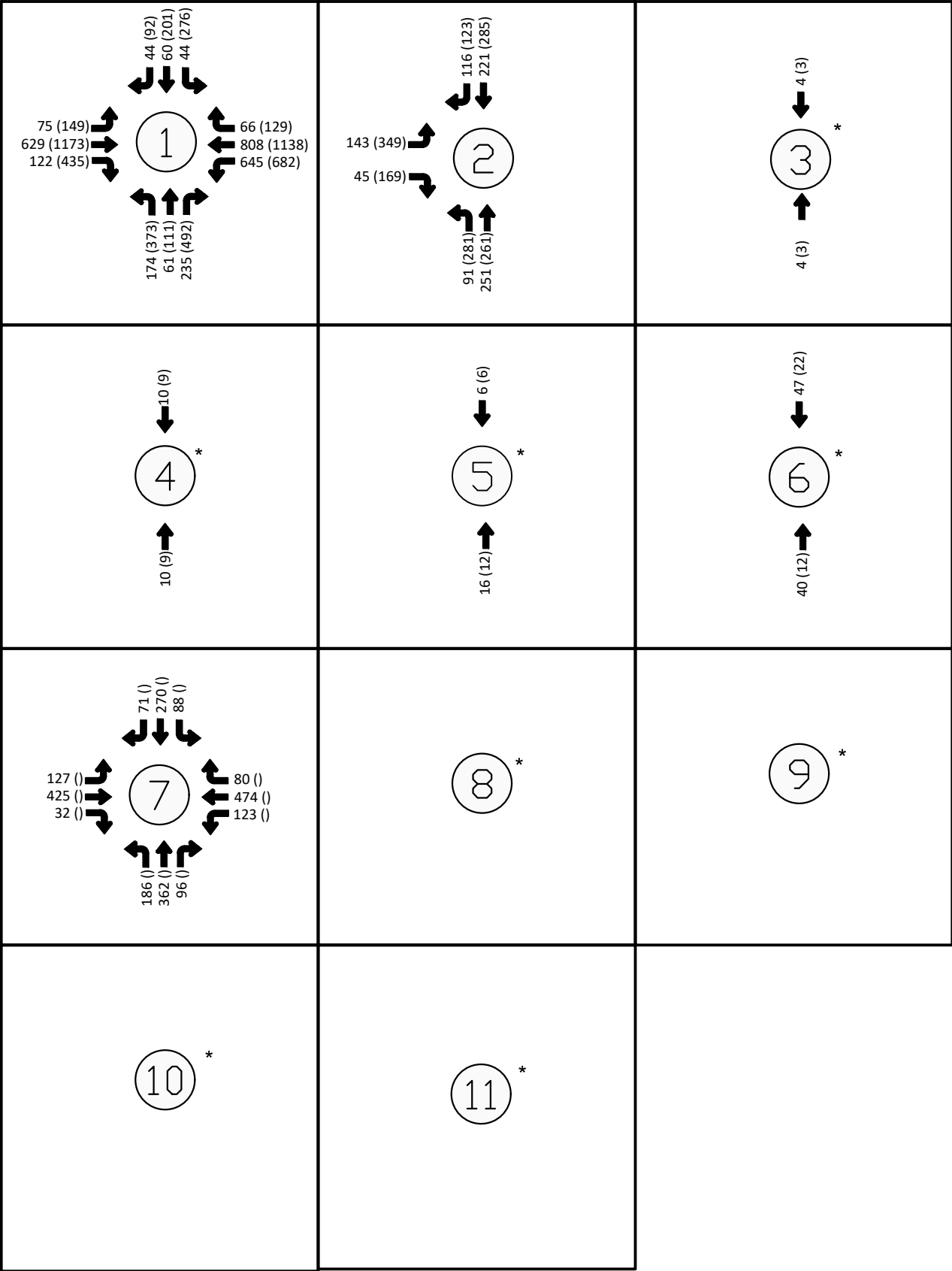


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- # INTERSECTION NUMBER
- # (#) AM (PM)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY



NOT TO SCALE

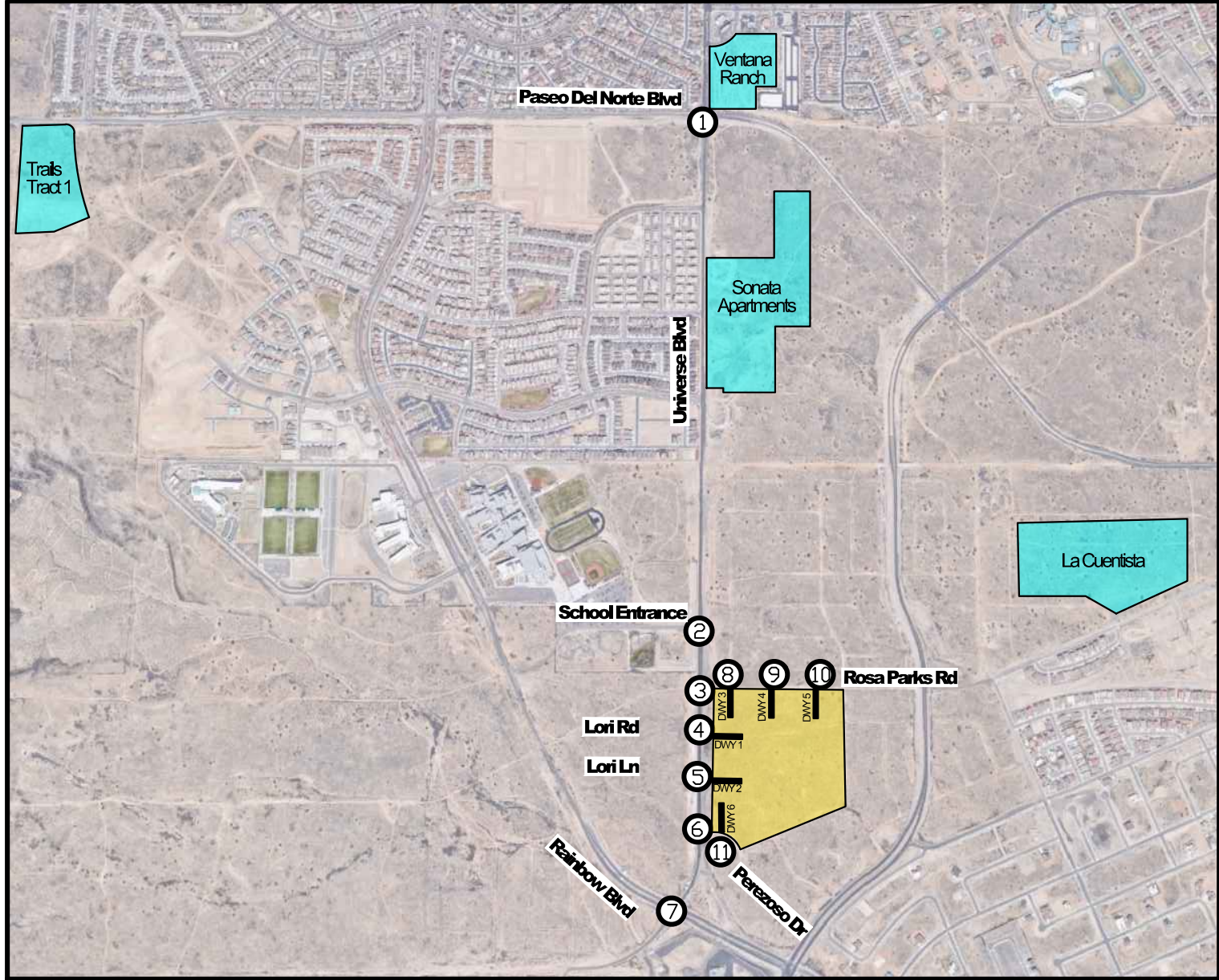


* FUTURE VOLCANO CLIFF SUBDIVISION ACCESS POINTS

Universe View Subdivision
2022 Existing
Turning Movement Counts

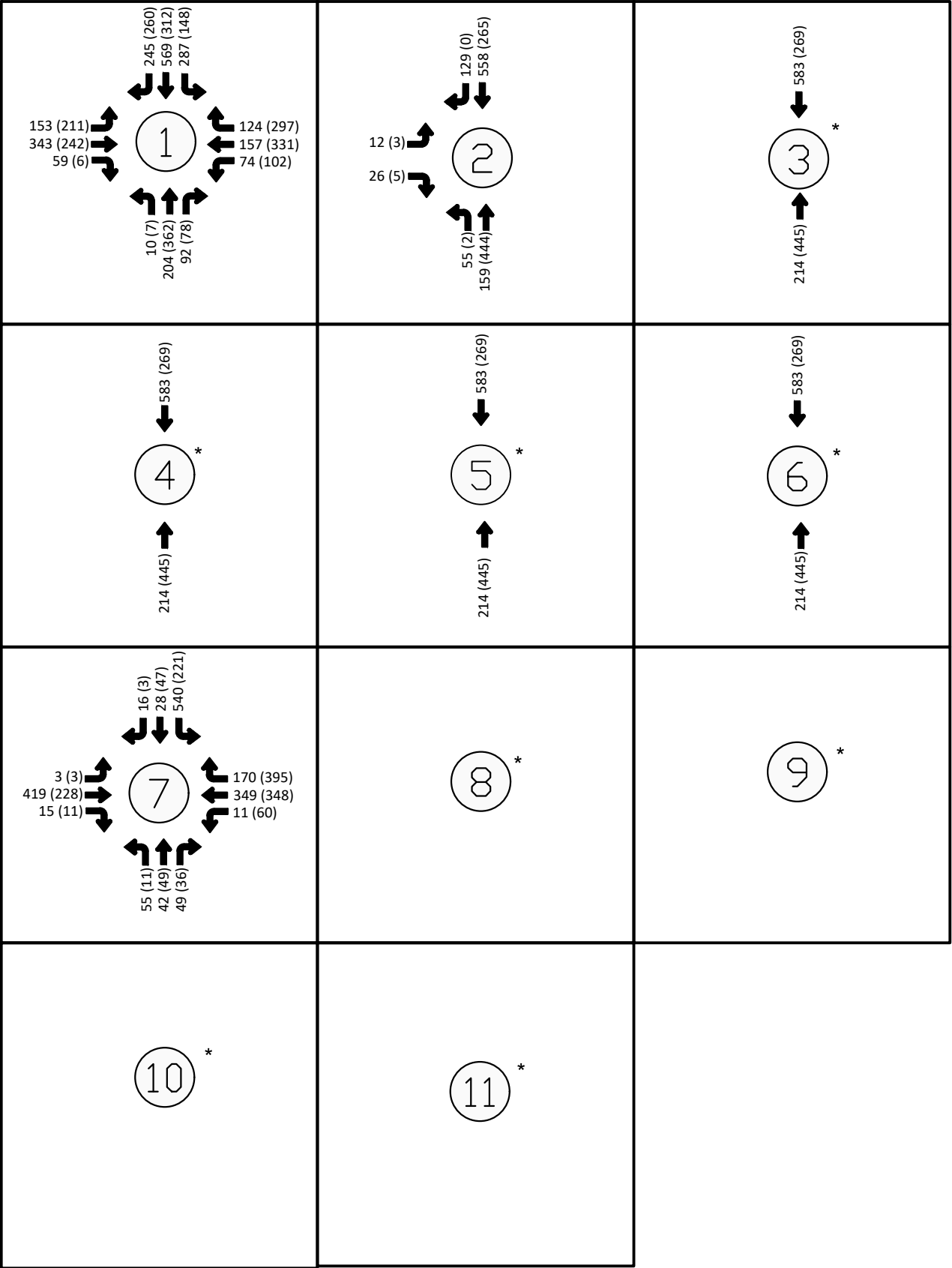
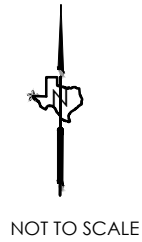
HUITT-ZOLLARS
333 Rio Rancho Drive NE
Suite 101
Rio Rancho, New Mexico 87124
905.892.5141
Firm No. F-761
www.huitt-zollars.com

Figure
Number
2



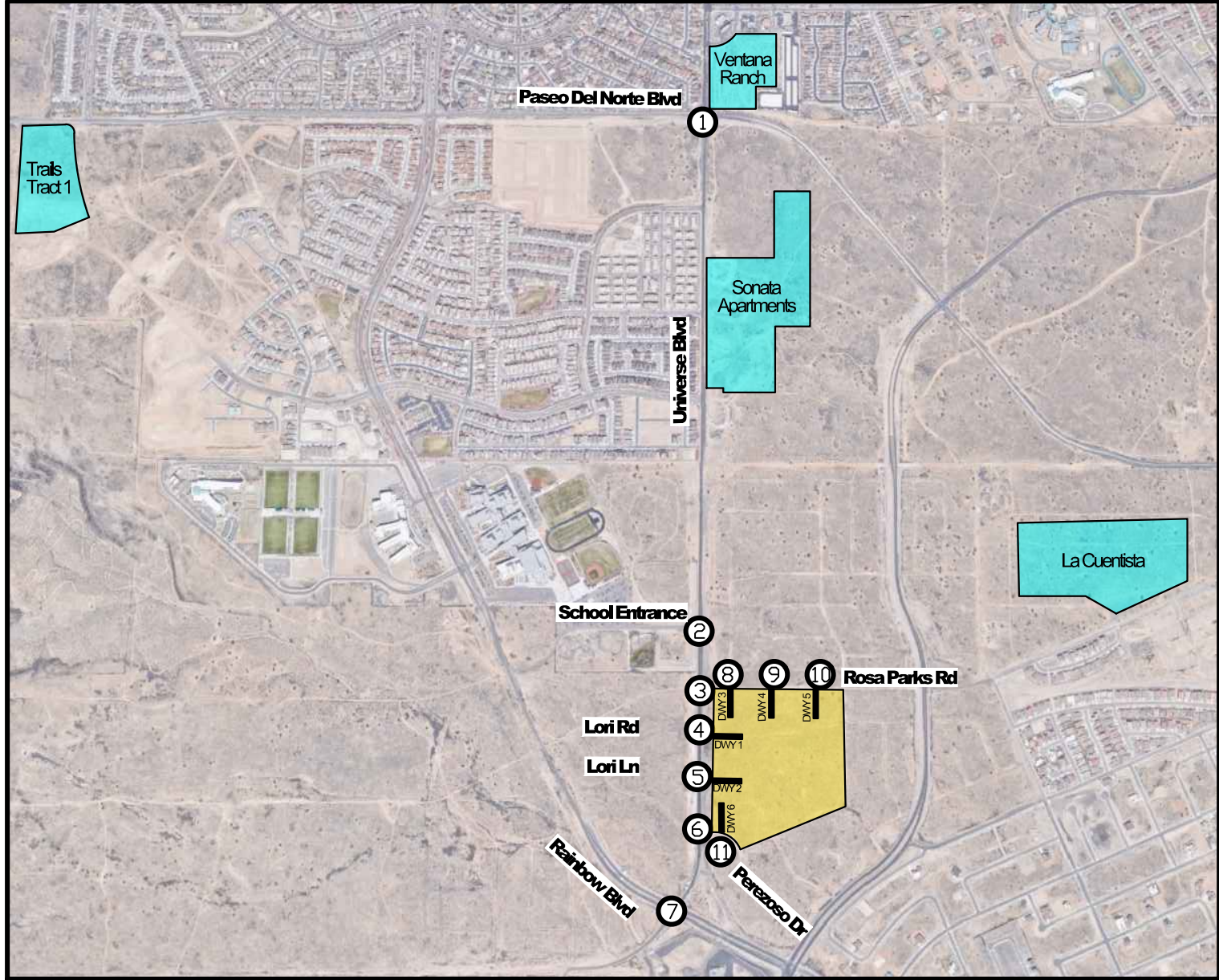
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- # INTERSECTION NUMBER
- # (#) AM (PM)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY



* FUTURE VOLCANO CLIFF SUBDIVISION ACCESS POINTS

Universe View Subdivision
Projected 2023
Turning Movement Counts

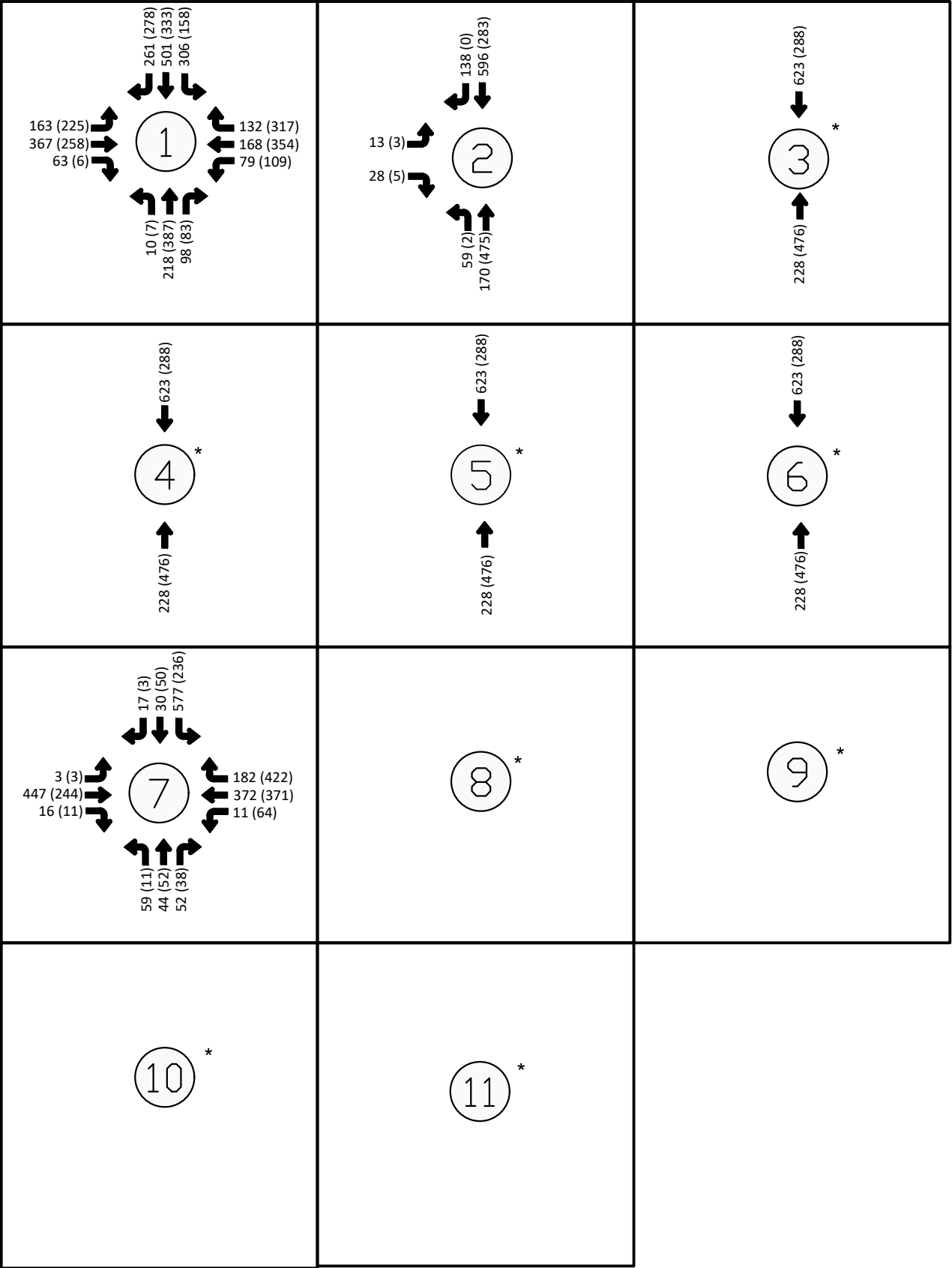


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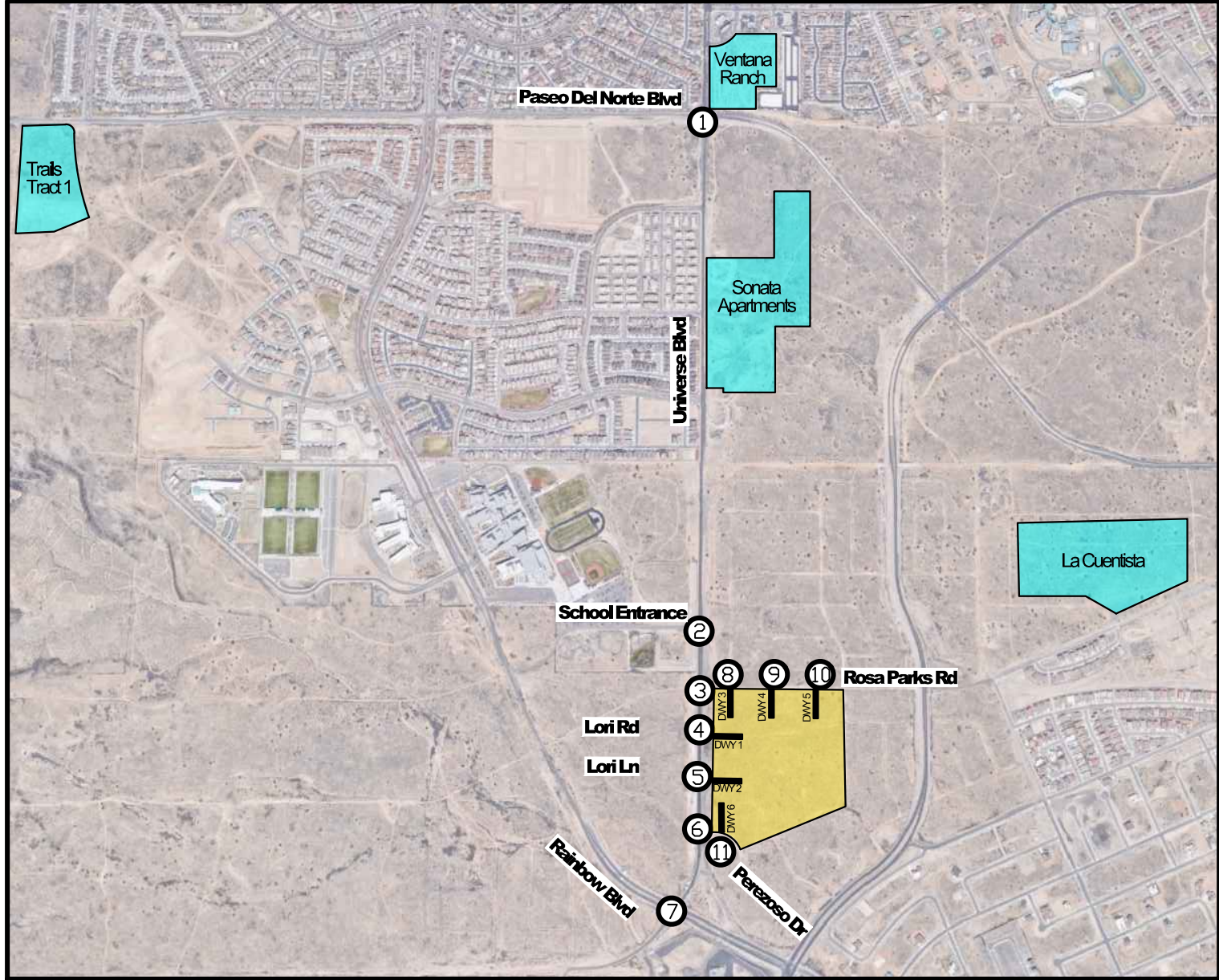
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- # (#) AM (PM)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY



NOT TO SCALE



* FUTURE VOLCANO CLIFF SUBDIVISION ACCESS POINTS

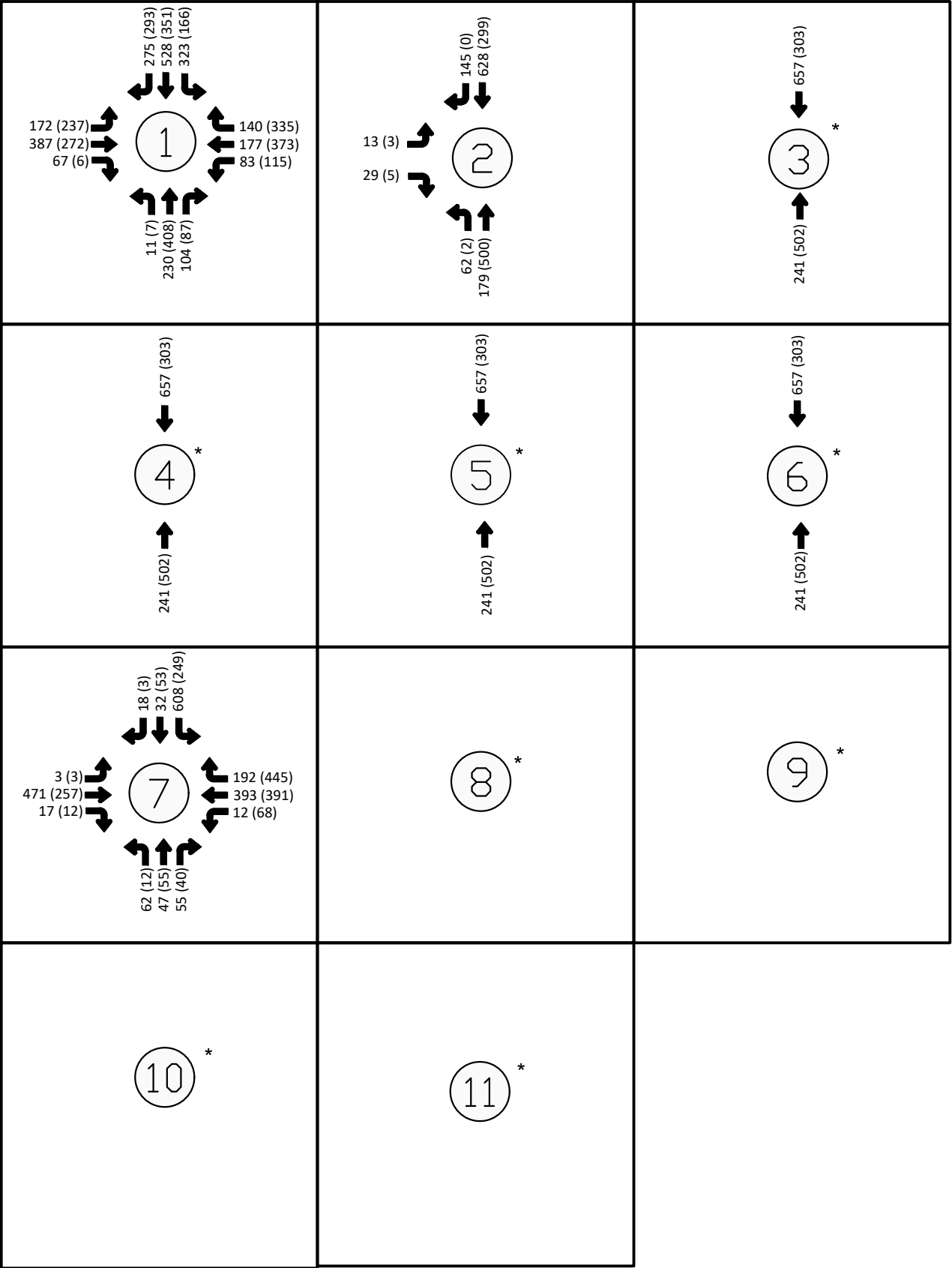


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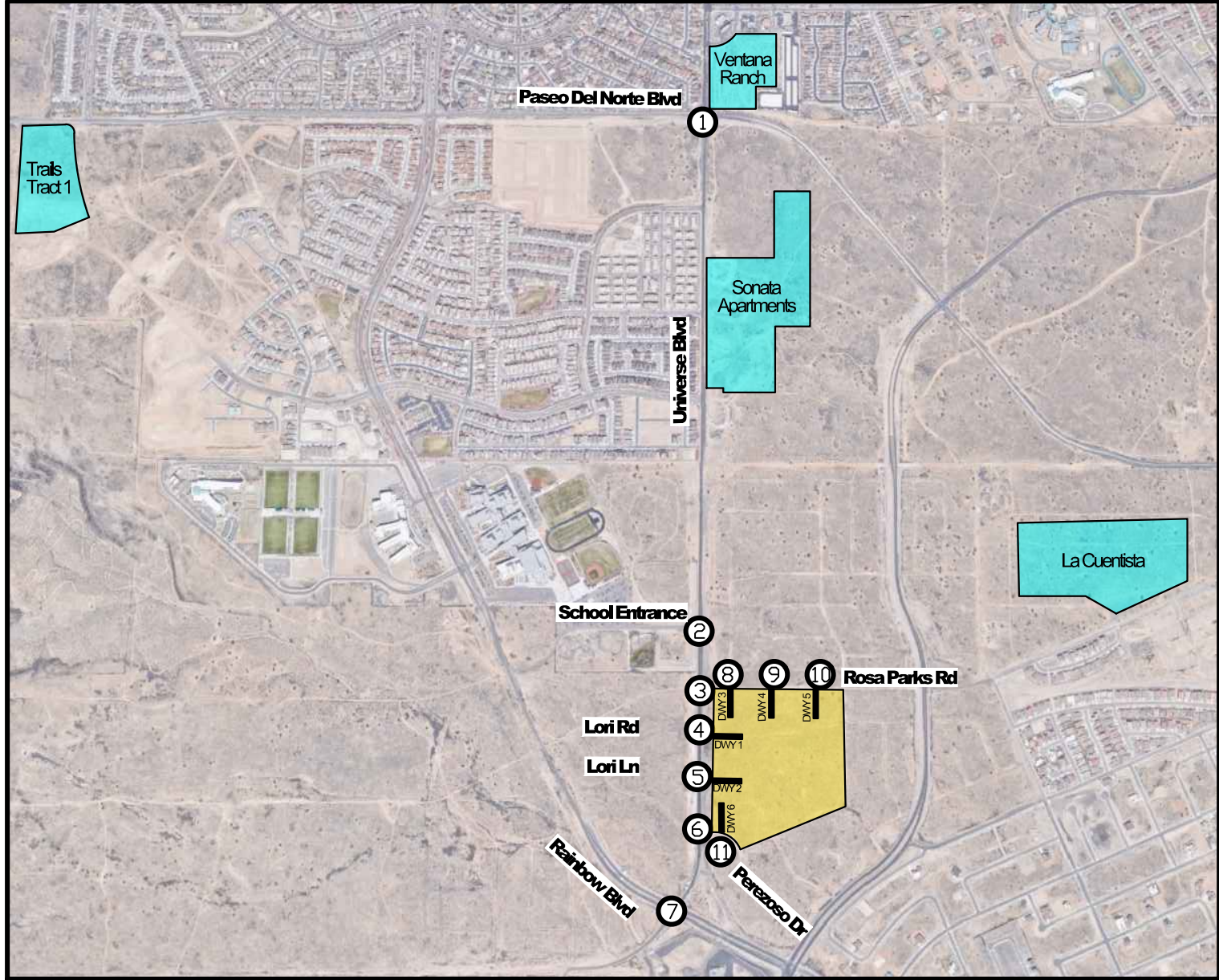
- # INTERSECTION NUMBER
- # (#) AM (PM)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY



NOT TO SCALE



* FUTURE VOLCANO CLIFF SUBDIVISION ACCESS POINTS

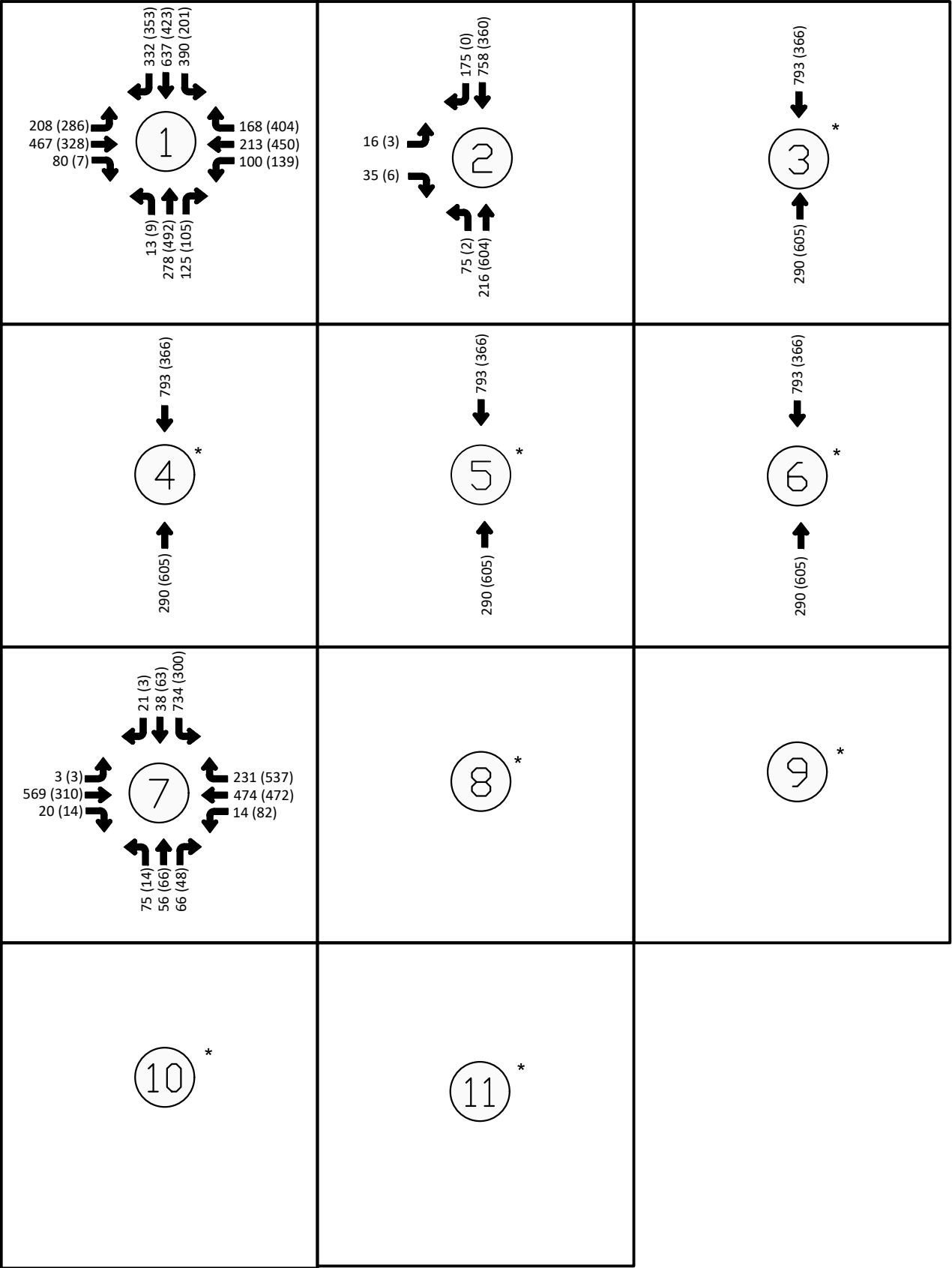


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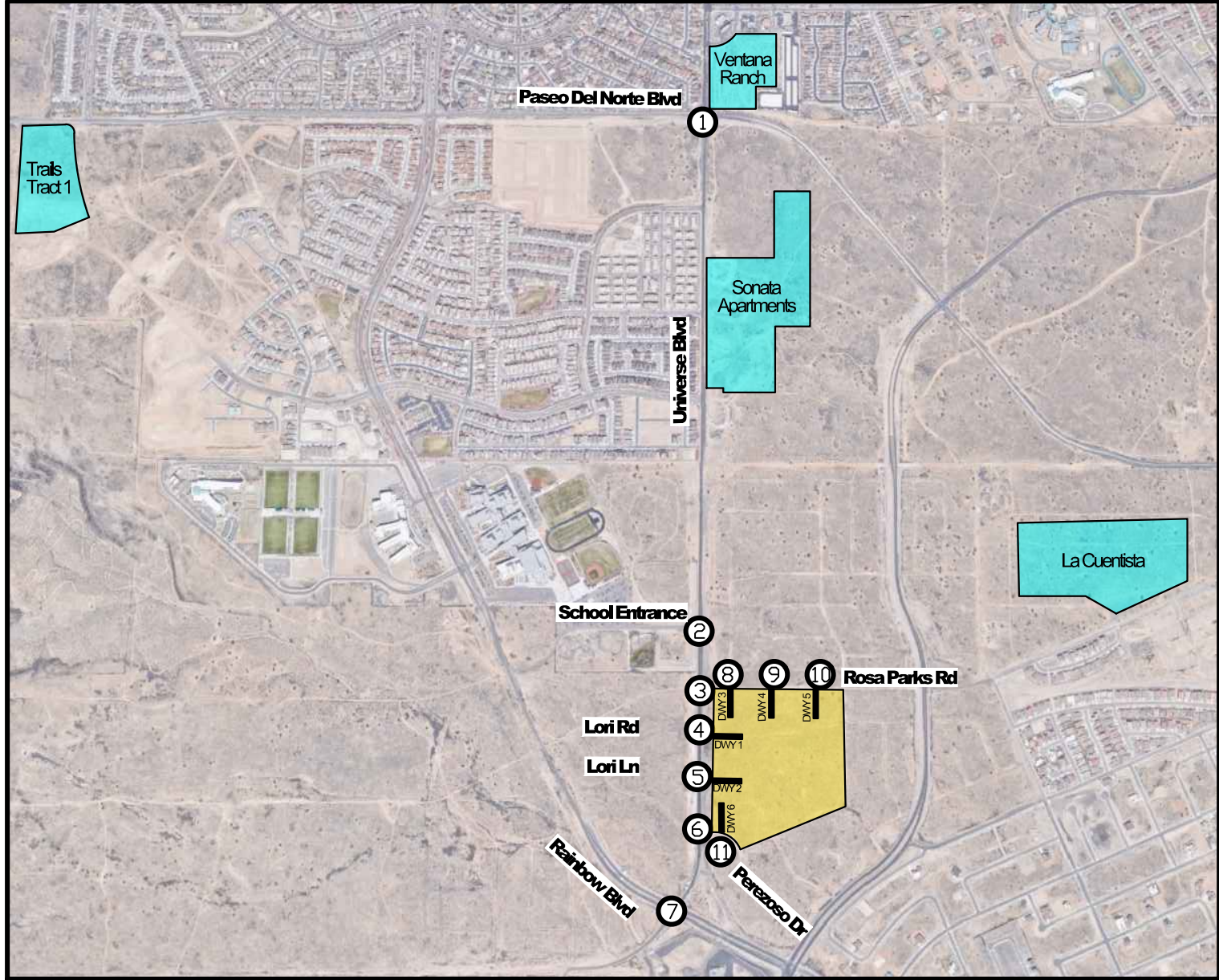
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- # (#) AM (PM)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY



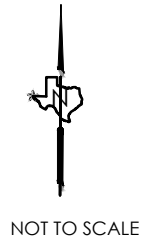
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* FUTURE VOLCANO CLIFF SUBDIVISION ACCESS POINTS



- Legend**
- # INTERSECTION NUMBER
 - # (#) AM (PM)
 - VOLCANO CLIFF SUBDIVISION
 - PROPOSED DEVELOPMENTS
 - DWY DRIVEWAY

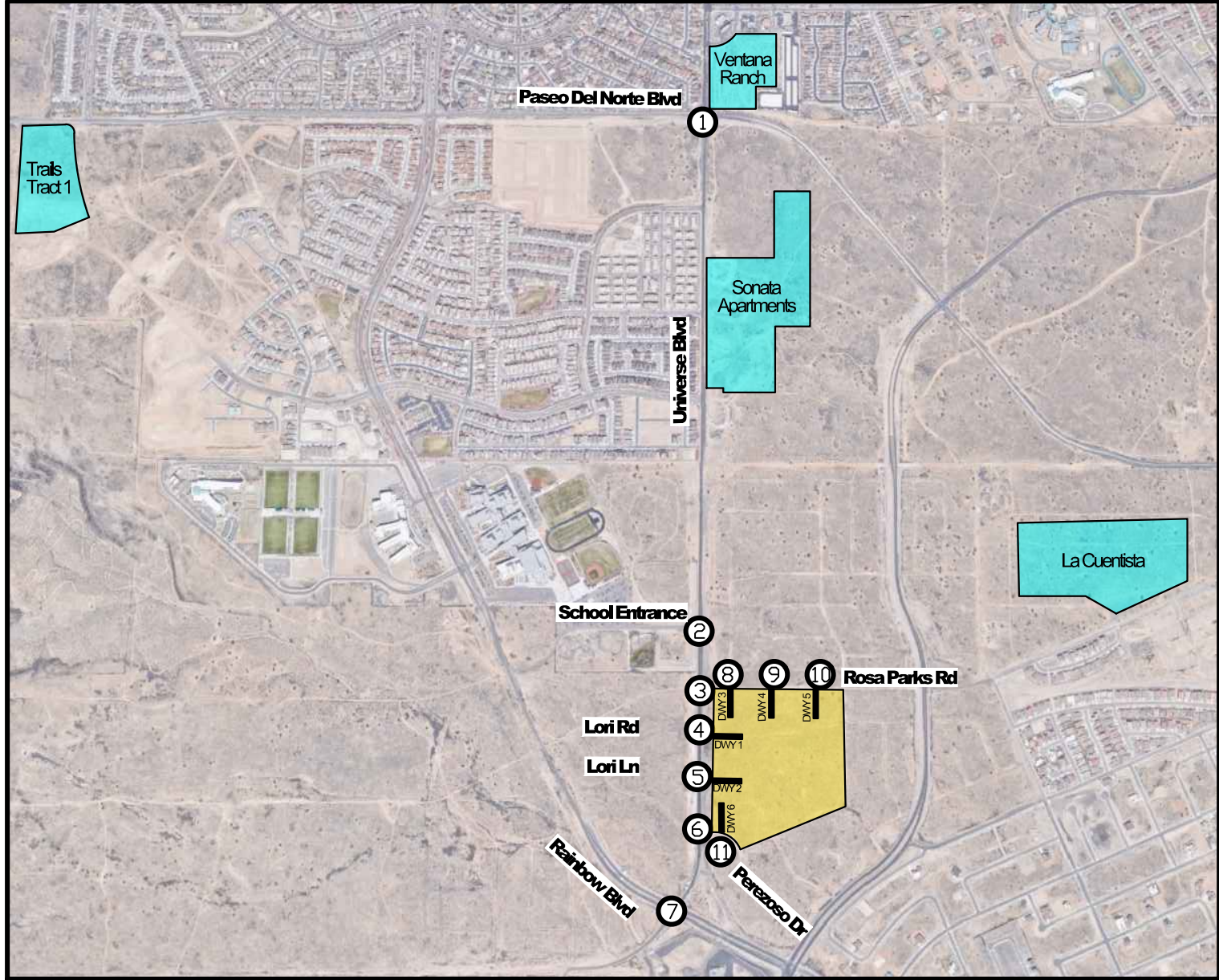


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2 (2) 4	2 (2) 5	2 (2) 6
1 (0) 1 (1) 0 (1) 0 (0) 0 (0) 0 (0) 1 (1) 0 (0) 0 (0) 0 (0) 1 (1) 0 (0) 7	8	9
10	11	

* FUTURE VOLCANO CLIFF SUBDIVISION ACCESS POINTS

Universe View Subdivision
Ventana Square Development
Turning Movement Counts

HUITT-ZOLLARS
333 Rio Rancho Drive NE
Suite 101
Rio Rancho, New Mexico 87124
505.892.5141
Firm No. F-761
www.huitt-zollars.com



Legend

- # INTERSECTION NUMBER
- # (#) AM (PM)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY

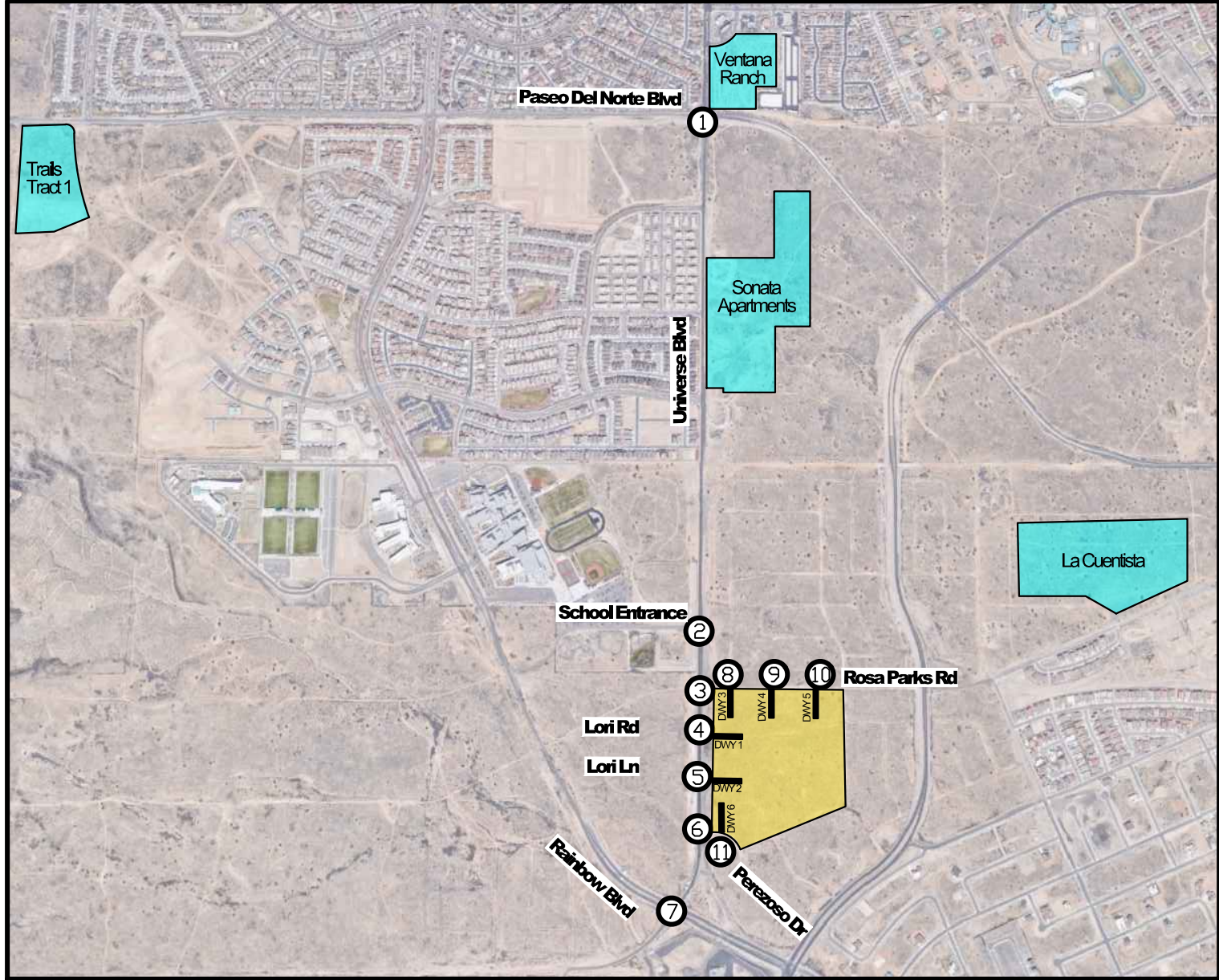


NOT TO SCALE

0 (0) 0 (0) 0 (0) 5 (8) 12 (40) 8 (37) 0 (0) 0 (0) 0 (0) 0 (0) 1	0 (0) 0 (0) 0 (0) 2 0 (0) 0 (0)	0 (0) 0 (0) 3 *
0 (0) 0 (0) 4 * 0 (0)	0 (0) 0 (0) 5 * 0 (0)	0 (0) 0 (0) 6 * 0 (0)
0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 7 0 (0) 0 (0) 0 (0) 0 (0)	8 *	9 *
10 *	11 *	

* FUTURE VOLCANO CLIFF SUBDIVISION ACCESS POINTS

Universe View Subdivision
La Cuentista Development
Turning Movement Counts

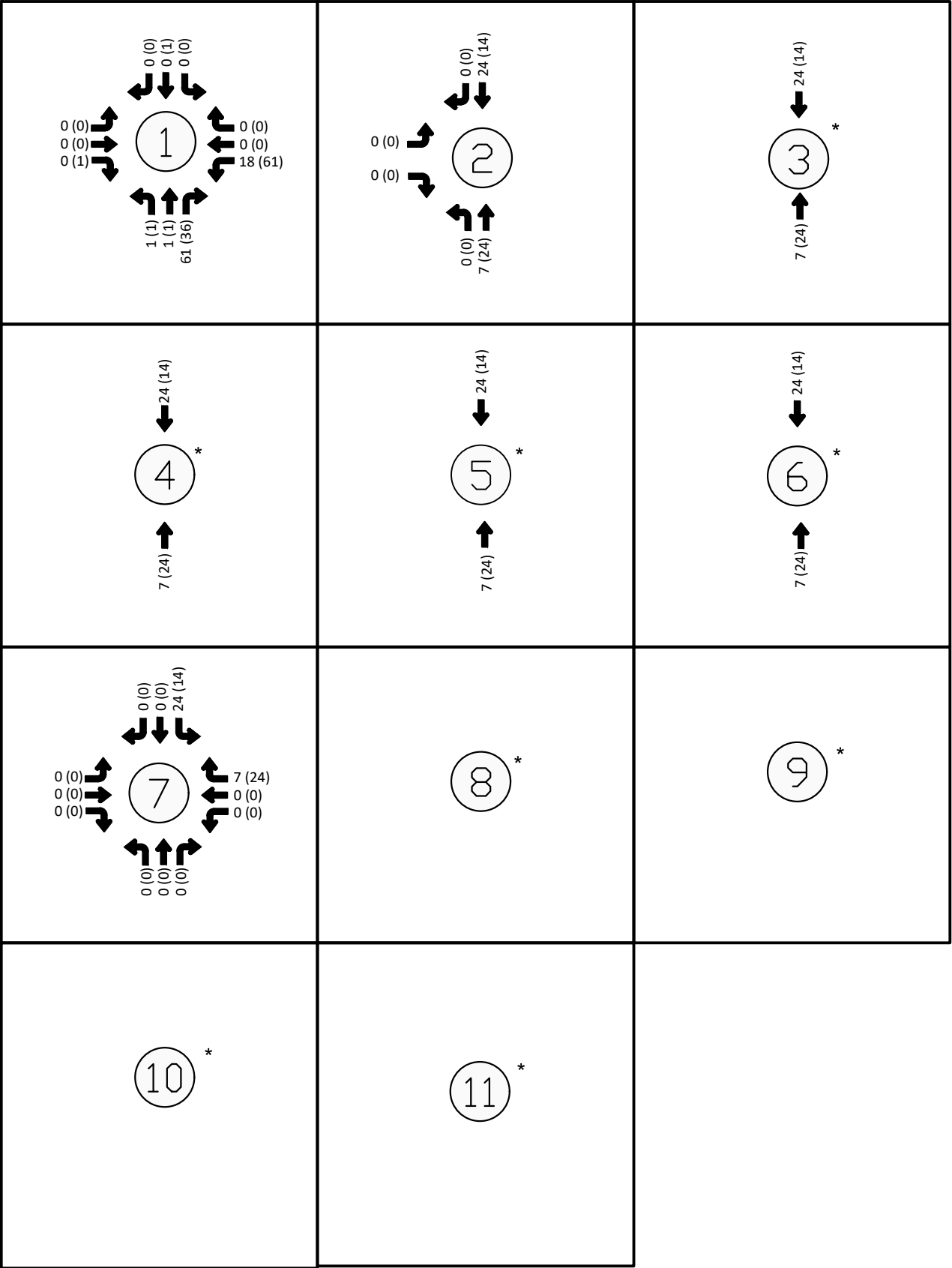


Legend

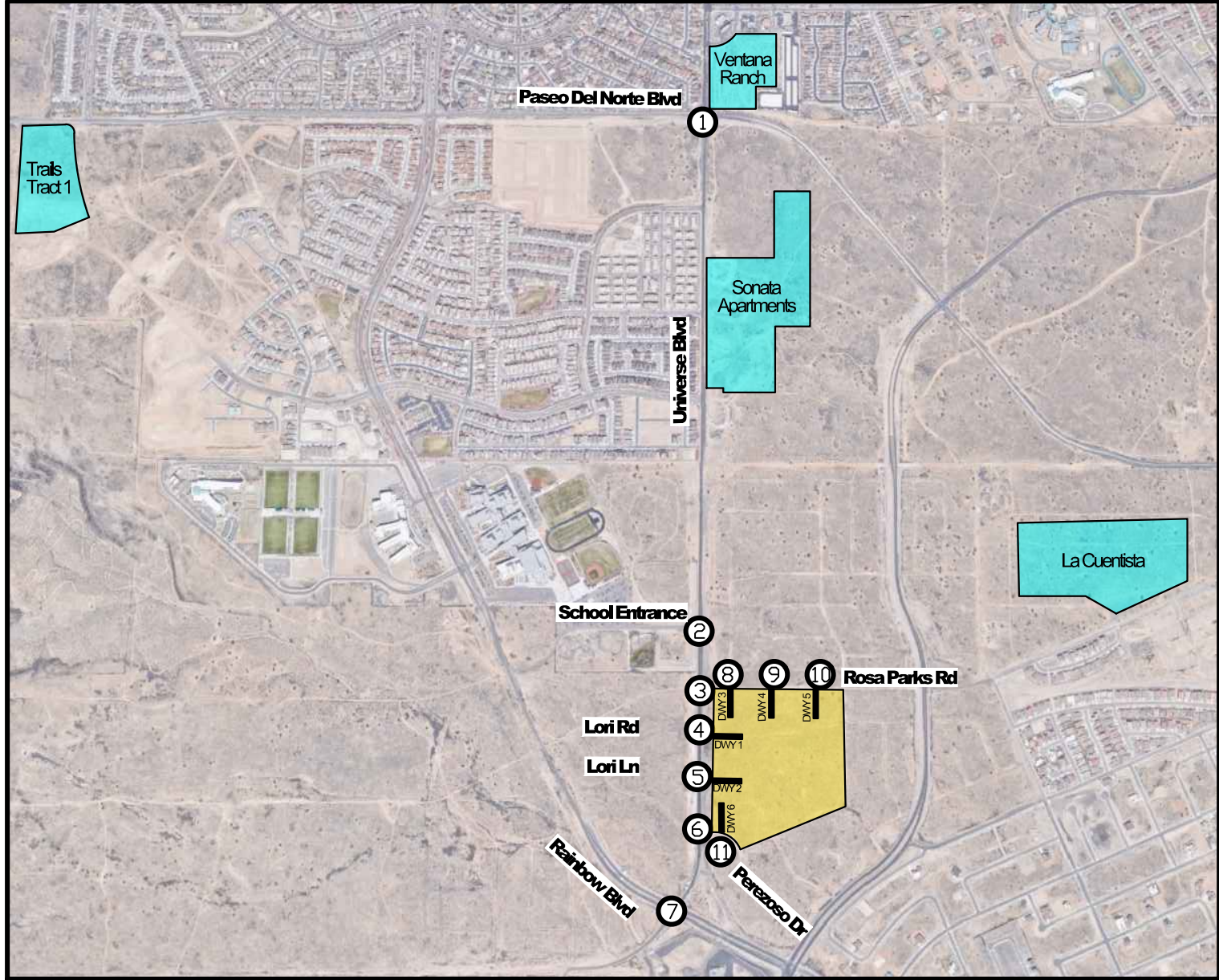
- # INTERSECTION NUMBER
- # (#) AM (PM)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY



NOT TO SCALE



* FUTURE VOLCANO CLIFF SUBDIVISION ACCESS POINTS

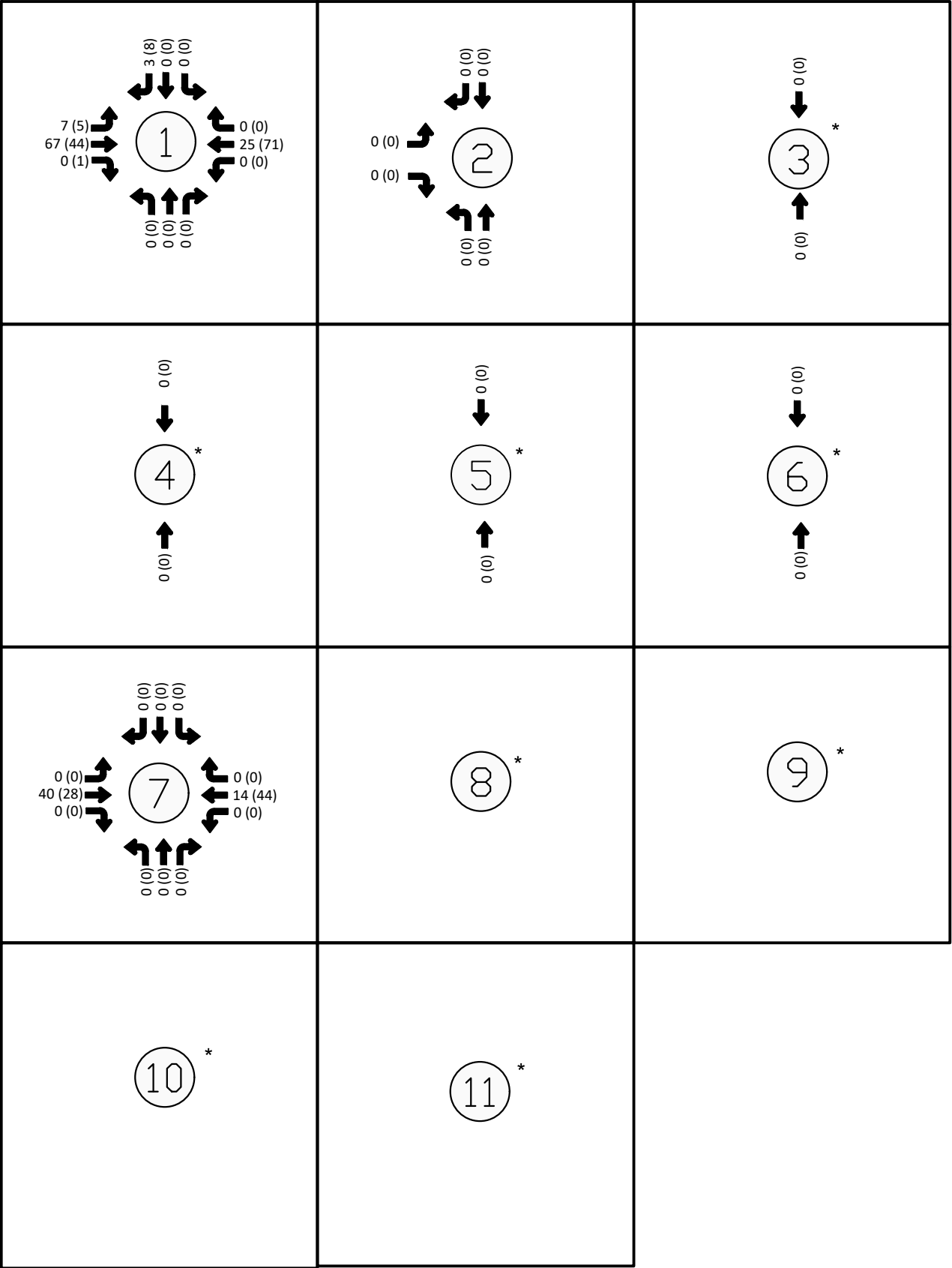


Legend

- # INTERSECTION NUMBER
- # (#) AM (PM)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY

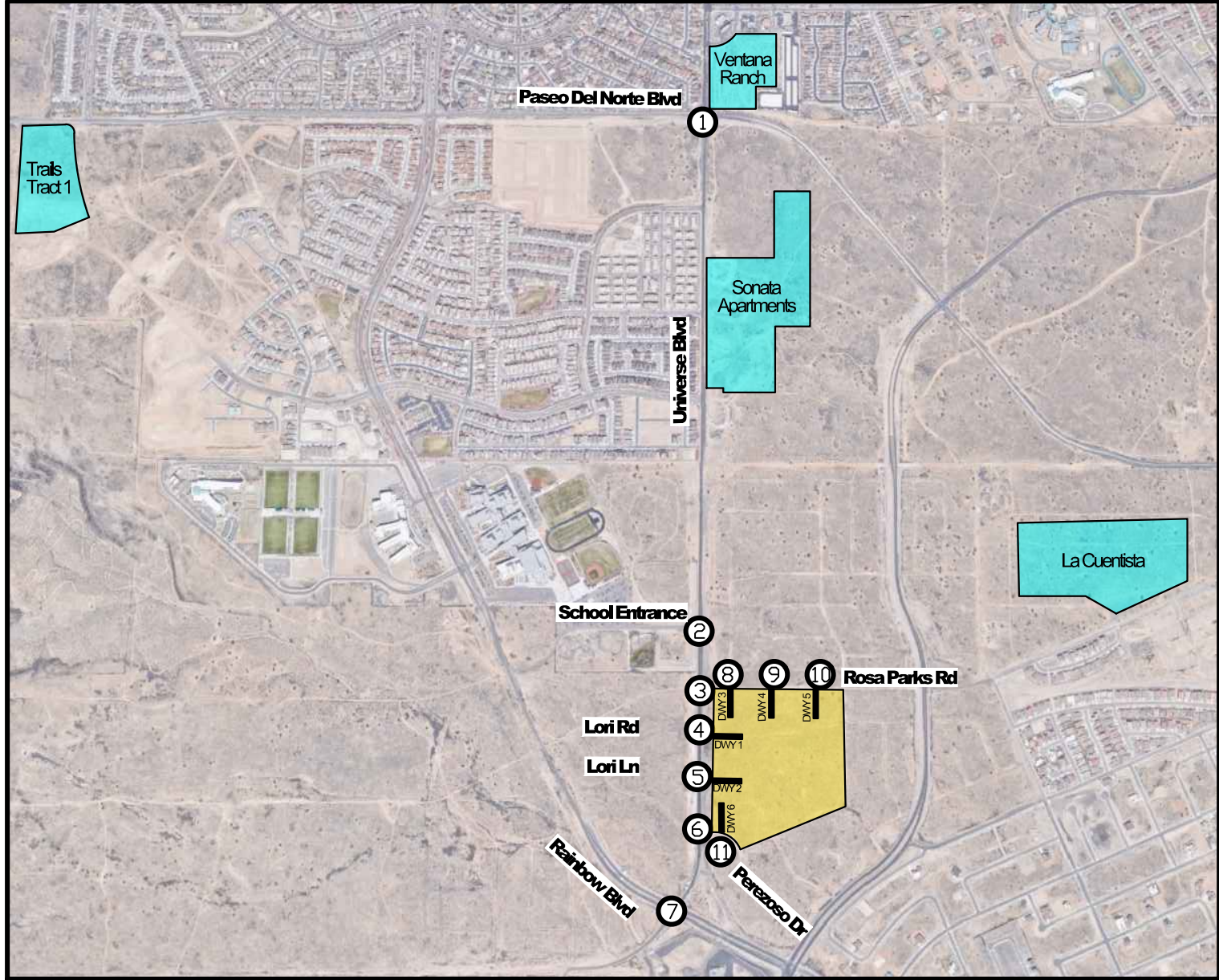


NOT TO SCALE



* FUTURE VOLCANO CLIFF SUBDIVISION ACCESS POINTS

Universe View Subdivision
Trails T1 Developments
Turning Movement Counts

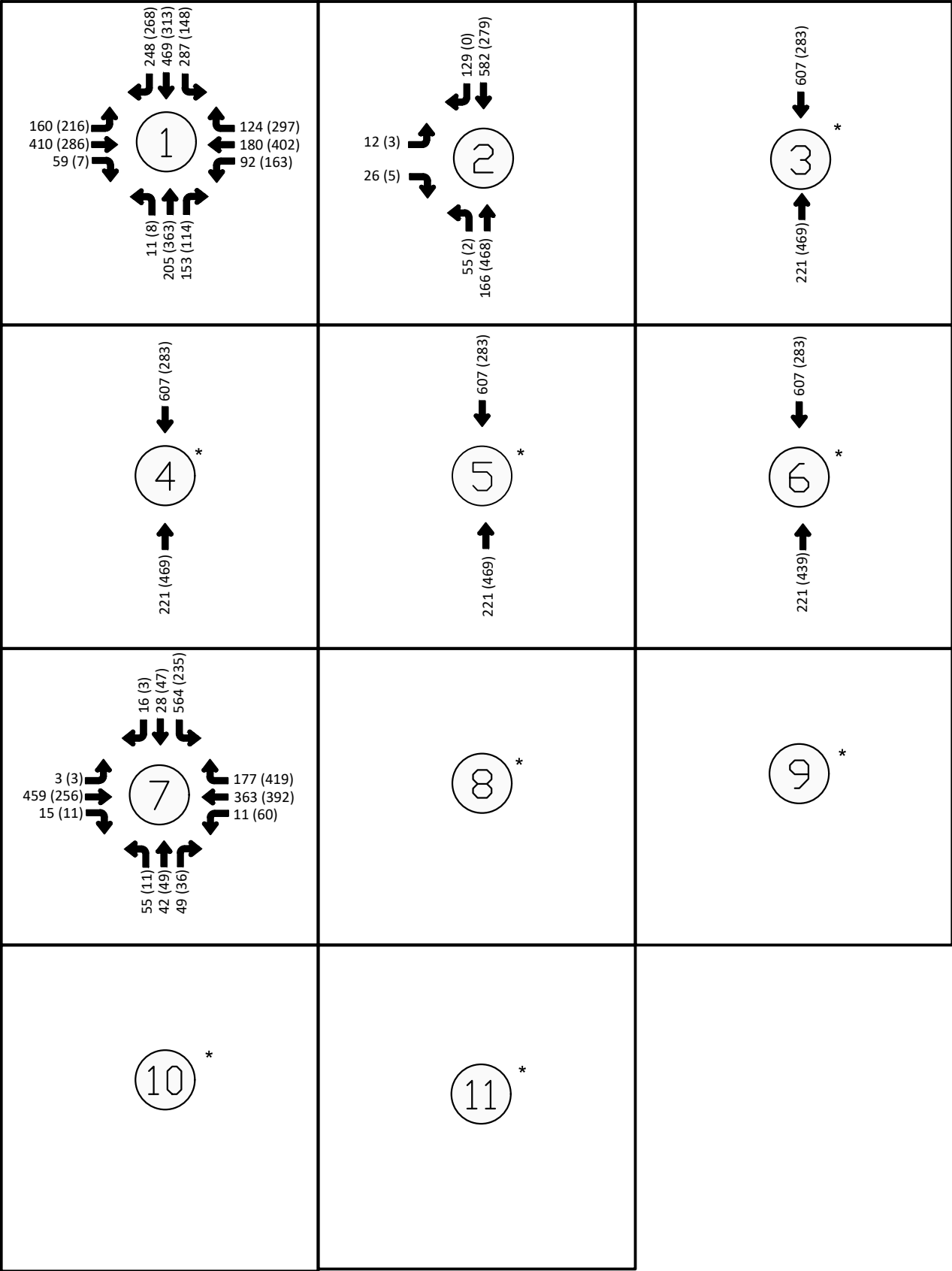


Legend

- # INTERSECTION NUMBER
- # (#) AM (PM)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY



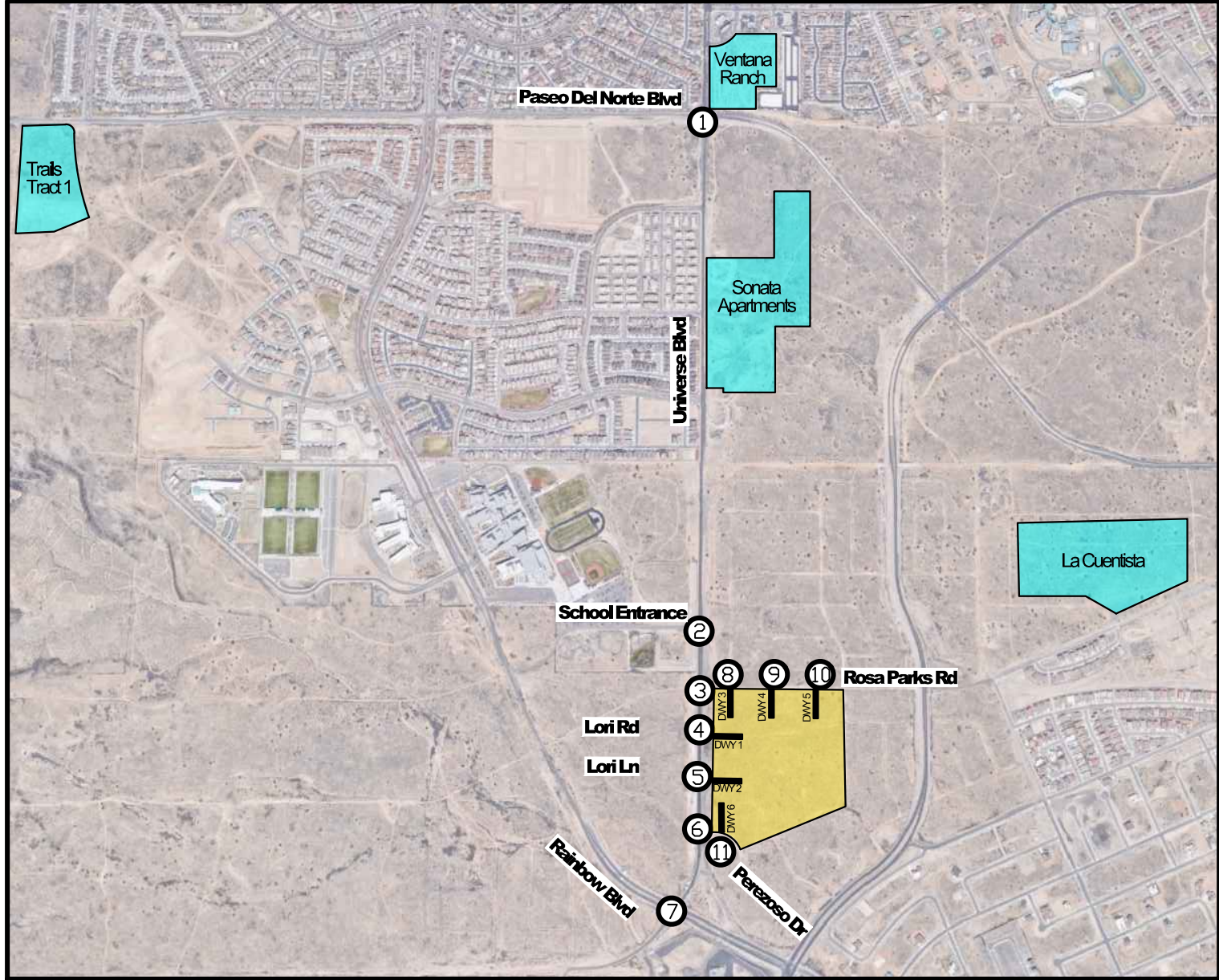
NOT TO SCALE



* FUTURE VOLCANO CLIFF SUBDIVISION ACCESS POINTS

Universe View Subdivision
No Build 2023
Turning Movement Counts

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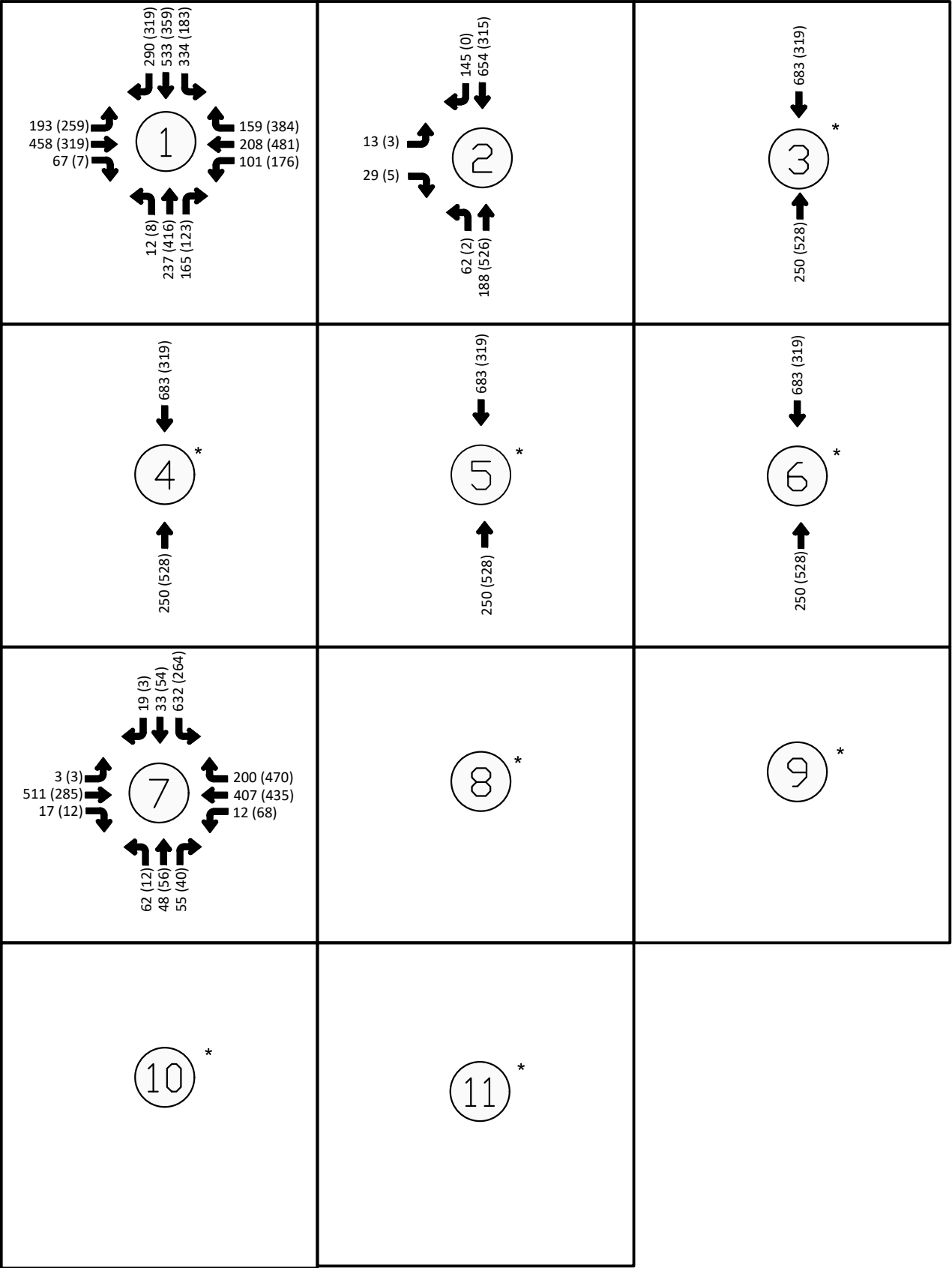


Legend

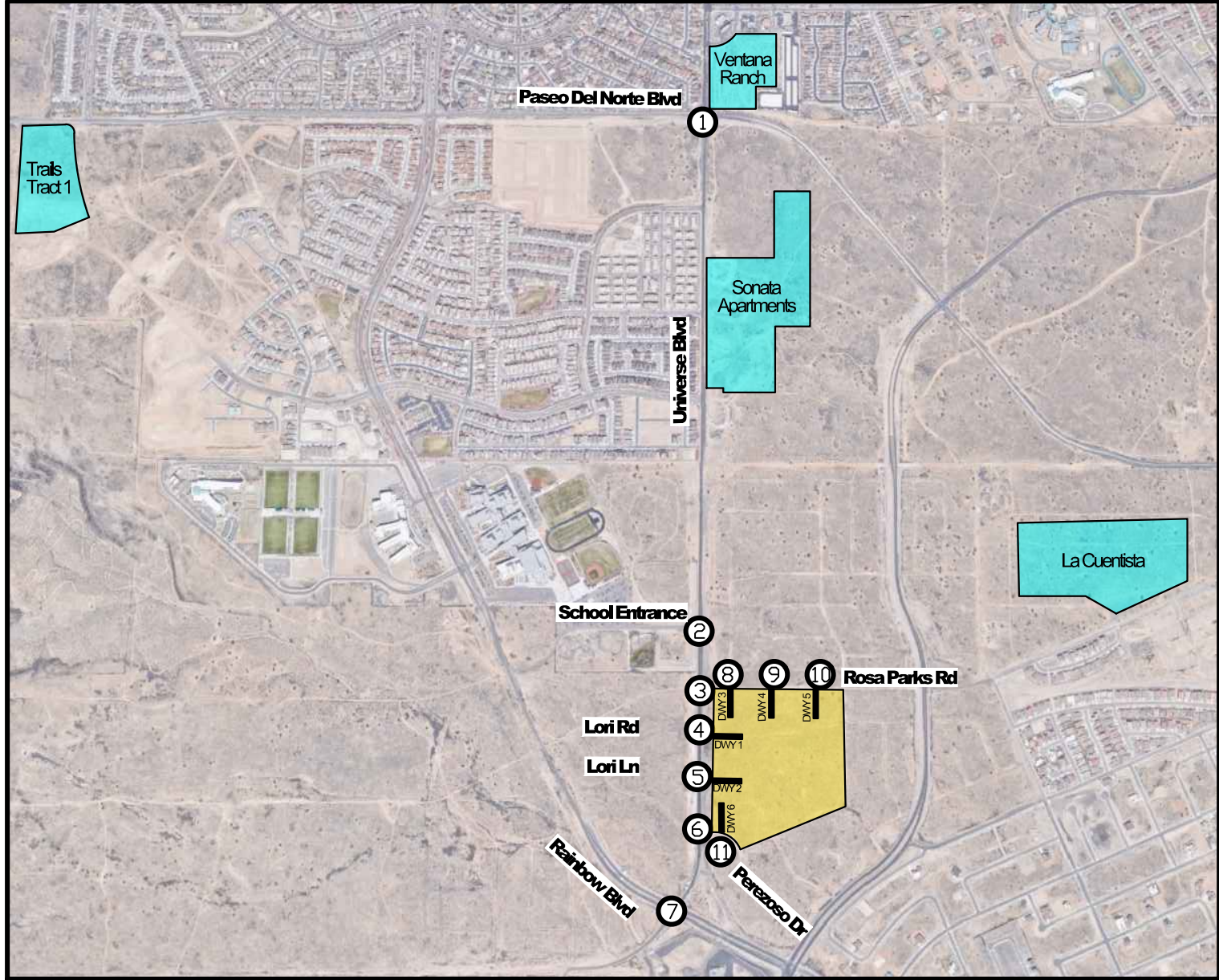
- # INTERSECTION NUMBER
- # (#) AM (PM)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY



NOT TO SCALE



* FUTURE VOLCANO CLIFF SUBDIVISION ACCESS POINTS

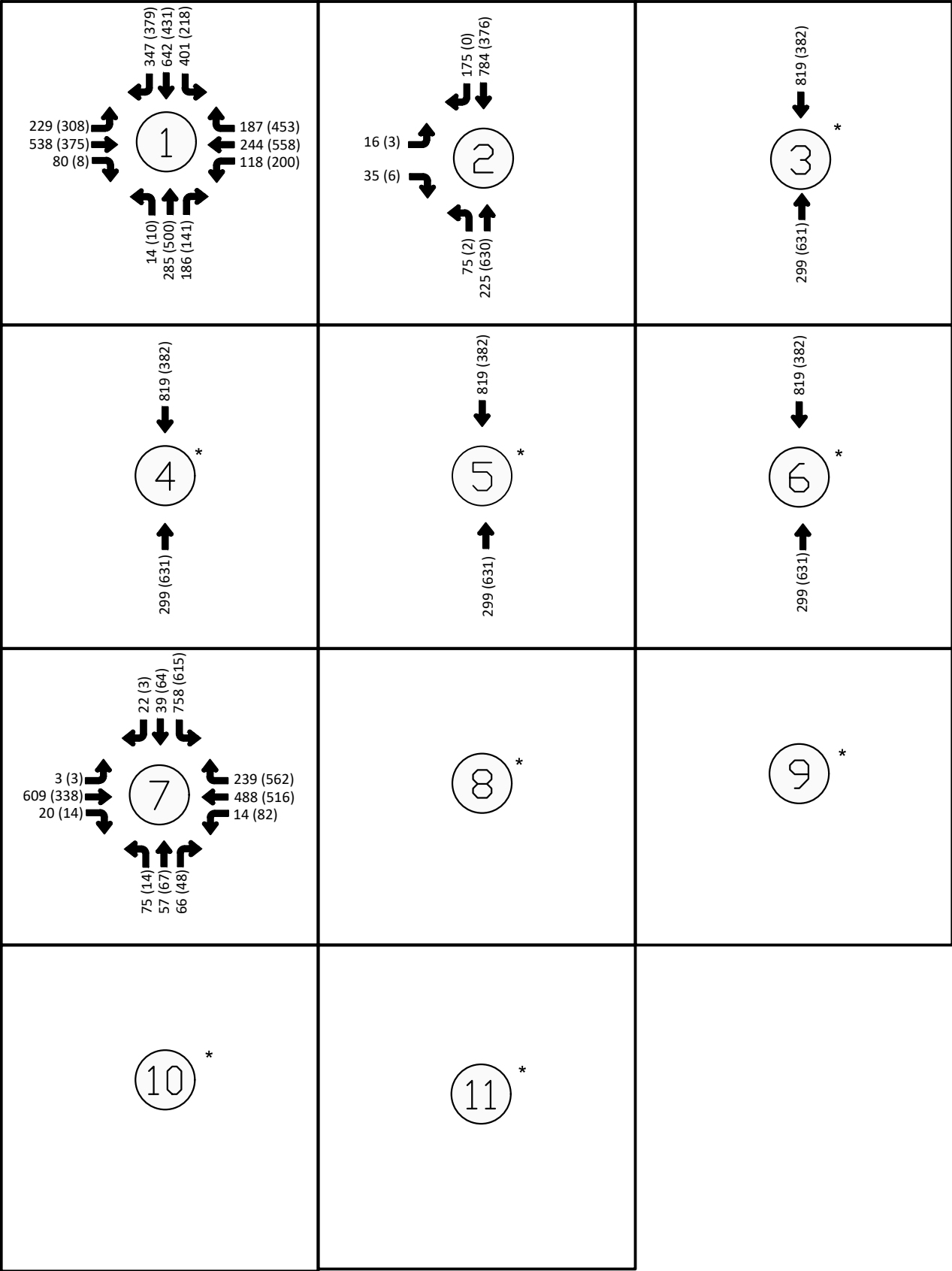


Legend

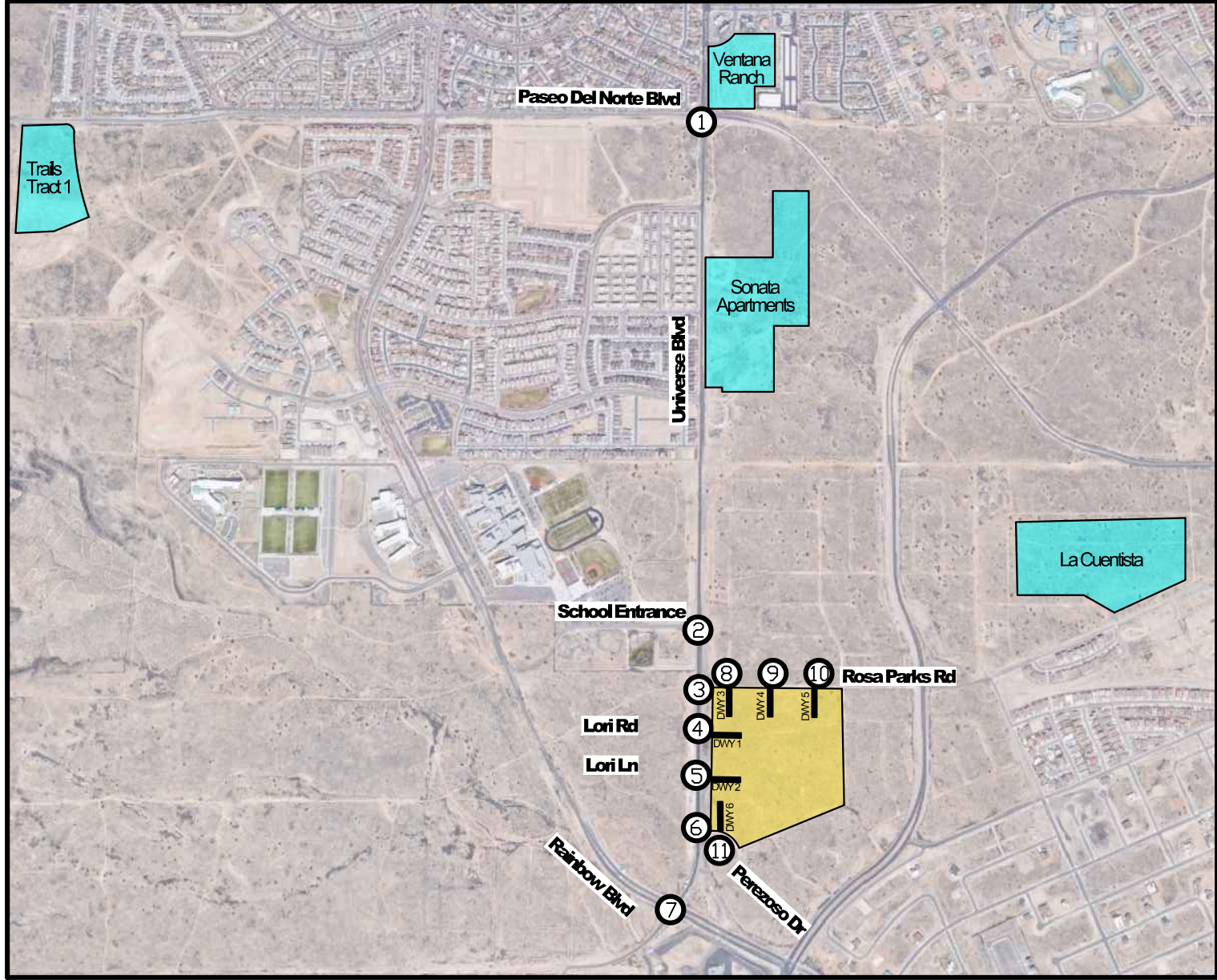
- # INTERSECTION NUMBER
- # (#) AM (PM)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY



NOT TO SCALE



* FUTURE VOLCANO CLIFF SUBDIVISION ACCESS POINTS



Legend

- # INTERSECTION NUMBER
- # (#) ENTERING (EXITING)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY

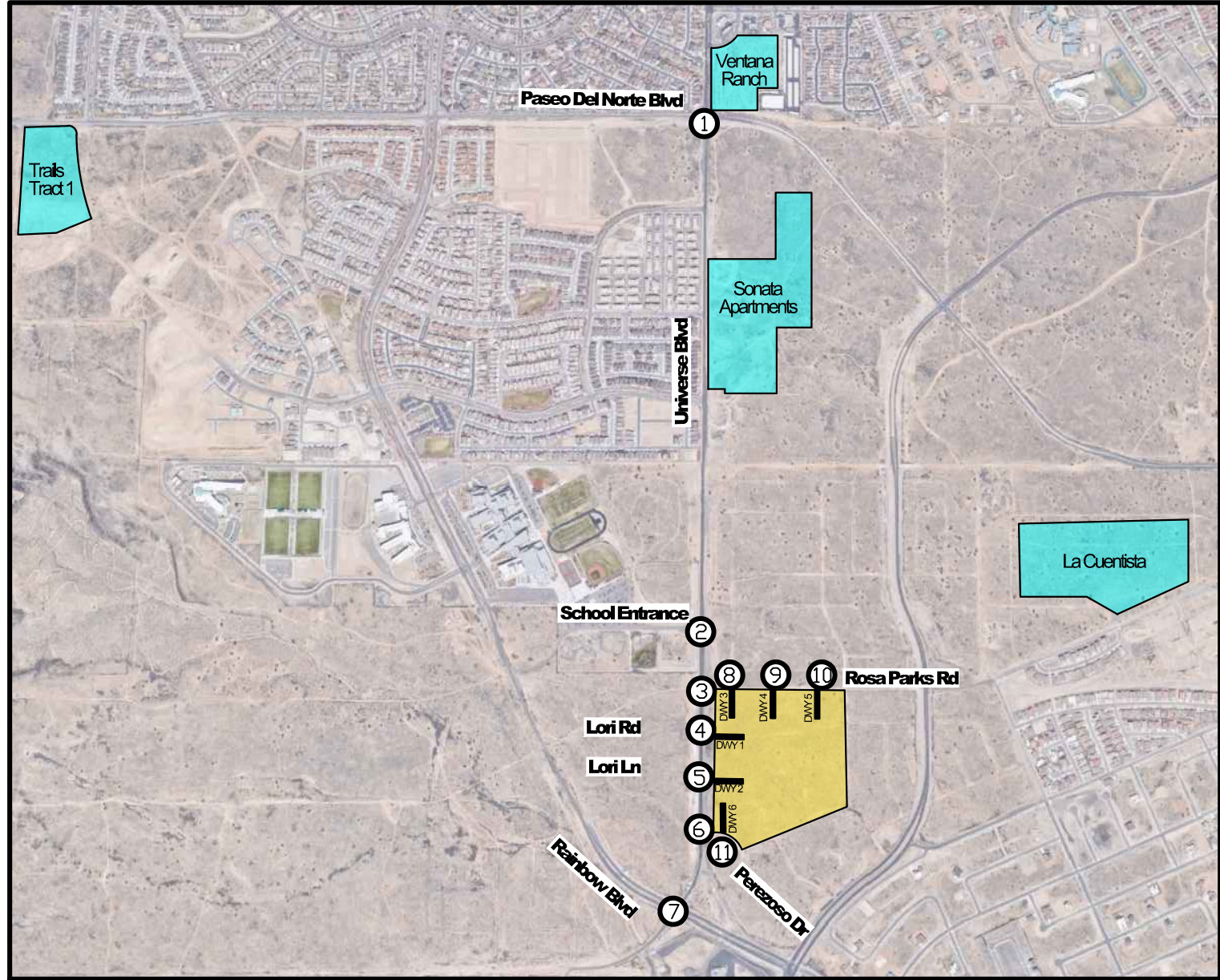


NOT TO SCALE

0 (0) 0 (0) 0 (0) 0.7 % (0) 0 (0.7 %) 0 (4.5 %) 0 (36.0 %) 0 (0) 1	0 (0) 0 (0) 0 (0) 4.2 % (0) 0 (4.2 %) 0 (53.7 %) 0 (0) 2	0 (0) 0 (0) 0 (0) 14.5 % (0) 43.4 % (0) 0 (14.5 %) 10.5 % (0) 0 (43.4 %) 0 (10.5 %) 3
14.5 % (10.5 %) 0 (0) 0 (0) 10.5 % (14.5 %) 0 (0) 4	0 (10.5 %) 0 (14.5 %) 0 (31.6 %) 10.5 % (0) 31.6 % (0) 5	0 (42.1 %) 0 (0) 0 (0) 42.1 % (0) 0 (0) 6
0 (0.1 %) 0 (0.2 %) 0 (41.8 %) 0.1 % (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0.2 % (0) 0 (0) 7	54.0 % (0) 0 (0) 0 (0) 54.0 % (0) 0 (0) 8	27.0 % (0) 27.0 % (0) 0 (27.0 %) 0 (0) 0 (0) 9
0 (0) 0 (0) 0 (0) 27.0 % (0) 0 (27.0 %) 0 (0) 10	0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 11	

**Universe View Subdivision
AM Peak Hour Percent Distribution
for Proposed Townhomes**

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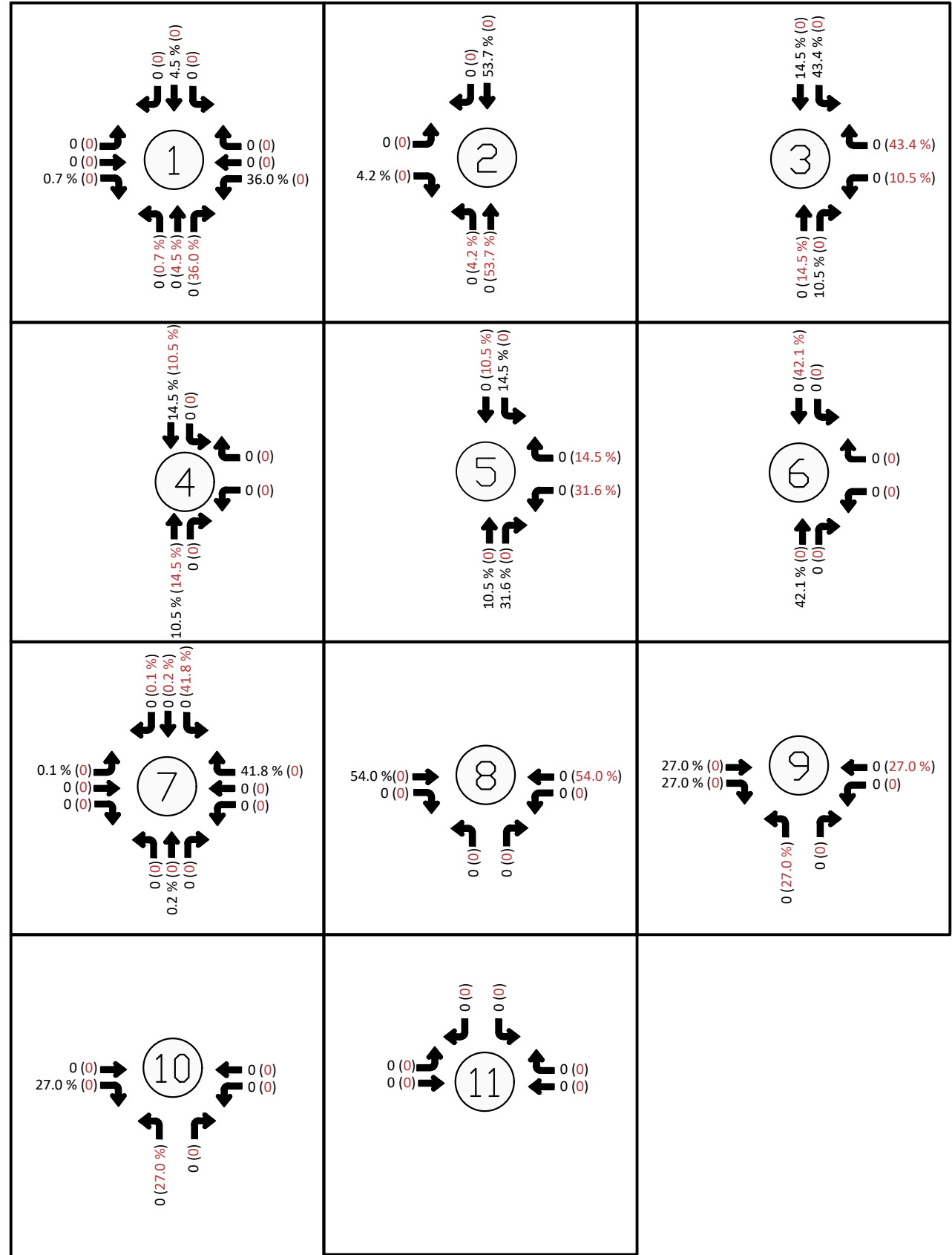


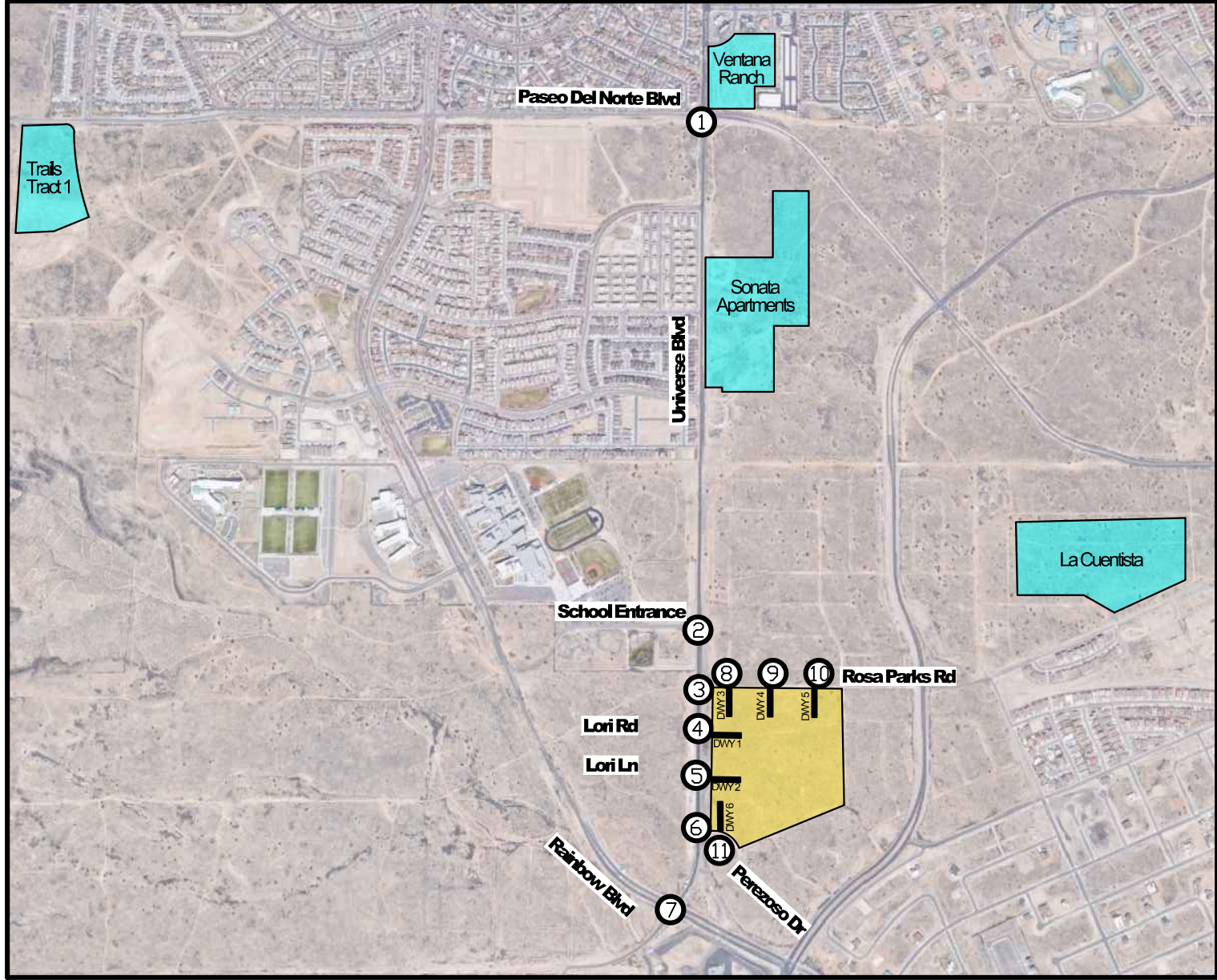
Legend

- # INTERSECTION NUMBER
- # (#) ENTERING (EXITING)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY



NOT TO SCALE





Legend

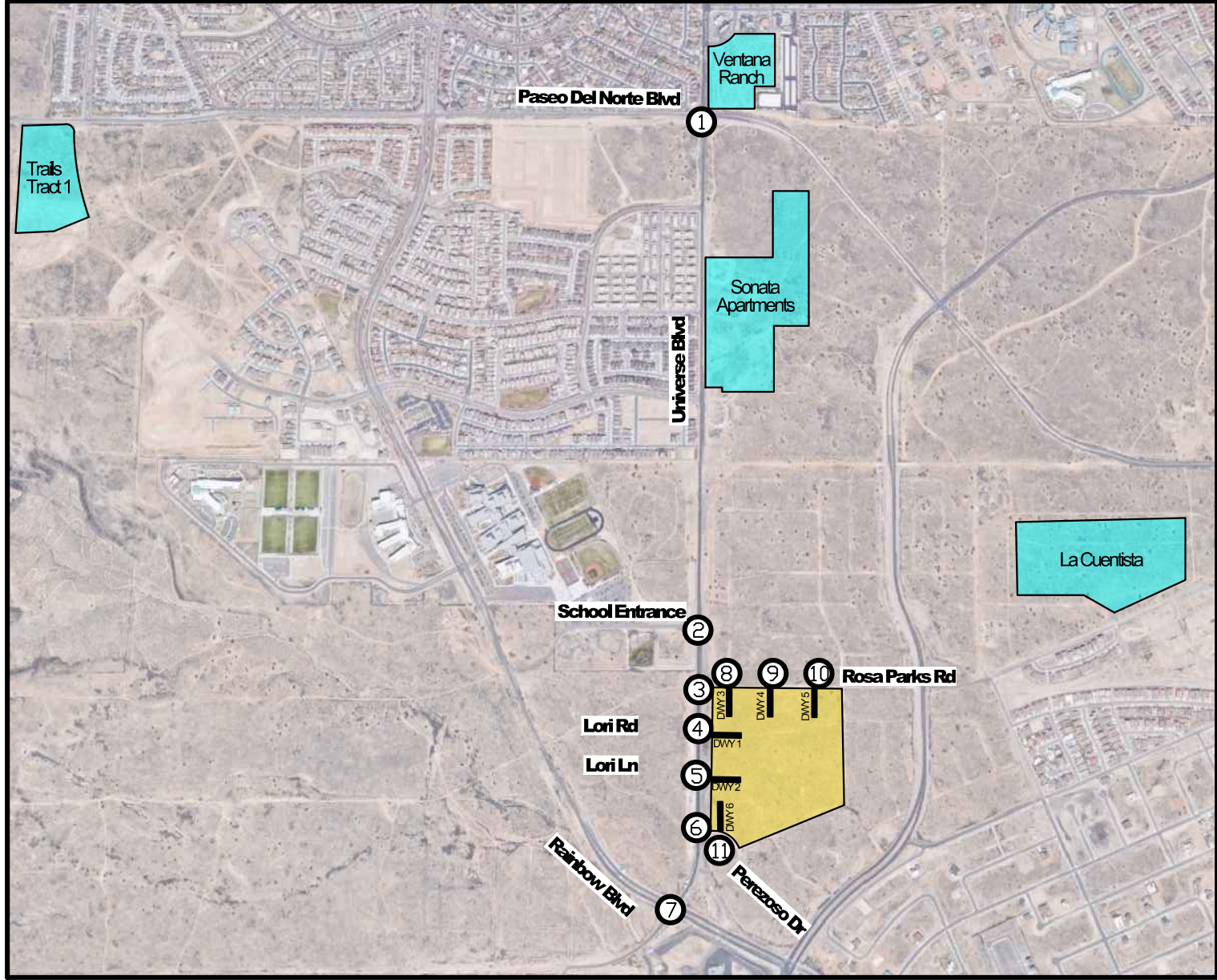
- # INTERSECTION NUMBER
- # (#) ENTERING (EXITING)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY



NOT TO SCALE

0 (0) 0 (0) 1 (0) 0 (1) 0 (1) 0 (20) 1	0 (0) 0 (0) 1 (0) 0 (2) 0 (30) 2	0 (0) 3 (0) 11 (0) 0 (8) 3 (0) 3
3 (6) 0 (0) 0 (0) 3 (8) 0 (0) 4	0 (6) 0 (3) 0 (0) 3 (0) 7 (0) 5	0 (23) 0 (0) 0 (0) 10 (0) 0 (0) 6
0 (1) 0 (1) 0 (21) 1 (0) 0 (0) 0 (0) 0 (0) 1 (0) 0 (0) 7	14 (0) 0 (0) 0 (0) 0 (0) 8	7 (0) 7 (0) 0 (15) 0 (0) 9
0 (0) 15 (0) 0 (15) 0 (0) 10	0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 11	

Universe View Subdivision
AM Peak Hour Generated Trips
for Proposed Townhomes



Legend

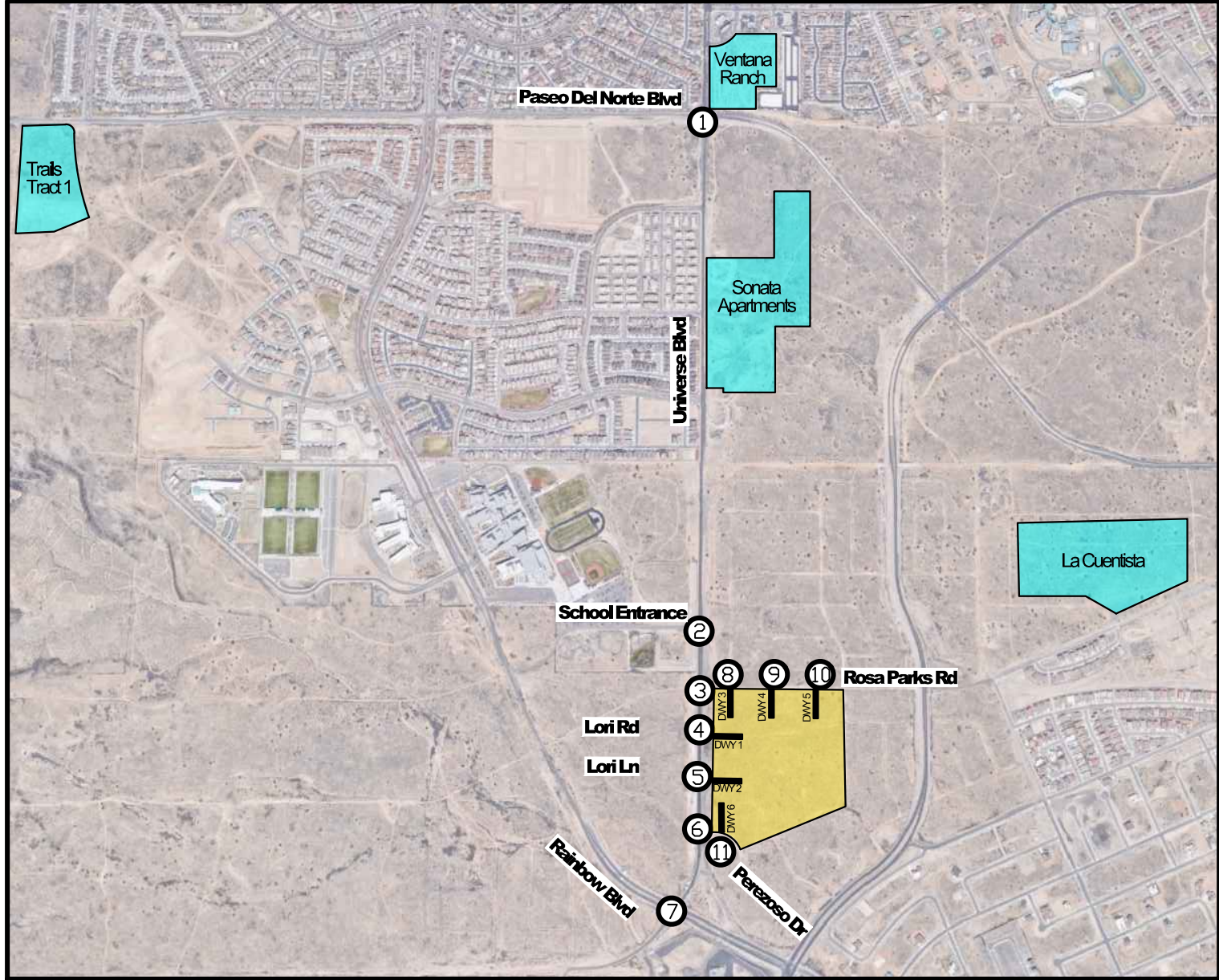
- # INTERSECTION NUMBER
- # (#) ENTERING (EXITING)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY



NOT TO SCALE

0 (0) 0 (0) 1 (0) 0 (1) 0 (1) 0 (14) 0 (0) 0 (0) 18 (0) 1	0 (0) 2 (0) 0 (2) 0 (21) 0 (0) 28 (0) 2	0 (6) 6 (0) 0 (6) 22 (0) 0 (17) 0 (4) 3
6 (6) 0 (0) 8 (4) 0 (0) 0 (0) 0 (0) 4	6 (0) 17 (0) 0 (4) 8 (0) 0 (6) 0 (13) 5	23 (0) 0 (0) 0 (17) 0 (0) 0 (0) 0 (0) 6
1 (0) 0 (0) 0 (0) 0 (1) 0 (1) 0 (15) 0 (0) 2 (0) 0 (0) 7	28 (0) 0 (0) 0 (0) 0 (0) 0 (21) 0 (0) 8	14 (0) 14 (0) 0 (11) 0 (0) 0 (10) 0 (0) 9
0 (0) 14 (0) 0 (10) 0 (0) 0 (0) 0 (0) 10	0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 11	

Universe View Subdivision
PM Peak Hour Generated Trips
for Proposed Townhomes

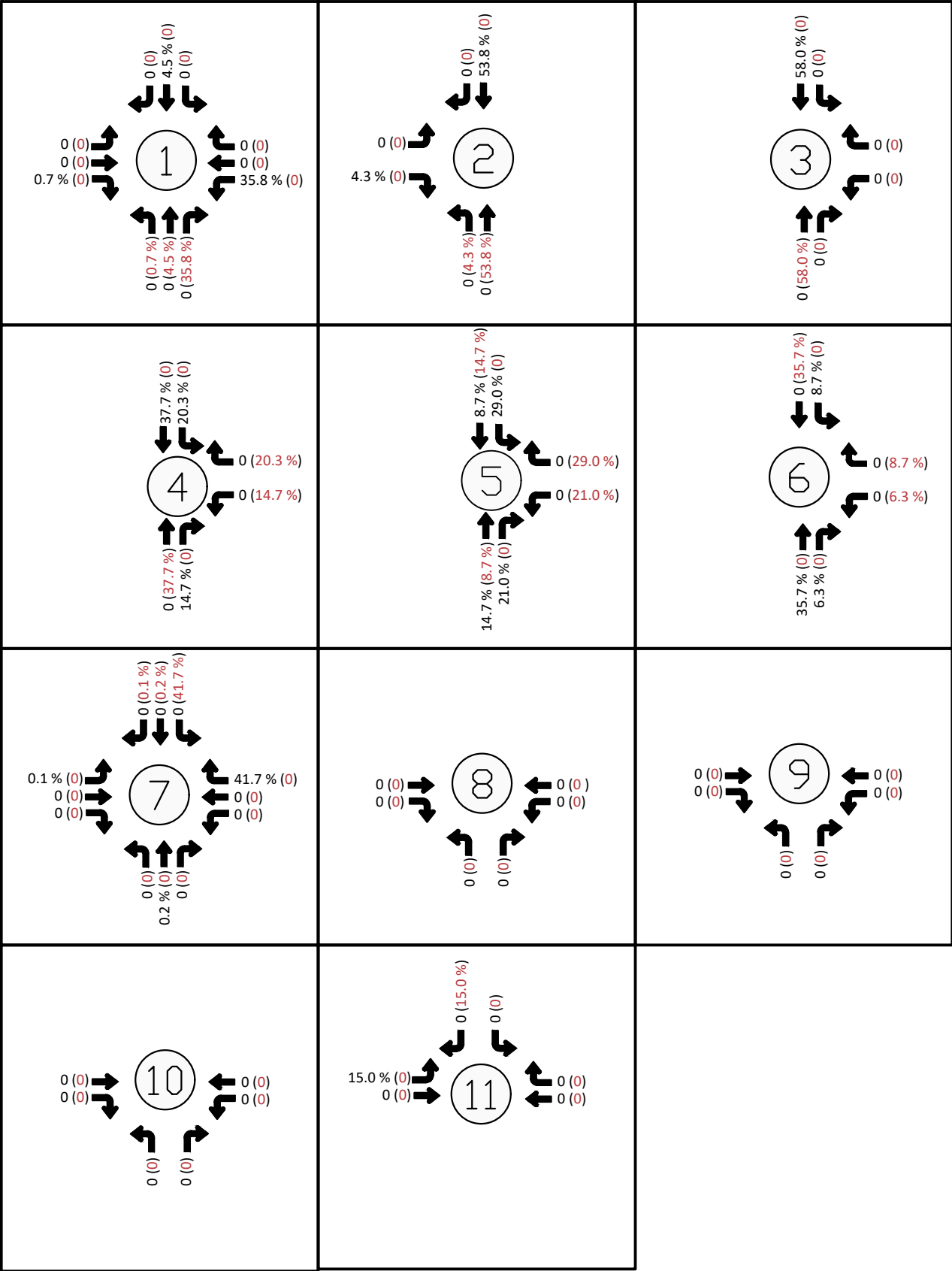


Legend

- # INTERSECTION NUMBER
- # (#) ENTERING (EXITING)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY

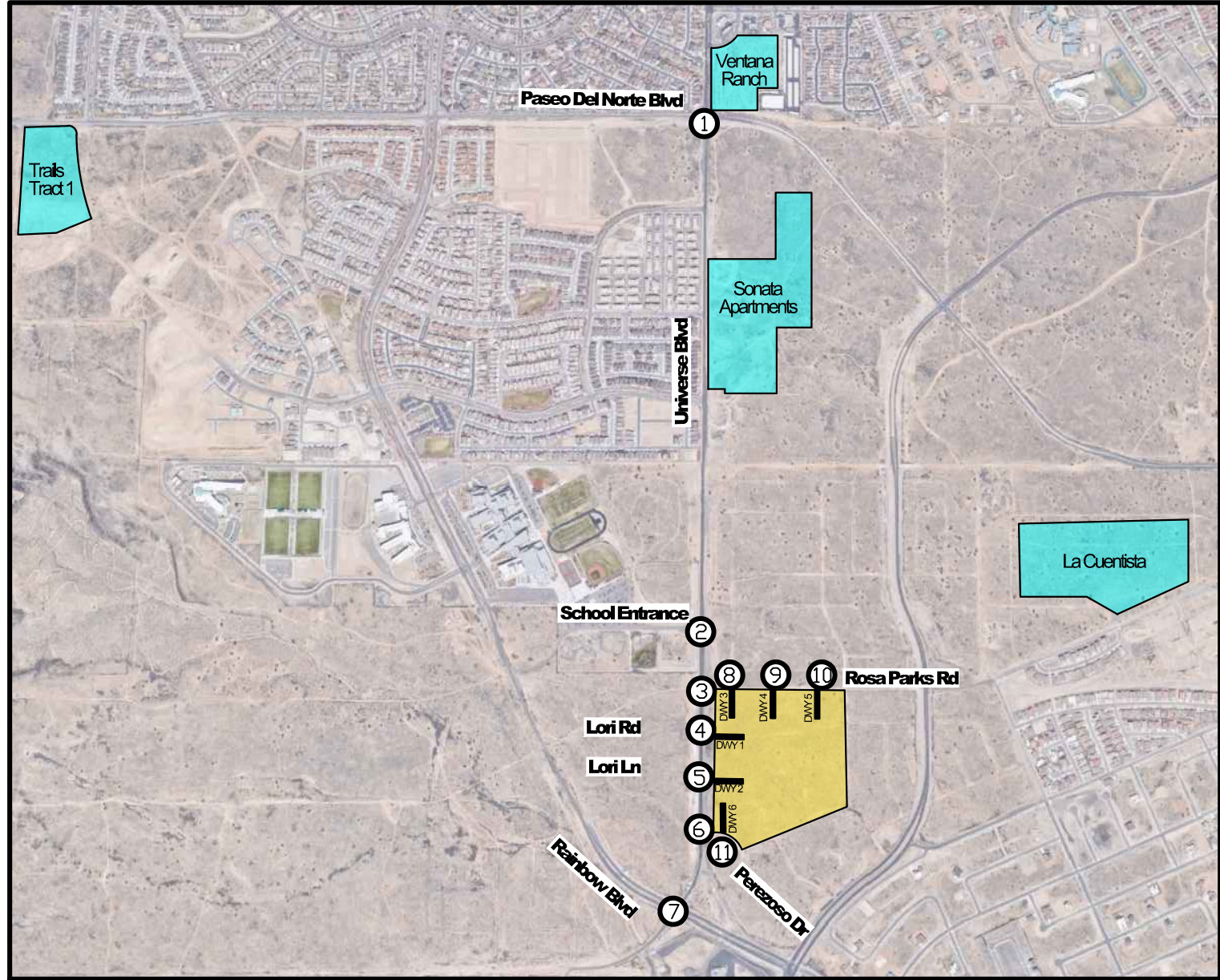


NOT TO SCALE



**Universe View Subdivision
AM Peak Hour Percent Distribution
for Proposed Apartments**

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Legend

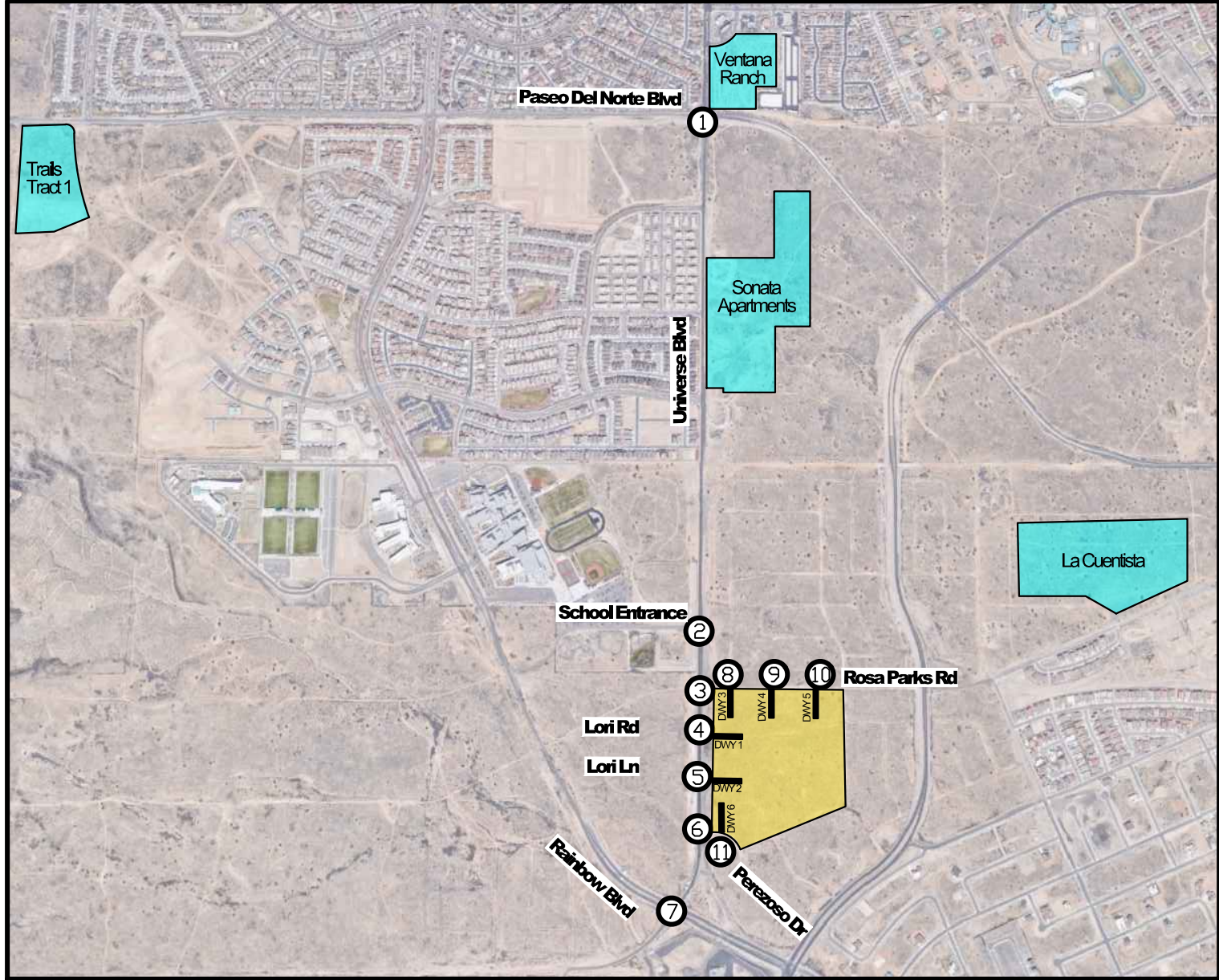
- # INTERSECTION NUMBER
- # (#) ENTERING (EXITING)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY



NOT TO SCALE

0 (0) 0 (0) 1 (0) 0 (1) 0 (3) 0 (21) 1 0 (0) 0 (0) 0 (0) 0 (0) 6 (0)	0 (0) 1 (0) 0 (3) 0 (33) 2 0 (0) 0 (0)	0 (0) 11 (0) 0 (0) 0 (36) 0 (0) 3 0 (0) 0 (0)
0 (23) 3 (0) 4 0 (13) 0 (9)	0 (2) 7 (4) 0 (0) 3 (5) 4 (0) 5 0 (18) 0 (13)	0 (0) 2 (2) 0 (0) 7 (0) 1 (0) 6 0 (5) 0 (4)
0 (0) 0 (1) 0 (1) 0 (24) 1 (0) 0 (0) 0 (0) 7 6 (0) 0 (0) 0 (0) 0 (0) 1 (0) 0 (0)	0 (0) 0 (0) 0 (0) 0 (0) 8 0 (0) 0 (0)	0 (0) 0 (0) 0 (0) 0 (0) 9 0 (0) 0 (0)
0 (0) 0 (0) 0 (0) 0 (0) 10 0 (0) 0 (0)	3 (0) 0 (0) 0 (9) 0 (0) 11 0 (0) 0 (0)	

Universe View Subdivision AM Peak Hour Generated Trips for Proposed Apartments



Legend

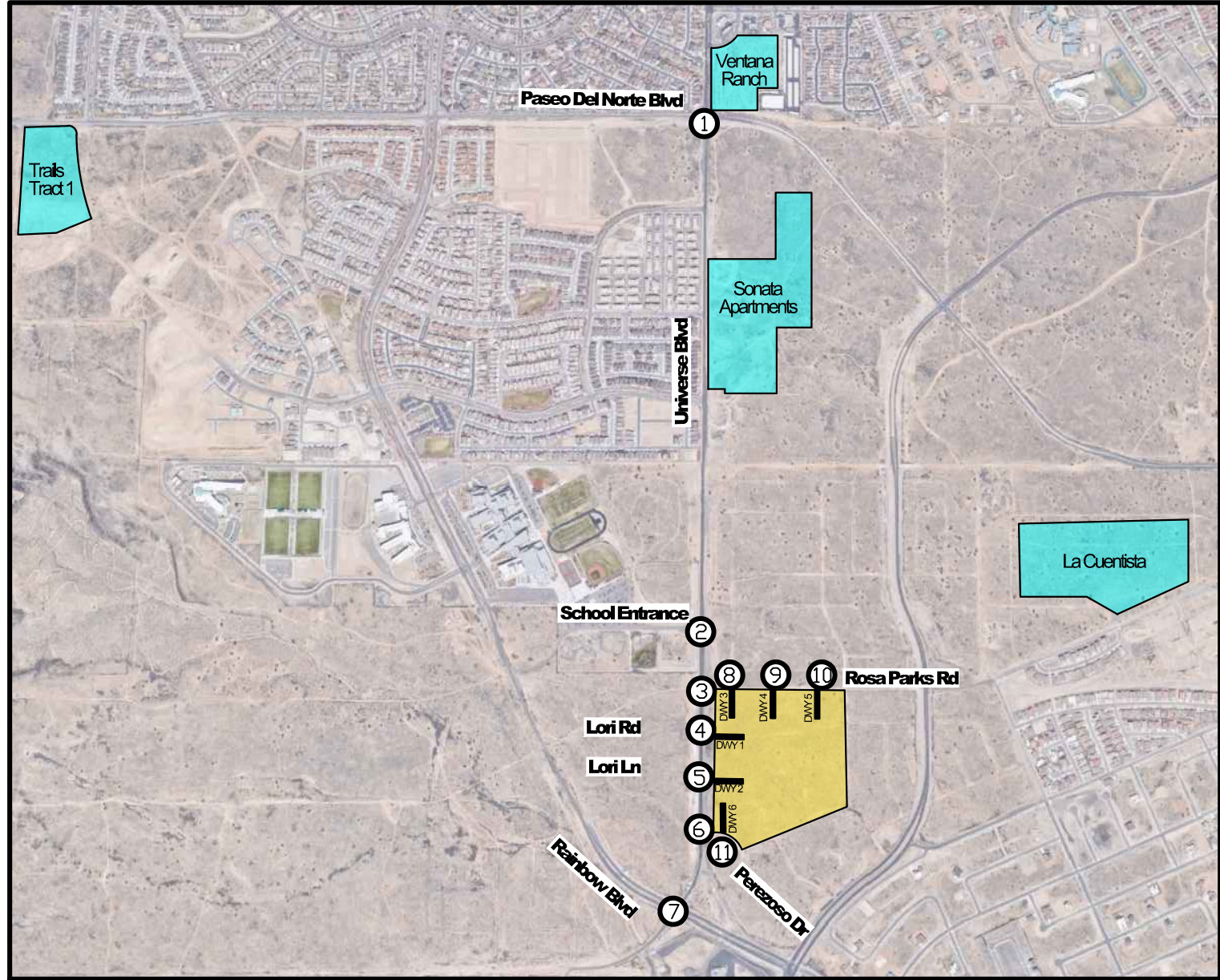
- # INTERSECTION NUMBER
- # (#) ENTERING (EXITING)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY



NOT TO SCALE

0 (0) 0 (0) 1 (0) 0 (1) 0 (1) 0 (10) 14 (0) 1	0 (0) 2 (0) 0 (1) 0 (16) 22 (0) 2	0 (0) 0 (0) 24 (0) 0 (0) 0 (17) 0 (0) 3
0 (15) 0 (9) 0 (6) 0 (5) 6 (0) 0 (11) 4	0 (4) 0 (11) 0 (8) 0 (6) 6 (3) 9 (0) 5	0 (11) 0 (4) 0 (3) 0 (1) 15 (0) 3 (0) 6
0 (1) 0 (1) 0 (10) 1 (0) 0 (0) 0 (0) 16 (0) 0 (0) 0 (0) 0 (0) 1 (0) 0 (0) 7	0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 8	0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 9
0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 10	0 (4) 0 (0) 0 (0) 0 (0) 7 (0) 0 (0) 11	

Universe View Subdivision
PM Peak Hour Generated Trips
for Proposed Apartments

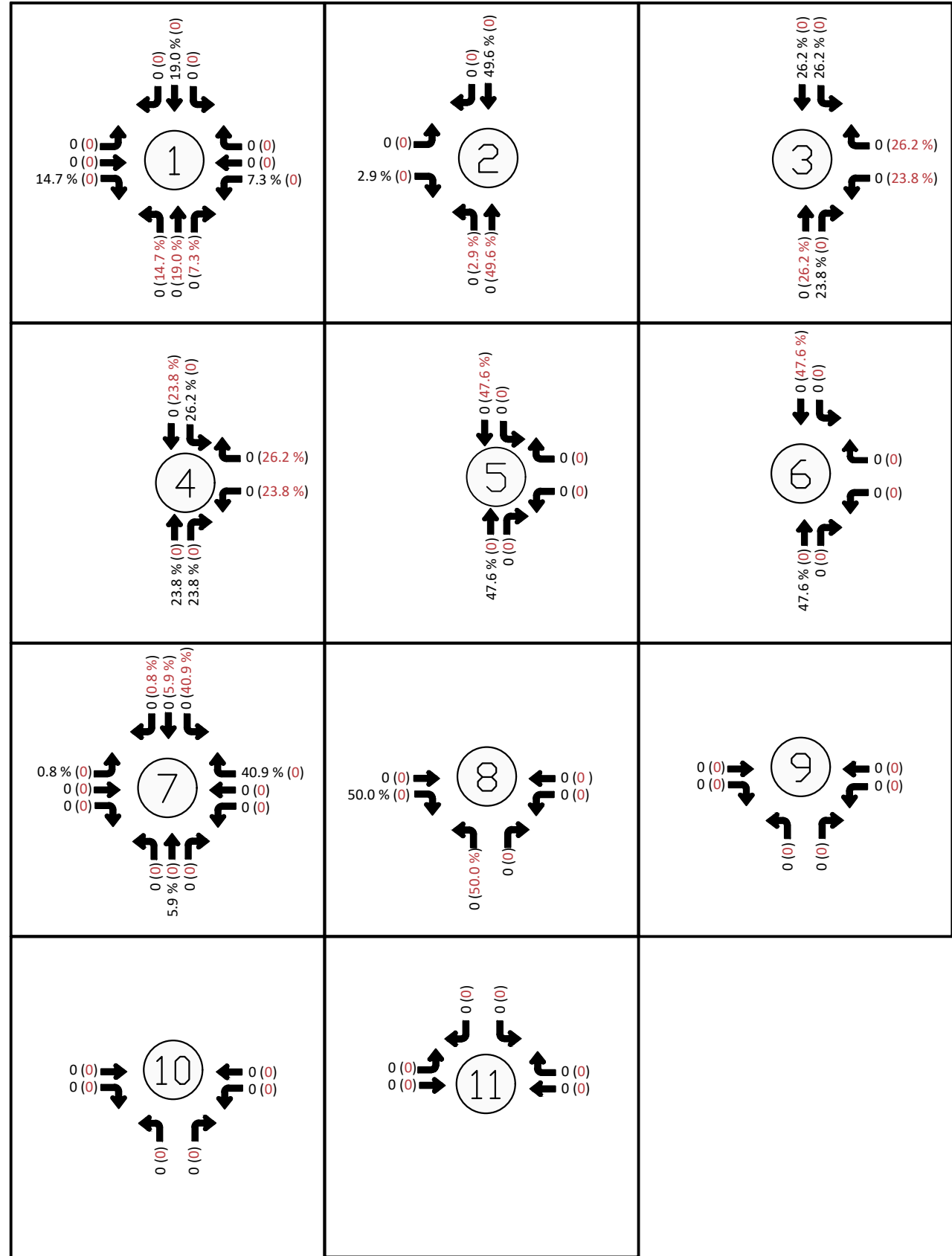


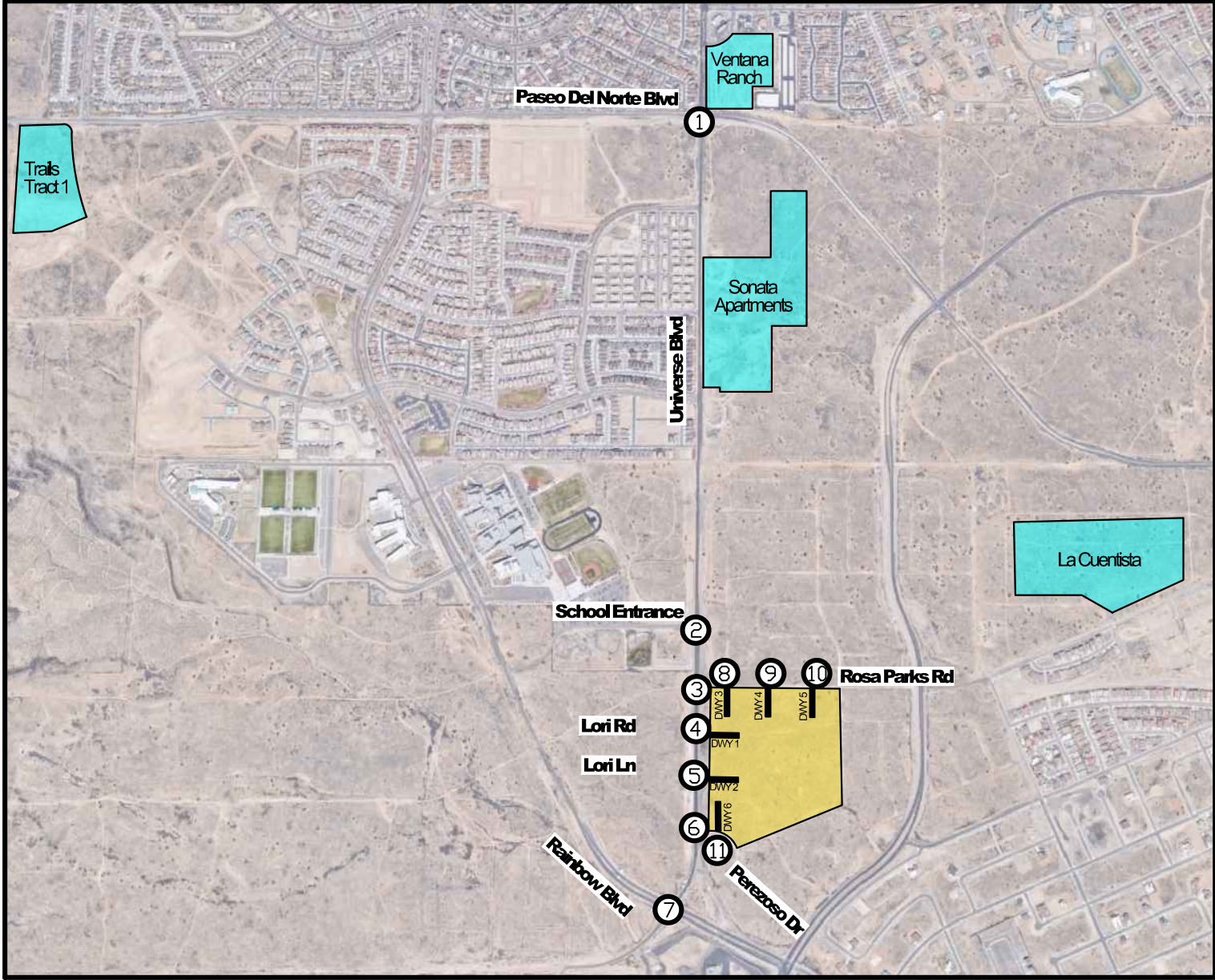
Legend

- # INTERSECTION NUMBER
- # (#) ENTERING (EXITING)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY



NOT TO SCALE





Legend

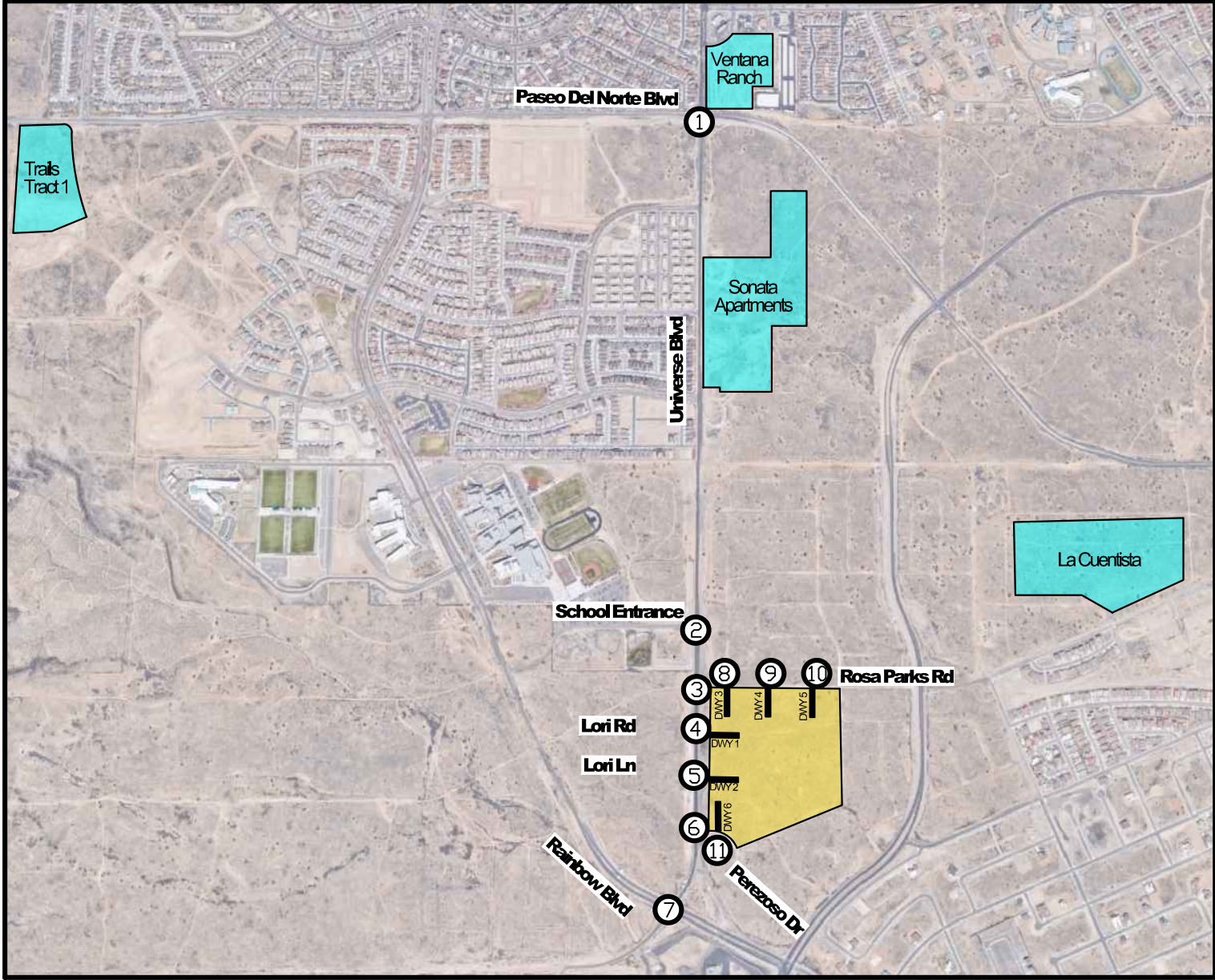
- # INTERSECTION NUMBER
- # (#) ENTERING (EXITING)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY



NOT TO SCALE

0 (0) 0 (0) 2 (0) 0 (0) 3 (0) 0 (0) 0 (0) 1 (0) 0 (0) 1	0 (0) 0 (0) 1 (0) 0 (0) 7 (0) 0 (0) 0 (0) 0 (2) 0 (0) 2	0 (-2) 0 (6) 0 (0) 0 (0) 0 (0) 0 (4) 0 (0) 0 (4) 0 (4) 3
0 (0) 0 (0) 6 (0) 0 (0) 0 (0) 0 (4) 0 (0) 0 (4) 0 (4) 4	0 (0) 0 (4) 0 (0) 0 (0) 6 (0) 0 (0) 6 (0) 0 (0) 0 (0) 5	0 (6) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 6
1 (0) 0 (0) 0 (0) 0 (0) 0 (1) 0 (3) 0 (0) 0 (0) 0 (0) 7	0 (0) 0 (0) 12 (0) 0 (0) 0 (0) 0 (0) 0 (8) 0 (0) 0 (0) 8	0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 9
0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 10	0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 11	

Universe View Subdivision
AM Peak Hour Generated Trips
for Proposed Commercial Building

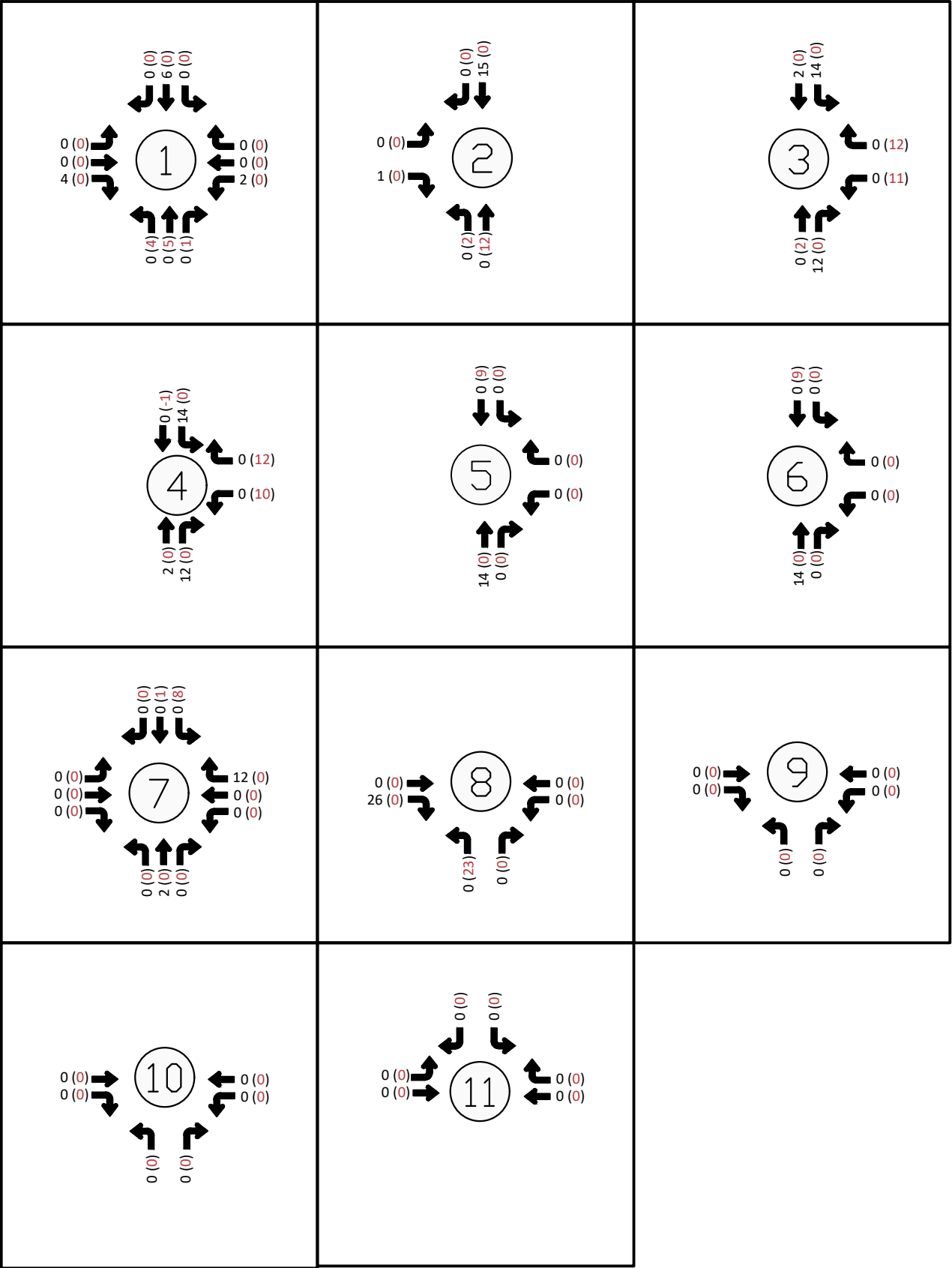


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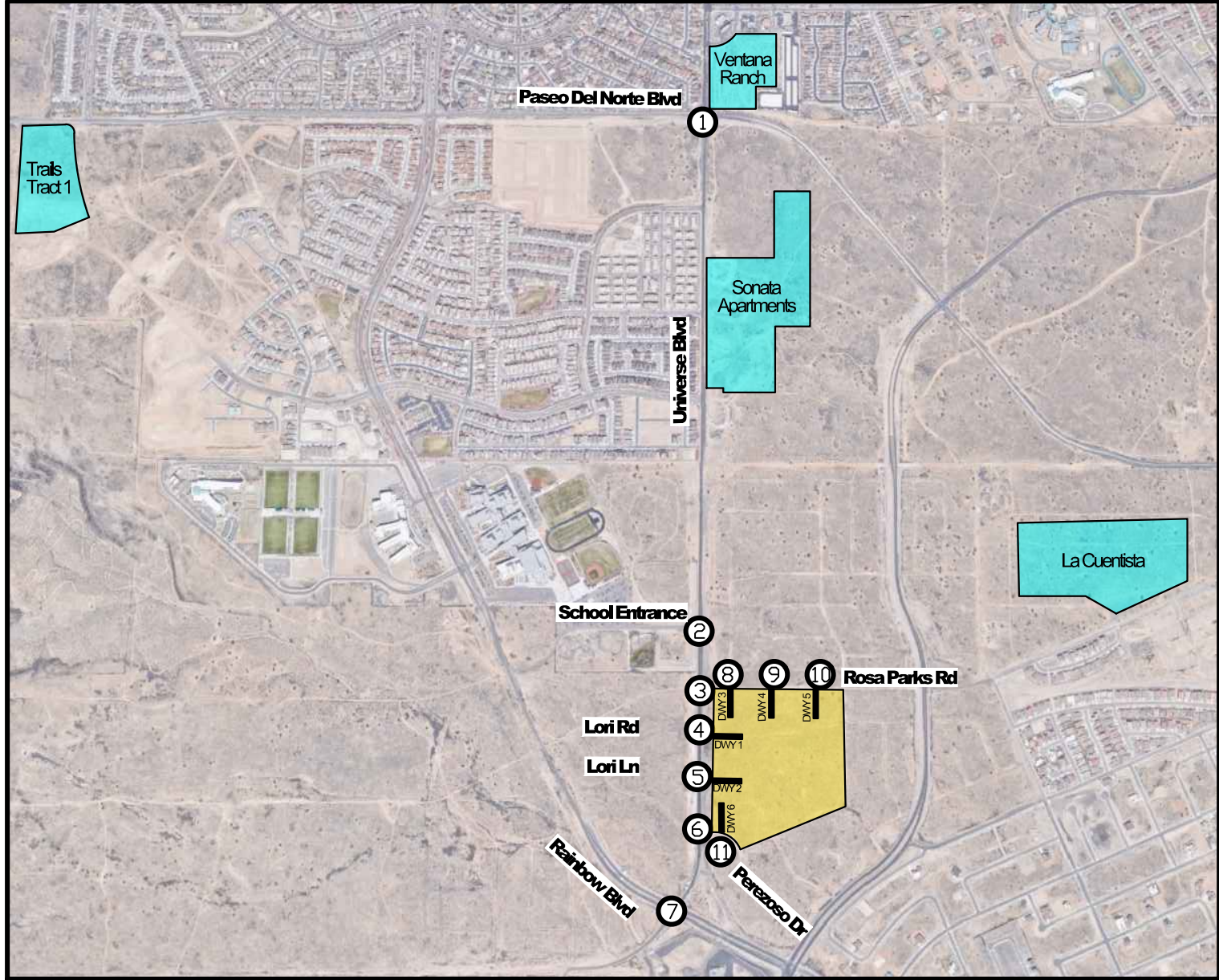
- # INTERSECTION NUMBER
- # (#) ENTERING (EXITING)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY



NOT TO SCALE



Universe View Subdivision
PM Peak Hour generated Trips
for Proposed Commercial Building



Legend

- # INTERSECTION NUMBER
- # (#) ENTERING (EXITING)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY

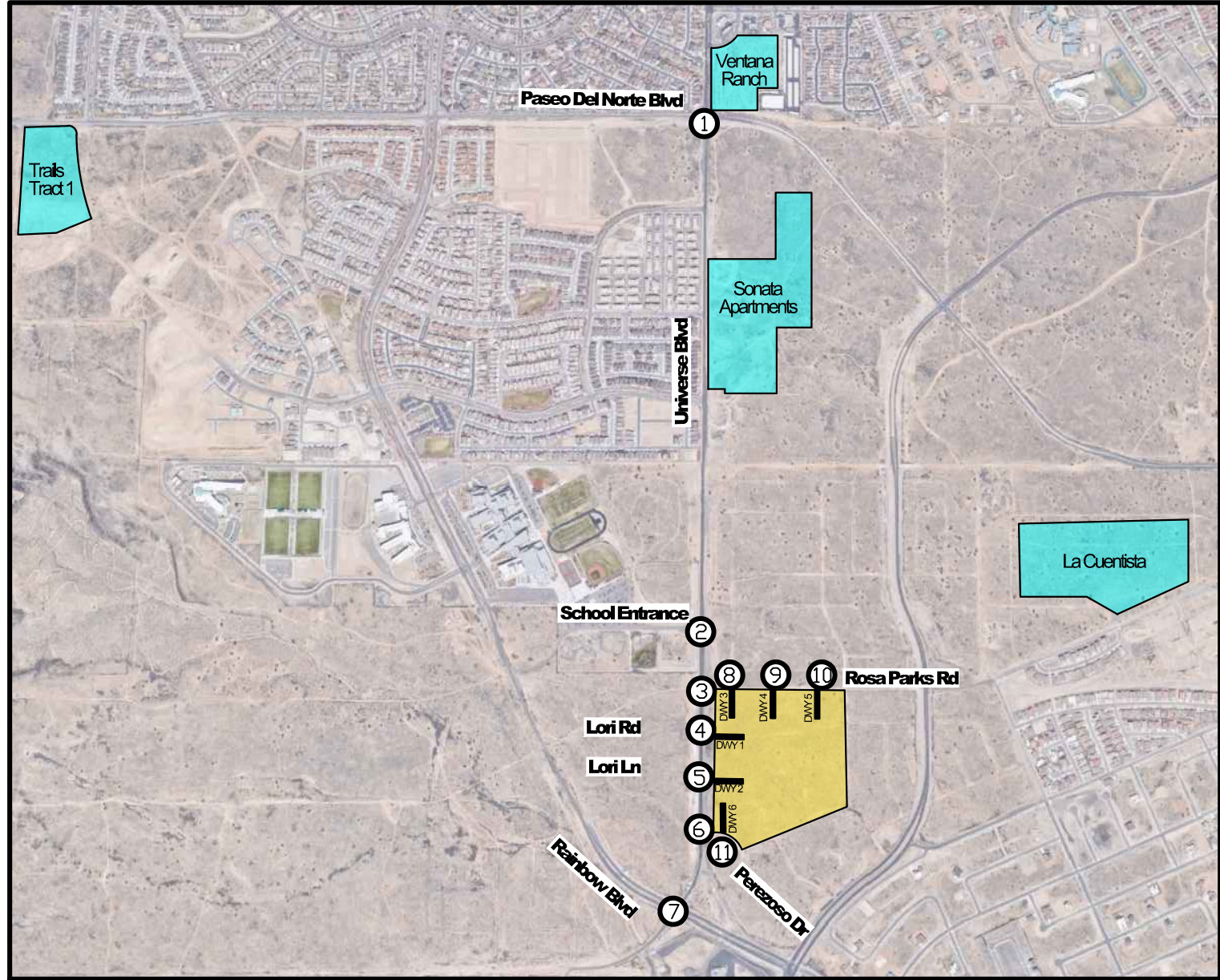


NOT TO SCALE

1 0 (0) 0 (0) 0 (0) 14.7 % (0) 0 (14.7 %) 0 (49.0 %) 0 (7.3 %) 0 (0) 0 (0) 0 (0) 7.3 % (0)	2 0 (0) 0 (0) 2.9 % (0) 0 (2.9 %) 0 (49.6 %) 0 (0) 0 (0) 49.6 % (0)	3 0 (0) 0 (0) 26.2 % (0) 26.2 % (0) 0 (26.2 %) 23.8 % (0) 0 (23.8 %) 0 (0)
4 0 (0) 0 (0) 23.8 % (0) 23.8 % (0) 0 (23.8 %) 0 (26.2 %) 0 (0) 0 (0) 26.2 % (0)	5 0 (0) 0 (0) 47.6 % (0) 0 (0) 0 (0) 0 (0) 47.6 % (0) 0 (0) 0 (0) 0 (0)	6 0 (0) 0 (0) 47.6 % (0) 0 (0) 0 (0) 0 (0) 47.6 % (0) 0 (0) 0 (0) 0 (0)
7 0 (0) 0 (0) 0.8 % (0) 0 (0) 0 (0) 0 (0) 0 (0) 5.9 % (0) 0 (0) 0 (0) 0 (0) 40.9 % (0) 0 (0) 0 (0)	8 0 (0) 0 (0) 50.0 % (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0)	9 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0)
10 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0)	11 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0)	

Universe View Subdivision
AM Peak Hour percent Distribution
for Proposed Pharmacy

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Legend

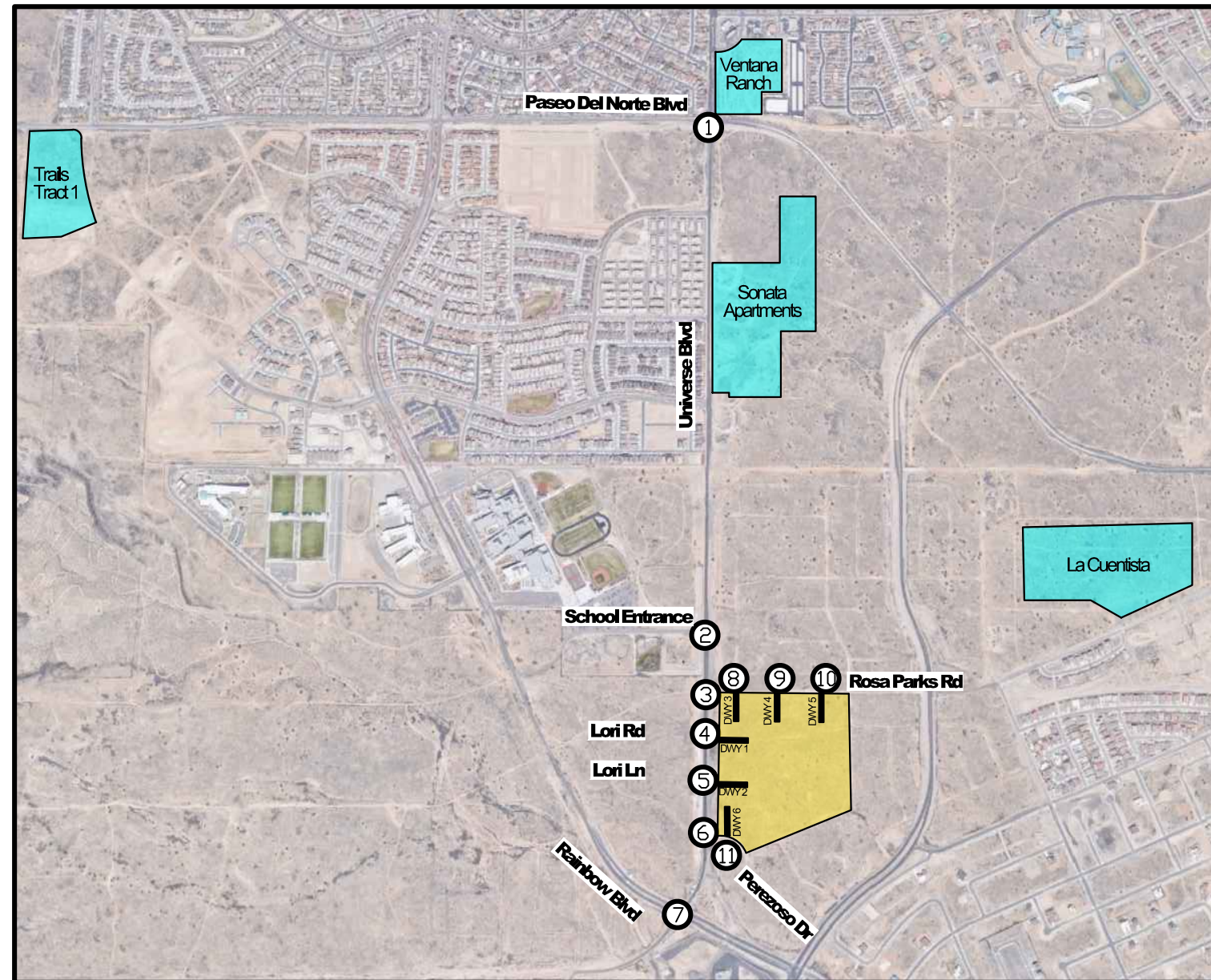
- # INTERSECTION NUMBER
- # (#) ENTERING (EXITING)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY

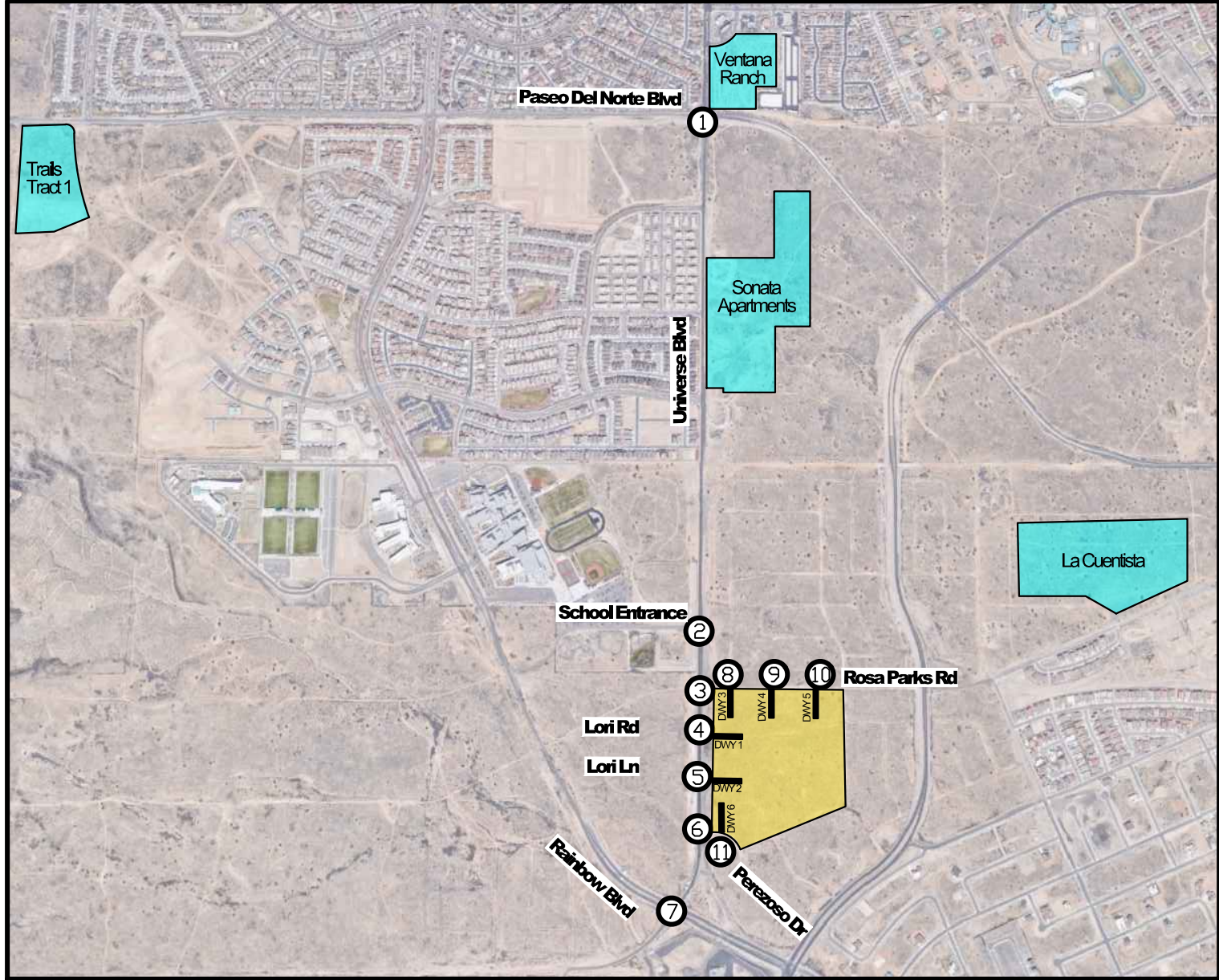


NOT TO SCALE

1 0 (0) 0 (0) 0 (0) 14.7 % (0) 0 (14.7 %) 0 (49.0 %) 0 (7.3 %) 0 (0) 0 (0) 0 (0) 7.3 % (0)	2 0 (0) 0 (0) 2.9 % (0) 0 (2.9 %) 0 (49.6 %) 0 (0) 0 (0) 49.6 % (0)	3 0 (0) 0 (0) 26.2 % (0) 26.2 % (0) 0 (26.2 %) 23.8 % (0) 0 (23.8 %) 0 (0)
4 0 (0) 0 (23.8 %) 0 (26.2 %) 23.8 % (0) 23.8 % (0) 0 (26.2 %) 0 (23.8 %) 0 (0) 0 (0) 47.6 % (0) 0 (0)	5 0 (0) 0 (47.6 %) 0 (0) 0 (0) 0 (0) 0 (0) 47.6 % (0) 0 (0) 0 (0) 0 (0) 47.6 % (0) 0 (0)	6 0 (0) 0 (0) 0 (47.6 %) 0 (0) 0 (0) 0 (0) 47.6 % (0) 0 (0) 0 (0) 0 (0) 47.6 % (0) 0 (0)
7 0 (0) 0 (0.8 %) 0 (5.9 %) 0 (40.9 %) 0 (0.8 %) 0 (5.9 %) 0 (40.9 %) 0 (0) 0 (0) 0 (0) 40.9 % (0) 0 (0) 0 (0) 5.9 % (0) 0 (0)	8 0 (0) 0 (0) 50.0 % (0) 0 (0) 0 (0) 50.0 % (0) 0 (0) 0 (0) 0 (0) 50.0 % (0) 0 (0)	9 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0)
10 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0)	11 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0) 0 (0)	

Universe View Subdivision
PM Peak Hour Percent Distributions
for Proposed Pharmacy



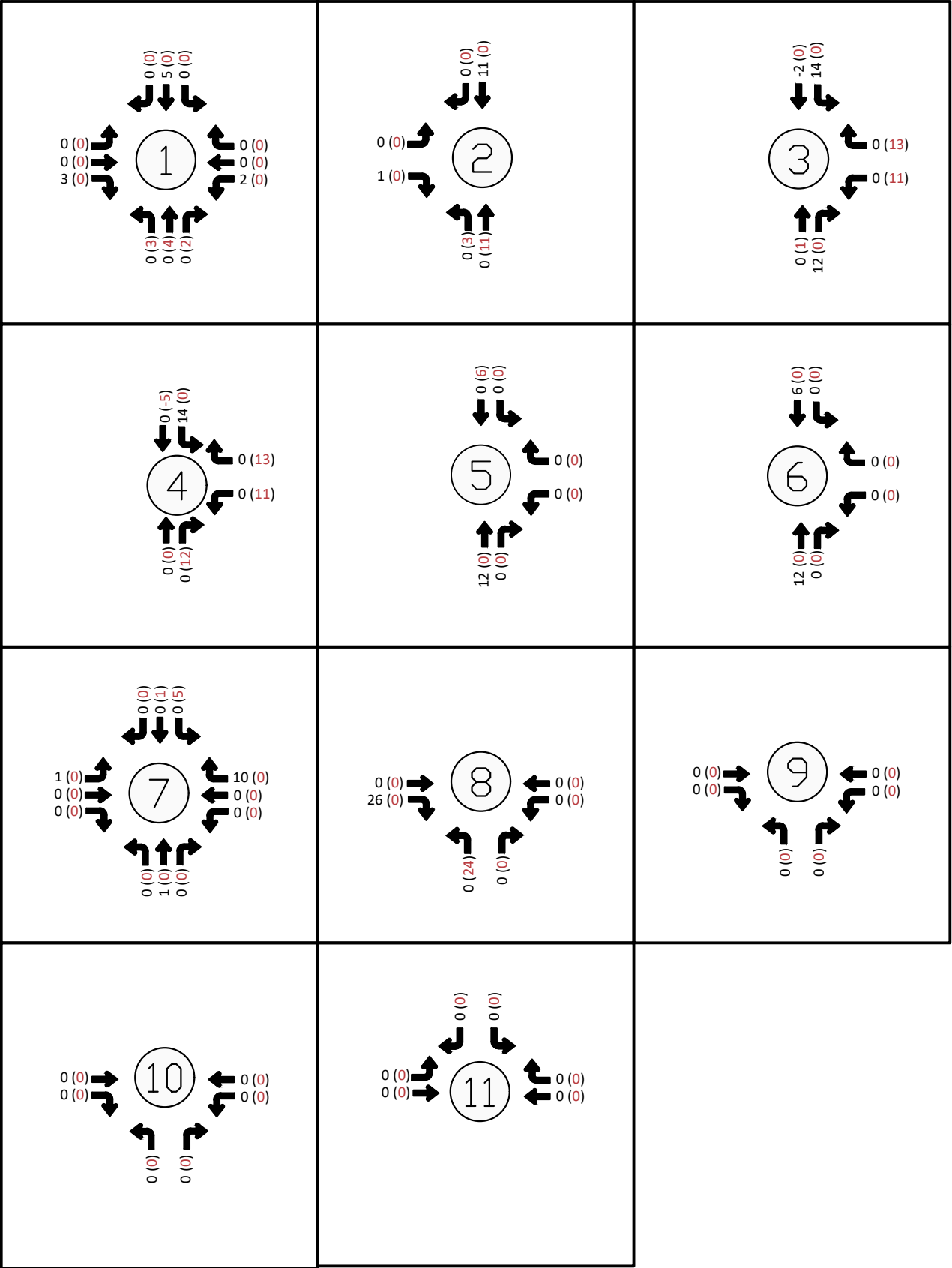


Legend

- # INTERSECTION NUMBER
- # (#) ENTERING (EXITING)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY



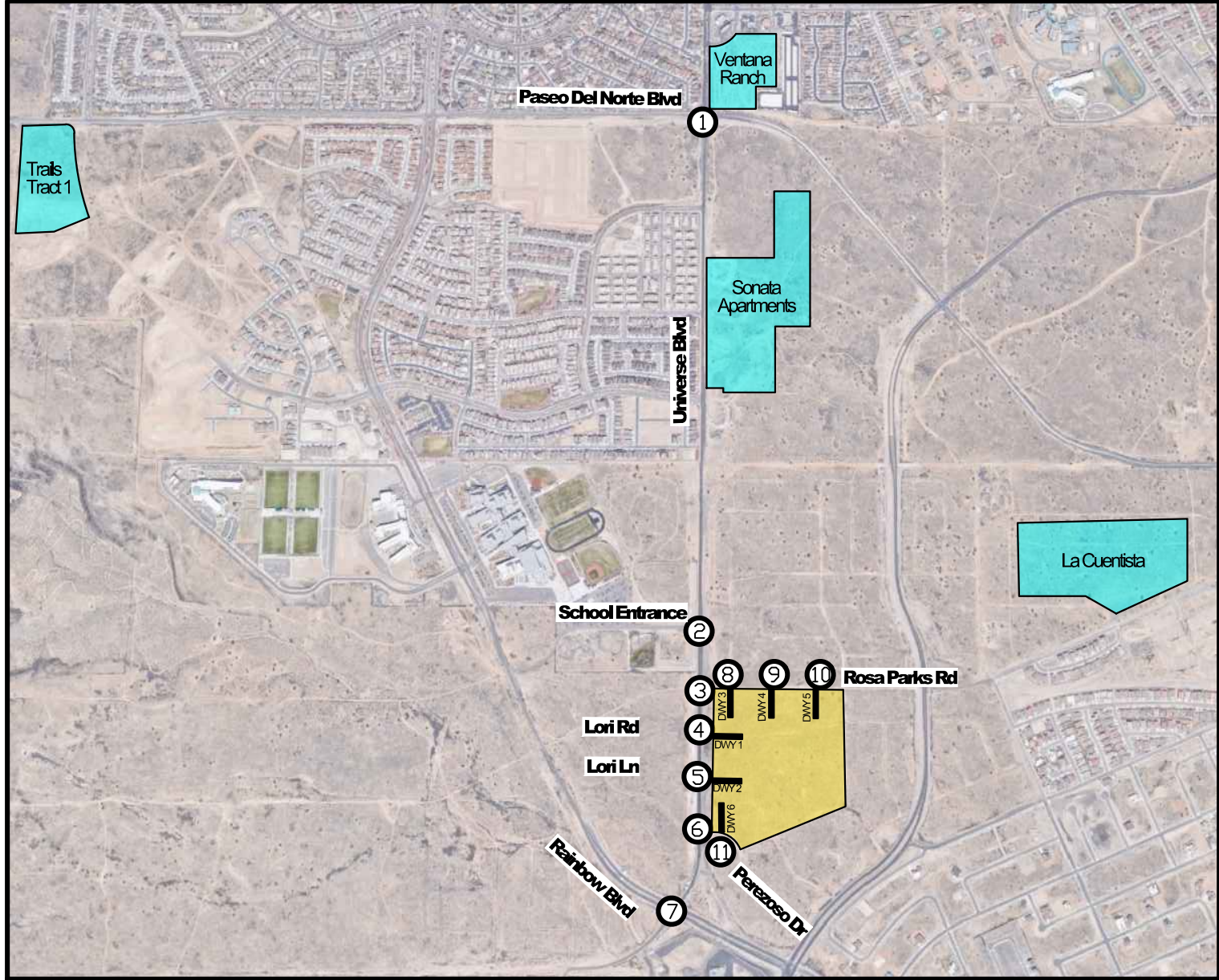
NOT TO SCALE



**Universe View Subdivision
PM Peak Hour Generated Trips
Proposed Pharmacy**

**Figure
Number
30**

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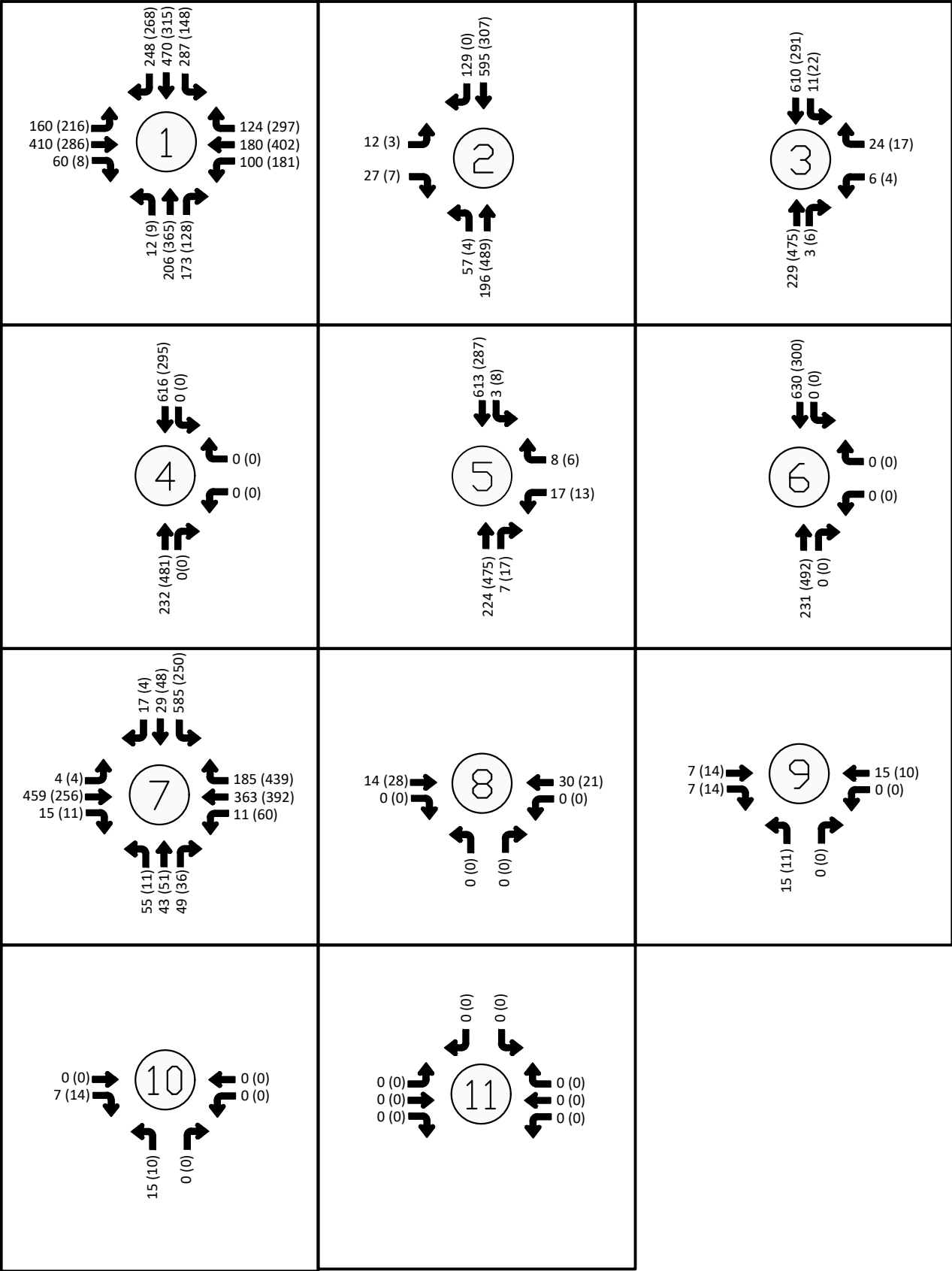


Legend

- # INTERSECTION NUMBER
- # (#) AM (PM)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY



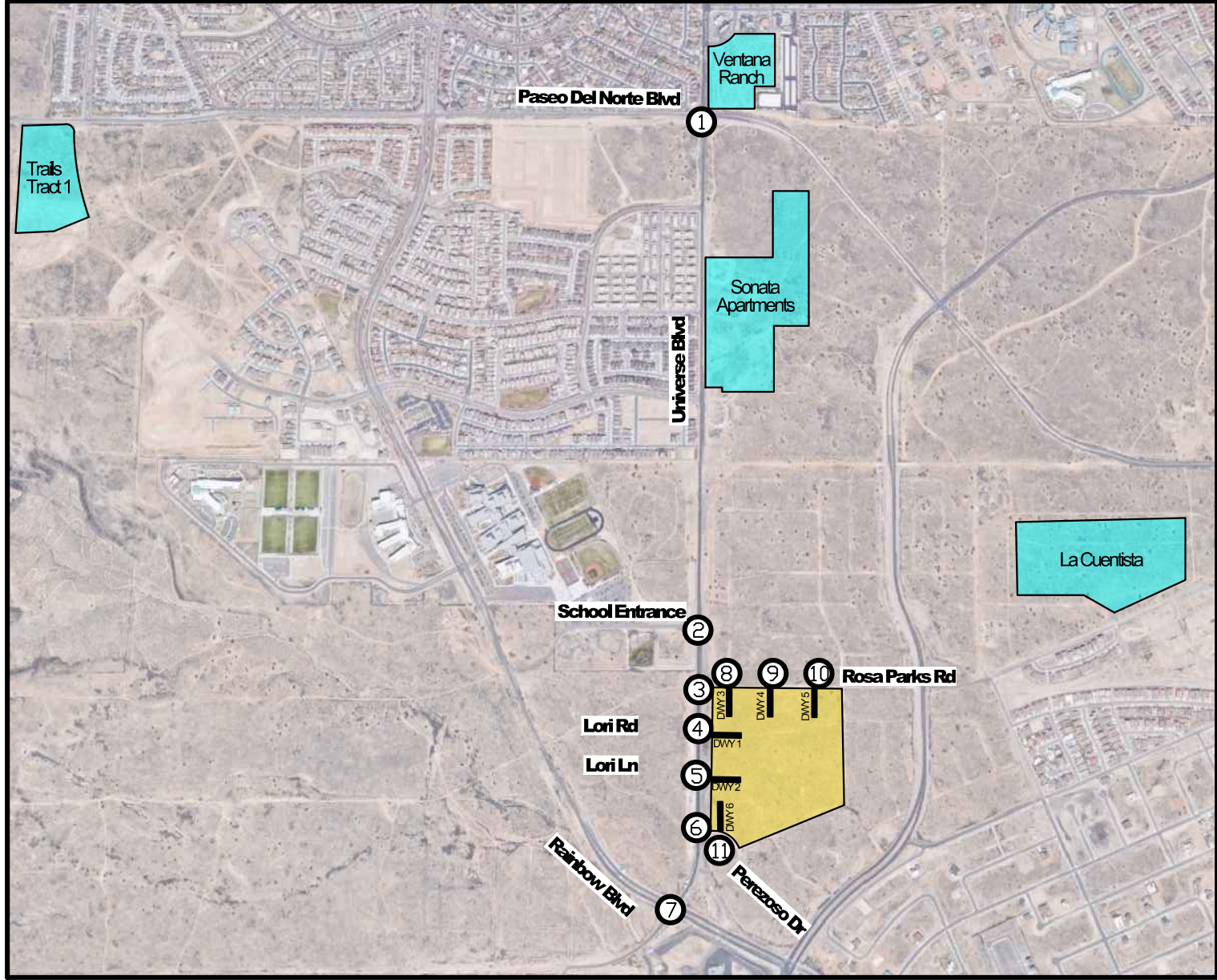
NOT TO SCALE



Universe View Subdivision
Build 2023
Turning Movement Counts

Figure
Number
31

HUITT-ZOLLARS
333 Rio Rancho Drive NE
Suite 101
Rio Rancho, New Mexico 87124
505.892.5141
Firm No. F-761
www.huitt-zollars.com

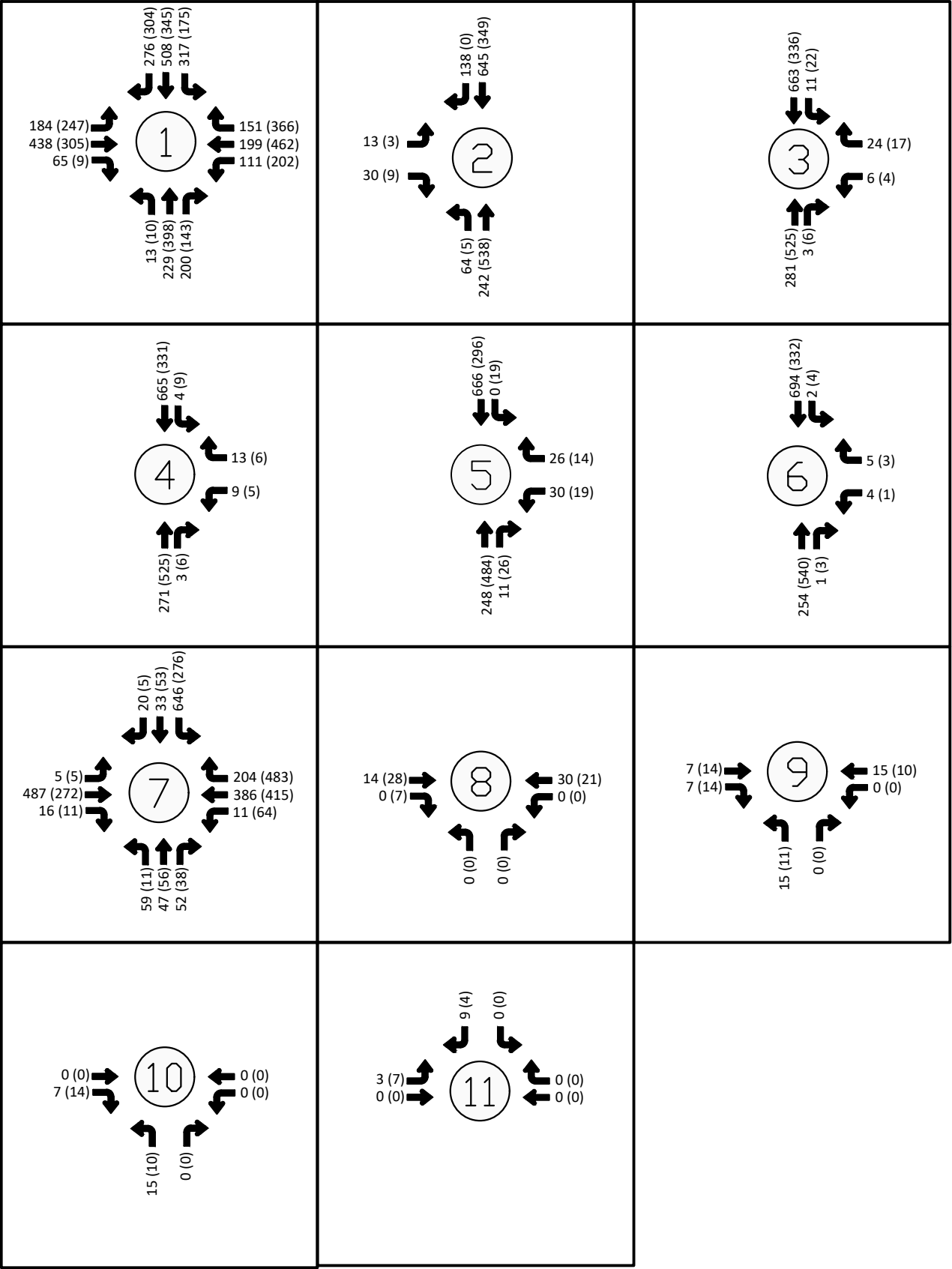


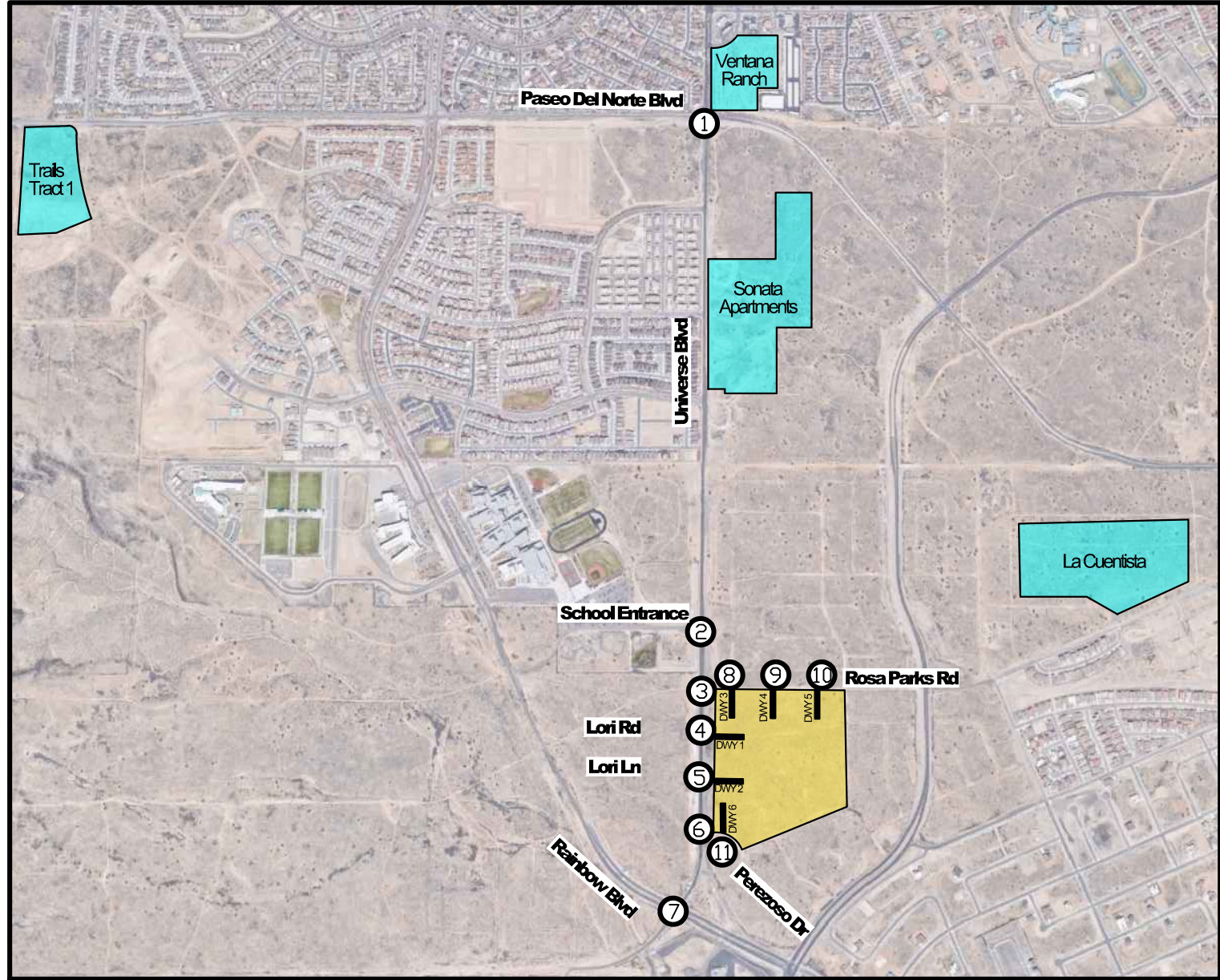
Legend

- # INTERSECTION NUMBER
- # (#) AM (PM)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY



NOT TO SCALE



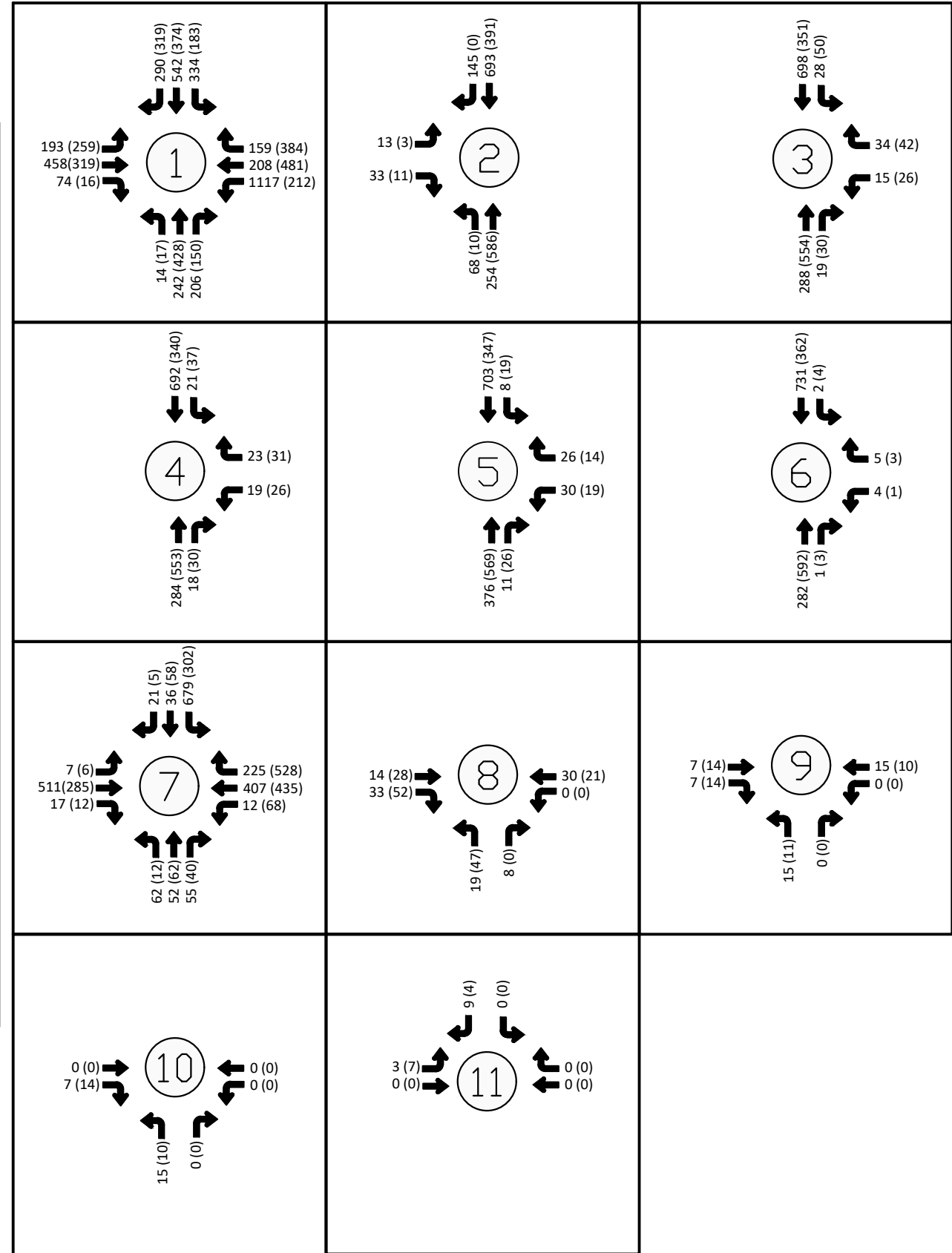


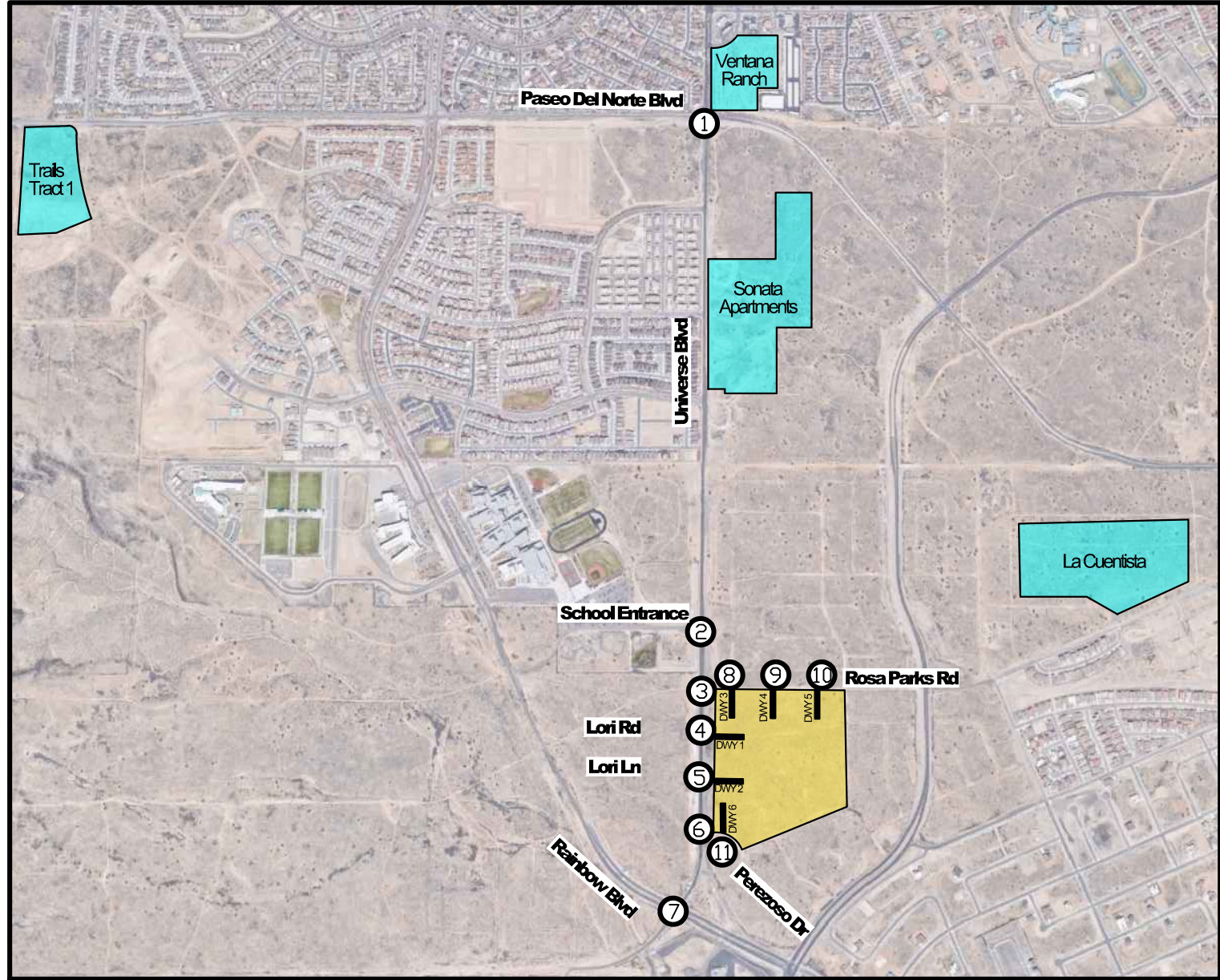
Legend

- # INTERSECTION NUMBER
- # (#) AM (PM)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY



NOT TO SCALE





Legend

- # INTERSECTION NUMBER
- # (#) AM (PM)
- VOLCANO CLIFF SUBDIVISION
- PROPOSED DEVELOPMENTS
- DWY DRIVEWAY



NOT TO SCALE

229 (308) 538 (375) 87 (17) 347 (379) 651 (446) 40 (218) 16 (19) 290 (512) 227 (168) 187 (453) 244 (558) 134 (236) 1	16 (3) 39 (12) 175 (0) 823 (452) 81 (10) 291 (690) 2	337 (657) 19 (30) 834 (414) 28 (50) 34 (42) 15 (26) 3
828 (403) 21 (37) 23 (31) 19 (26) 333 (656) 18 (30) 4	839 (410) 8 (19) 26 (14) 30 (19) 325 (672) 11 (26) 5	867 (425) 2 (4) 5 (3) 4 (1) 331 (695) 1 (3) 6
24 (5) 42 (68) 805 (353) 7 (6) 609 (338) 20 (14) 264 (620) 488 (516) 14 (82) 75 (14) 61 (73) 66 (48) 7	14 (28) 33 (52) 47 (0) 8 (0) 30 (21) 0 (0) 8	7 (14) 7 (14) 15 (11) 0 (0) 15 (10) 0 (0) 9
0 (0) 7 (14) 15 (10) 0 (0) 0 (0) 0 (0) 10	3 (7) 0 (0) 9 (4) 0 (0) 0 (0) 0 (0) 11	

**Universe View Subdivision
2033 Build
Turning Movement Counts**

HUITT-ZOLLARS
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APPENDIX C

Existing 2022 Traffic Movement Counts

Huitt-Zollars, Inc.

333 Rio Rancho Drive NW, Suite 101
Rio Rancho, NM 87124
ADVANCEDESIGN

Weather: sunny
Serial Number: TU-3082 & TU-3080
Collected By: LB & JS
Other:

File Name : COMBINED UNV-PDN_03-16-22_0
Site Code : 00000000
Start Date : 3/16/2022
Page No : 1

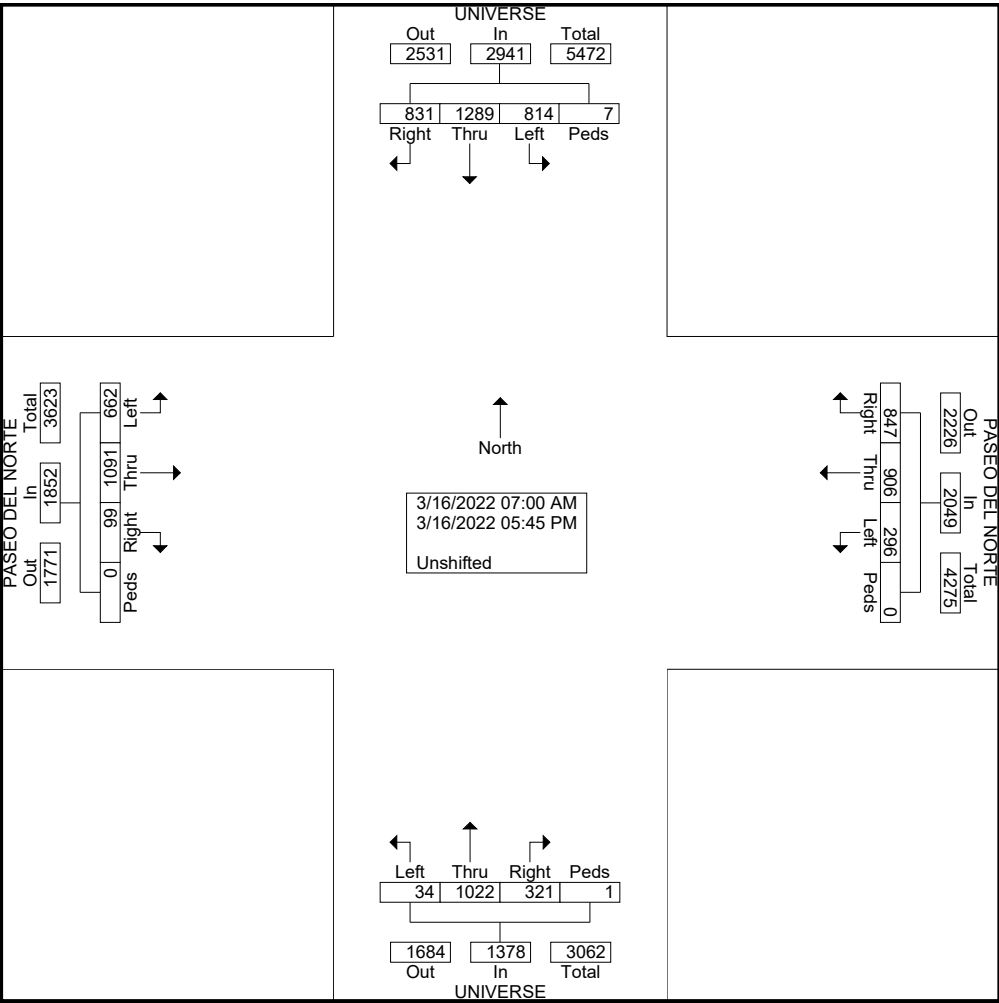
Groups Printed- Unshifted

	UNIVERSE From North				PASEO DEL NORTE From East				UNIVERSE From South				PASEO DEL NORTE From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	44	123	80	0	13	28	29	0	23	31	2	0	18	102	30	0	523
07:15 AM	61	145	76	0	26	29	22	0	38	49	5	0	15	90	34	0	590
07:30 AM	65	98	72	0	40	40	9	0	19	55	1	0	11	77	40	0	527
07:45 AM	67	89	50	0	41	55	11	0	9	63	1	0	13	64	44	0	507
Total	237	455	278	0	120	152	71	0	89	198	9	0	57	333	148	0	2147
08:00 AM	54	90	63	0	42	48	15	0	25	44	3	0	13	70	36	0	503
08:15 AM	41	56	53	0	31	36	13	0	23	34	0	0	5	74	35	0	401
08:30 AM	22	52	67	0	36	34	8	0	18	42	1	0	8	77	28	0	393
08:45 AM	20	44	48	0	46	33	7	0	15	49	1	0	1	63	36	0	363
Total	137	242	231	0	155	151	43	0	81	169	5	0	27	284	135	0	1660
*** BREAK ***																	
04:00 PM	40	82	42	0	69	64	22	0	10	78	0	0	4	59	39	0	509
04:15 PM	49	74	47	2	66	76	18	0	21	68	6	0	1	66	39	0	533
04:30 PM	52	57	27	1	82	76	21	0	25	75	3	0	2	56	44	0	521
04:45 PM	59	93	32	2	76	84	31	0	15	80	2	0	1	52	50	0	577
Total	200	306	148	5	293	300	92	0	71	301	11	0	8	233	172	0	2140
05:00 PM	63	80	45	0	71	79	23	0	15	84	2	0	2	60	45	0	569
05:15 PM	66	64	31	1	74	70	26	0	22	84	0	1	1	72	70	0	582
05:30 PM	64	65	35	1	67	88	19	0	23	103	2	0	1	50	39	0	557
05:45 PM	64	77	46	0	67	66	22	0	20	83	5	0	3	59	53	0	565
Total	257	286	157	2	279	303	90	0	80	354	9	1	7	241	207	0	2273
Grand Total	831	1289	814	7	847	906	296	0	321	1022	34	1	99	1091	662	0	8220
Apprch %	28.3	43.8	27.7	0.2	41.3	44.2	14.4	0	23.3	74.2	2.5	0.1	5.3	58.9	35.7	0	
Total %	10.1	15.7	9.9	0.1	10.3	11	3.6	0	3.9	12.4	0.4	0	1.2	13.3	8.1	0	

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Site Code : 00000000
Start Date : 3/16/2022
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Rio Rancho, NM 87124

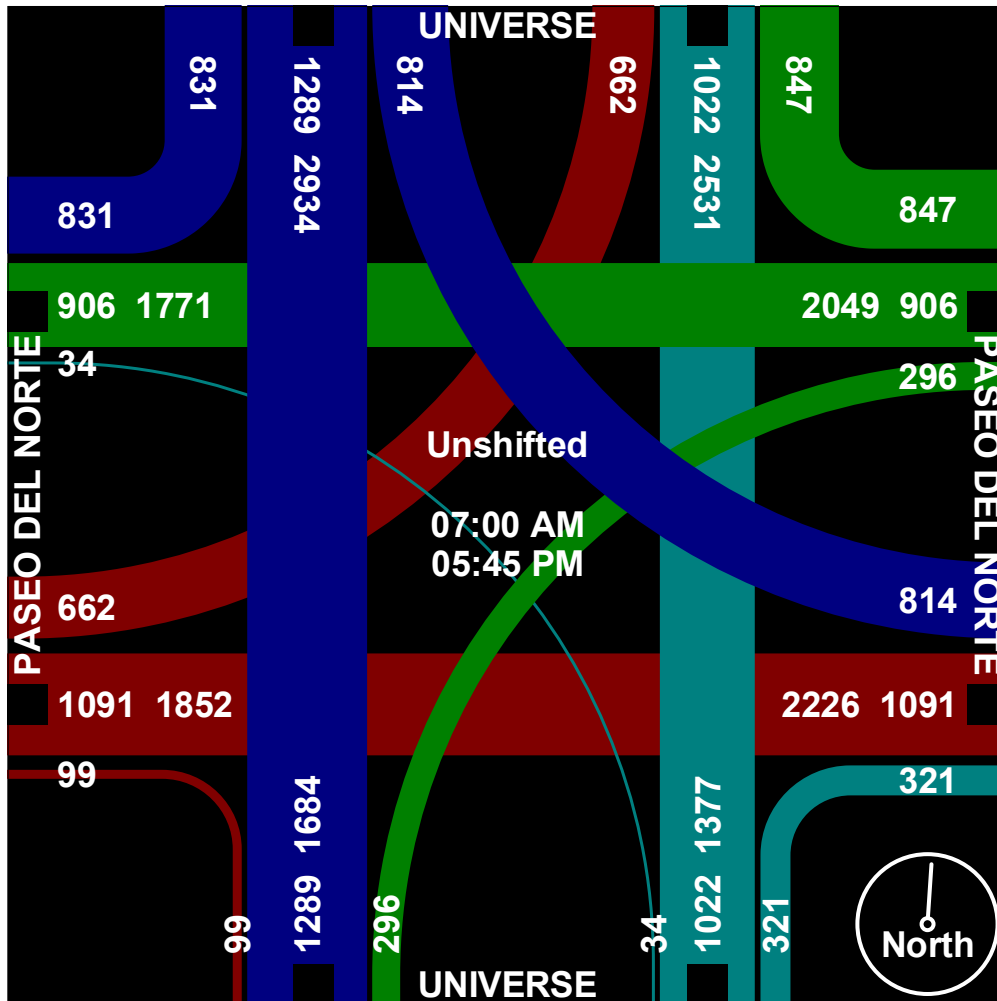
ADVANCEDESIGN

File Name : COMBINED UNV-PDN_03-16-22_0

Site Code : 00000000

Start Date : 3/16/2022

Page No : 3



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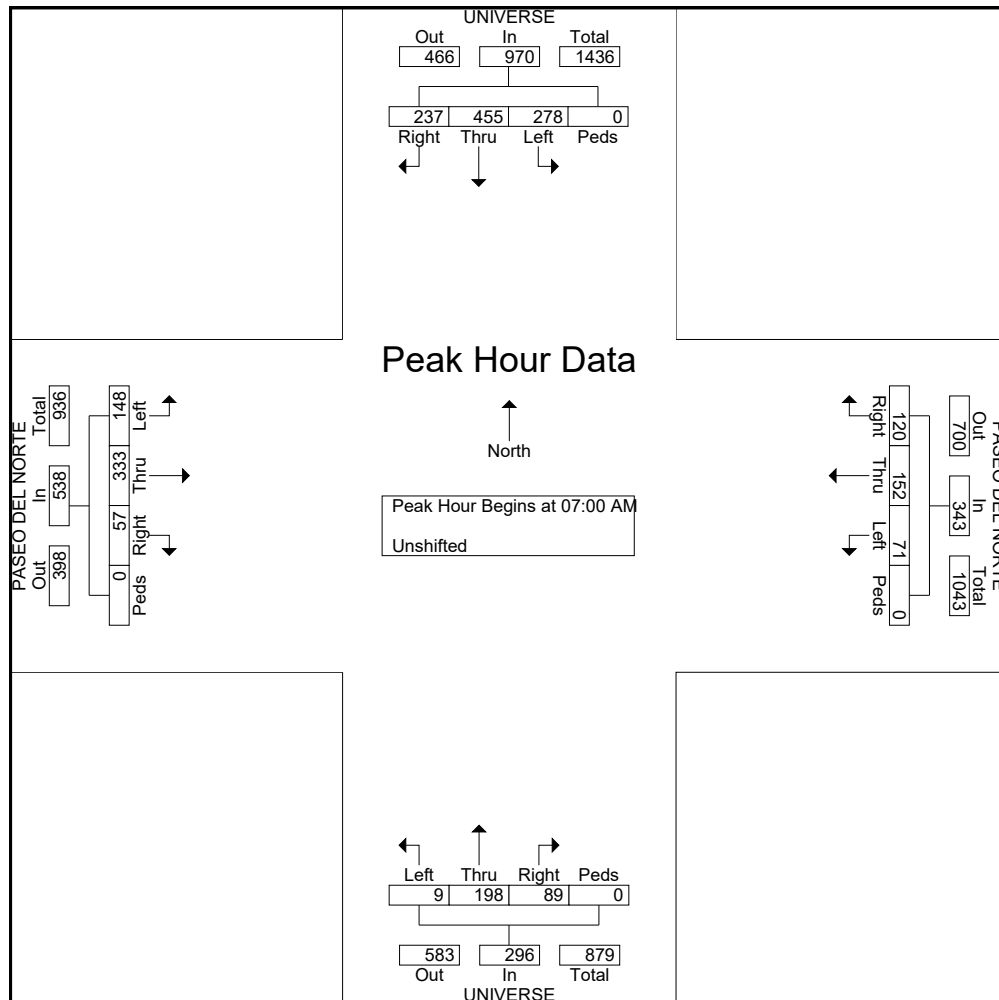
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Site Code : 00000000

Start Date : 3/16/2022

Page No : 4

	UNIVERSE From North					PASEO DEL NORTE From East					UNIVERSE From South					PASEO DEL NORTE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	44	123	80	0	247	13	28	29	0	70	23	31	2	0	56	18	102	30	0	150	523
07:15 AM	61	145	76	0	282	26	29	22	0	77	38	49	5	0	92	15	90	34	0	139	590
07:30 AM	65	98	72	0	235	40	40	9	0	89	19	55	1	0	75	11	77	40	0	128	527
07:45 AM	67	89	50	0	206	41	55	11	0	107	9	63	1	0	73	13	64	44	0	121	507
Total Volume	237	455	278	0	970	120	152	71	0	343	89	198	9	0	296	57	333	148	0	538	2147
% App. Total	24.4	46.9	28.7	0		35	44.3	20.7	0		30.1	66.9	3	0		10.6	61.9	27.5	0		
PHF	.884	.784	.869	.000	.860	.732	.691	.612	.000	.801	.586	.786	.450	.000	.804	.792	.816	.841	.000	.897	.910



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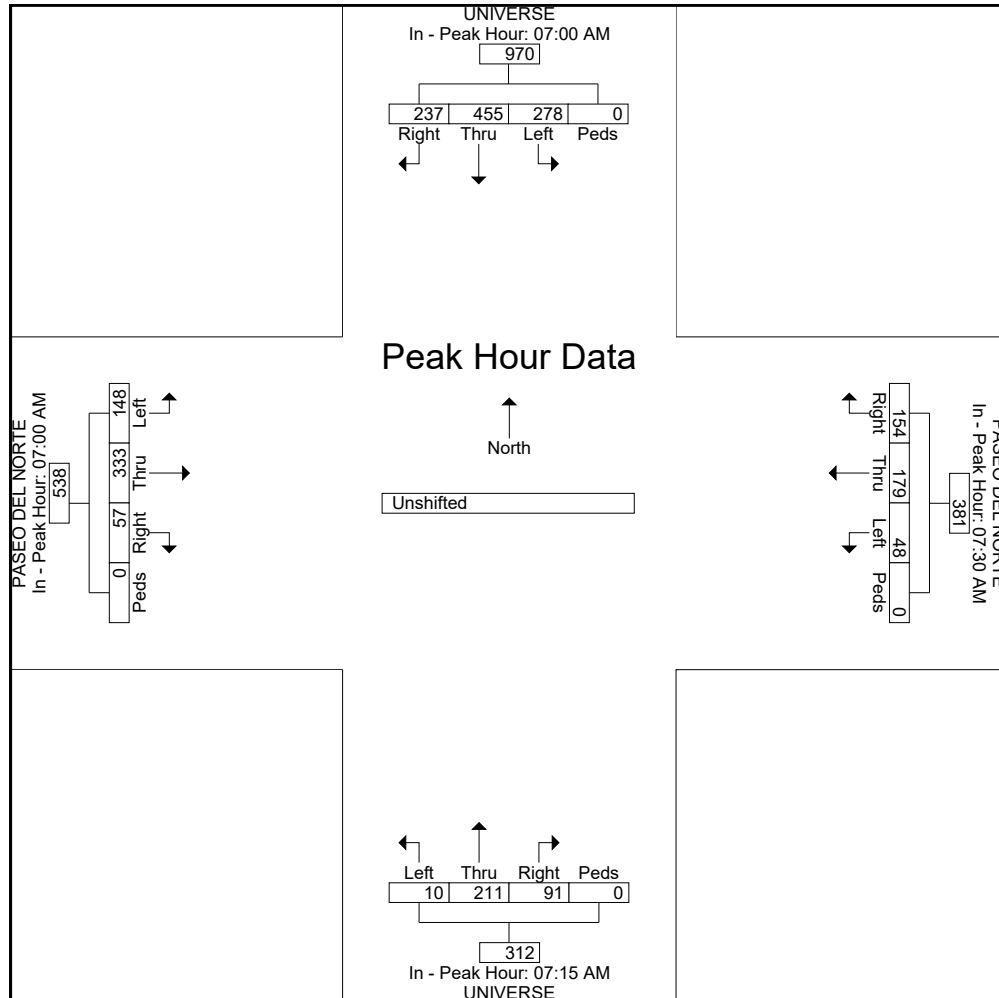
File Name : COMBINED UNV-PDN_03-16-22_0

Site Code : 00000000

Start Date : 3/16/2022

Page No : 5

	UNIVERSE From North					PASEO DEL NORTE From East					UNIVERSE From South					PASEO DEL NORTE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:00 AM					07:30 AM					07:15 AM					07:00 AM					
+0 mins.	44	123	80	0	247	40	40	9	0	89	38	49	5	0	92	18	102	30	0	150	
+15 mins.	61	145	76	0	282	41	55	11	0	107	19	55	1	0	75	15	90	34	0	139	
+30 mins.	65	98	72	0	235	42	48	15	0	105	9	63	1	0	73	11	77	40	0	128	
+45 mins.	67	89	50	0	206	31	36	13	0	80	25	44	3	0	72	13	64	44	0	121	
Total Volume	237	455	278	0	970	154	179	48	0	381	91	211	10	0	312	57	333	148	0	538	
% App. Total	24.4	46.9	28.7	0		40.4	47	12.6	0		29.2	67.6	3.2	0		10.6	61.9	27.5	0		
PHF	.884	.784	.869	.000	.860	.917	.814	.800	.000	.890	.599	.837	.500	.000	.848	.792	.816	.841	.000	.897	



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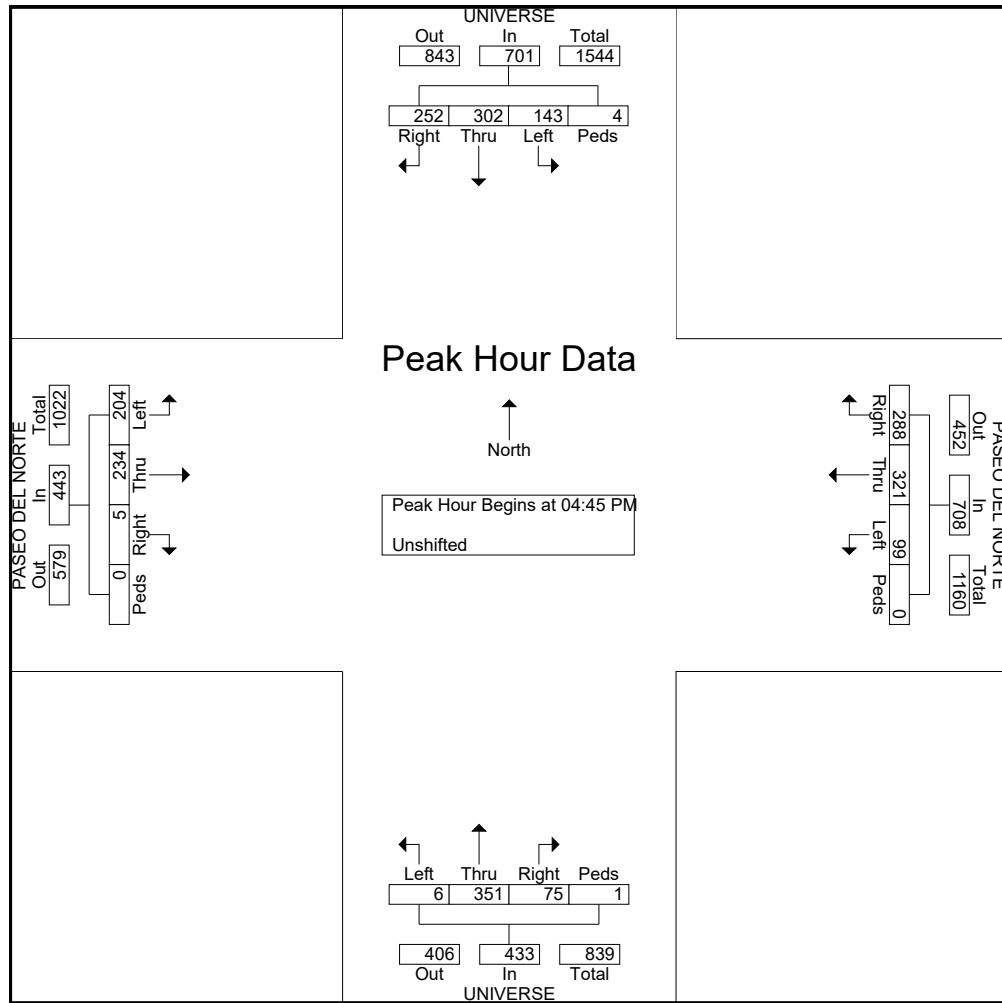
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Site Code : 00000000

Start Date : 3/16/2022

Page No : 6

	UNIVERSE From North					PASEO DEL NORTE From East					UNIVERSE From South					PASEO DEL NORTE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	59	93	32	2	186	76	84	31	0	191	15	80	2	0	97	1	52	50	0	103	577
05:00 PM	63	80	45	0	188	71	79	23	0	173	15	84	2	0	101	2	60	45	0	107	569
05:15 PM	66	64	31	1	162	74	70	26	0	170	22	84	0	1	107	1	72	70	0	143	582
05:30 PM	64	65	35	1	165	67	88	19	0	174	23	103	2	0	128	1	50	39	0	90	557
Total Volume	252	302	143	4	701	288	321	99	0	708	75	351	6	1	433	5	234	204	0	443	2285
% App. Total	35.9	43.1	20.4	0.6		40.7	45.3	14	0		17.3	81.1	1.4	0.2		1.1	52.8	46	0		
PHF	.955	.812	.794	.500	.932	.947	.912	.798	.000	.927	.815	.852	.750	.250	.846	.625	.813	.729	.000	.774	.982



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Start Date : 3/16/2022

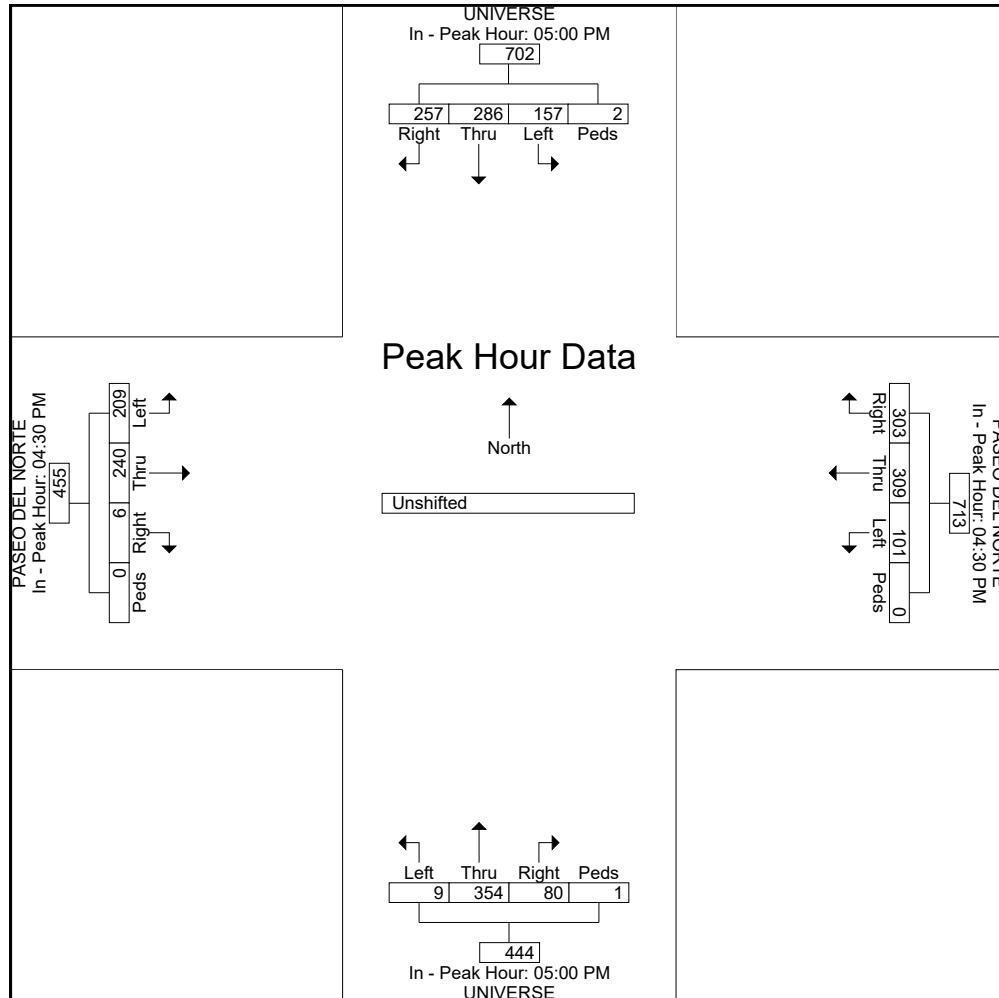
Page No : 7

	UNIVERSE From North					PASEO DEL NORTE From East					UNIVERSE From South					PASEO DEL NORTE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	05:00 PM					04:30 PM					05:00 PM					04:30 PM				
+0 mins.	63	80	45	0	188	82	76	21	0	179	15	84	2	0	101	2	56	44	0	102
+15 mins.	66	64	31	1	162	76	84	31	0	191	22	84	0	1	107	1	52	50	0	103
+30 mins.	64	65	35	1	165	71	79	23	0	173	23	103	2	0	128	2	60	45	0	107
+45 mins.	64	77	46	0	187	74	70	26	0	170	20	83	5	0	108	1	72	70	0	143
Total Volume	257	286	157	2	702	303	309	101	0	713	80	354	9	1	444	6	240	209	0	455
% App. Total	36.6	40.7	22.4	0.3		42.5	43.3	14.2	0		18	79.7	2	0.2		1.3	52.7	45.9	0	
PHF	.973	.894	.853	.500	.934	.924	.920	.815	.000	.933	.870	.859	.450	.250	.867	.750	.833	.746	.000	.795



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Site Code : 00000000

Start Date : 3/16/2022

Page No : 8



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333 Rio Rancho Drive NW, Suite 101
Rio Rancho, NM 87124
ADVANCEDESIGN

Weather: sunny
Serial Number: TU-3083
Collected By: MM & JS
Other:

File Name : uni-vol_03-17-22_1
Site Code : 00000000
Start Date : 3/17/2022
Page No : 1

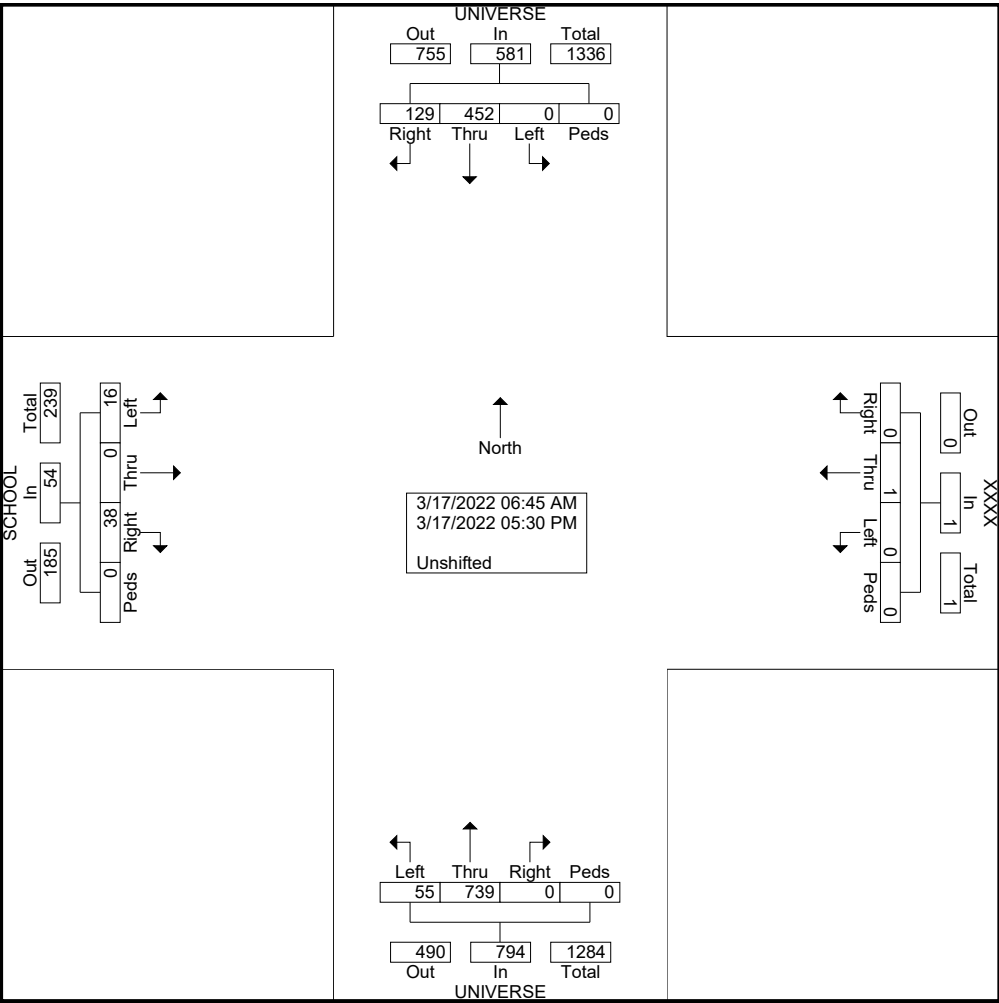
Groups Printed- Unshifted

	UNIVERSE From North				XXXX From East				UNIVERSE From South				SCHOOL From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
06:45 AM	66	0	0	0	0	0	0	0	0	0	27	0	9	0	3	0	105
Total	66	0	0	0	0	0	0	0	0	0	27	0	9	0	3	0	105
07:00 AM	51	0	0	0	0	0	0	0	0	0	24	0	14	0	7	0	96
07:15 AM	5	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	7
07:30 AM	3	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	6
07:45 AM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3
Total	61	0	0	0	0	0	0	0	0	0	26	0	16	0	9	0	112
*** BREAK ***																	
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
*** BREAK ***																	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
*** BREAK ***																	
03:45 PM	1	45	0	0	0	0	0	0	0	73	1	0	4	0	1	0	125
Total	1	45	0	0	0	0	0	0	0	73	1	0	4	0	1	0	125
04:00 PM	0	43	0	0	0	0	0	0	0	77	0	0	5	0	0	0	125
04:15 PM	1	62	0	0	0	0	0	0	0	89	0	0	0	0	0	0	152
04:30 PM	0	59	0	0	0	0	0	0	0	109	0	0	1	0	1	0	170
04:45 PM	0	63	0	0	0	1	0	0	0	100	1	0	0	0	0	0	165
Total	1	227	0	0	0	1	0	0	0	375	1	0	6	0	1	0	612
05:00 PM	0	68	0	0	0	0	0	0	0	93	0	0	0	0	0	0	161
05:15 PM	0	64	0	0	0	0	0	0	0	100	0	0	3	0	1	0	168
05:30 PM	0	48	0	0	0	0	0	0	0	98	0	0	0	0	0	0	146
Grand Total	129	452	0	0	0	1	0	0	0	739	55	0	38	0	16	0	1430
Apprch %	22.2	77.8	0	0	0	100	0	0	0	93.1	6.9	0	70.4	0	29.6	0	
Total %	9	31.6	0	0	0	0.1	0	0	0	51.7	3.8	0	2.7	0	1.1	0	

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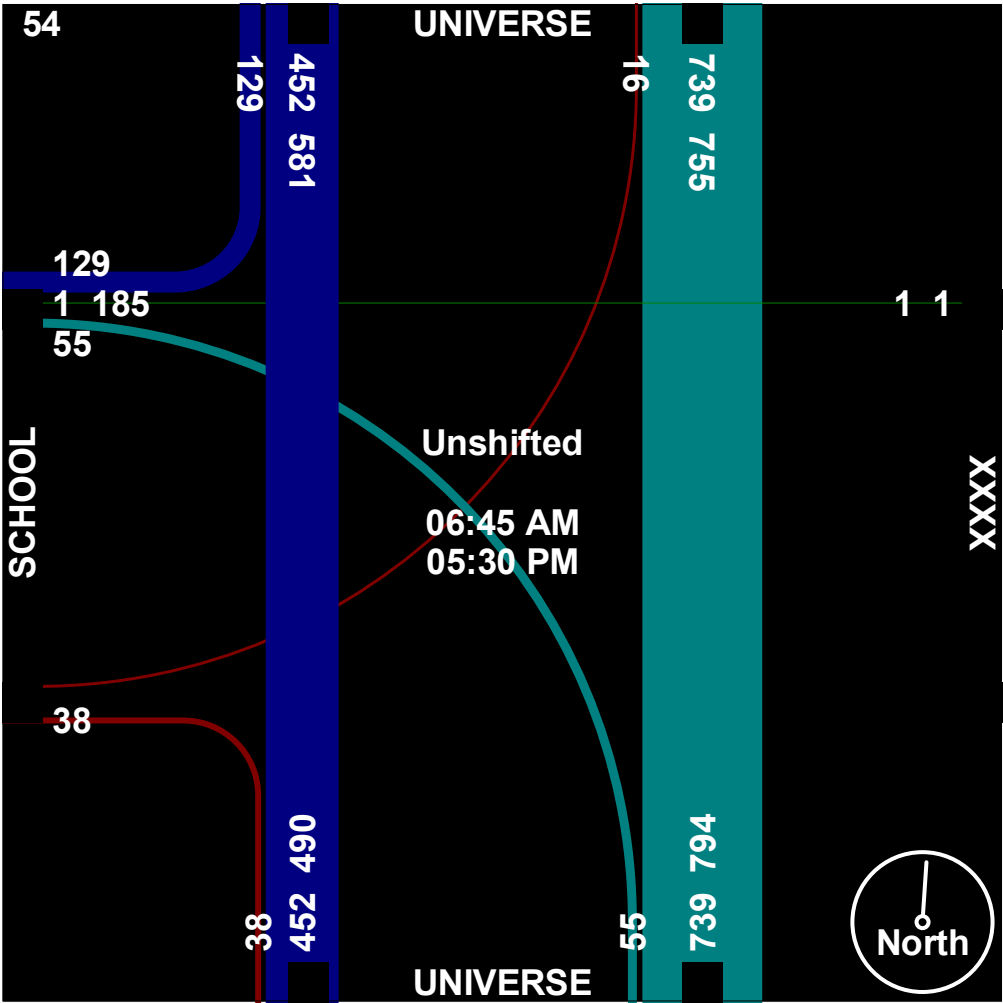
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Site Code : 00000000
Start Date : 3/17/2022
Page No : 2



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File Name : uni-vol_03-17-22_1
Site Code : 00000000
Start Date : 3/17/2022
Page No : 3



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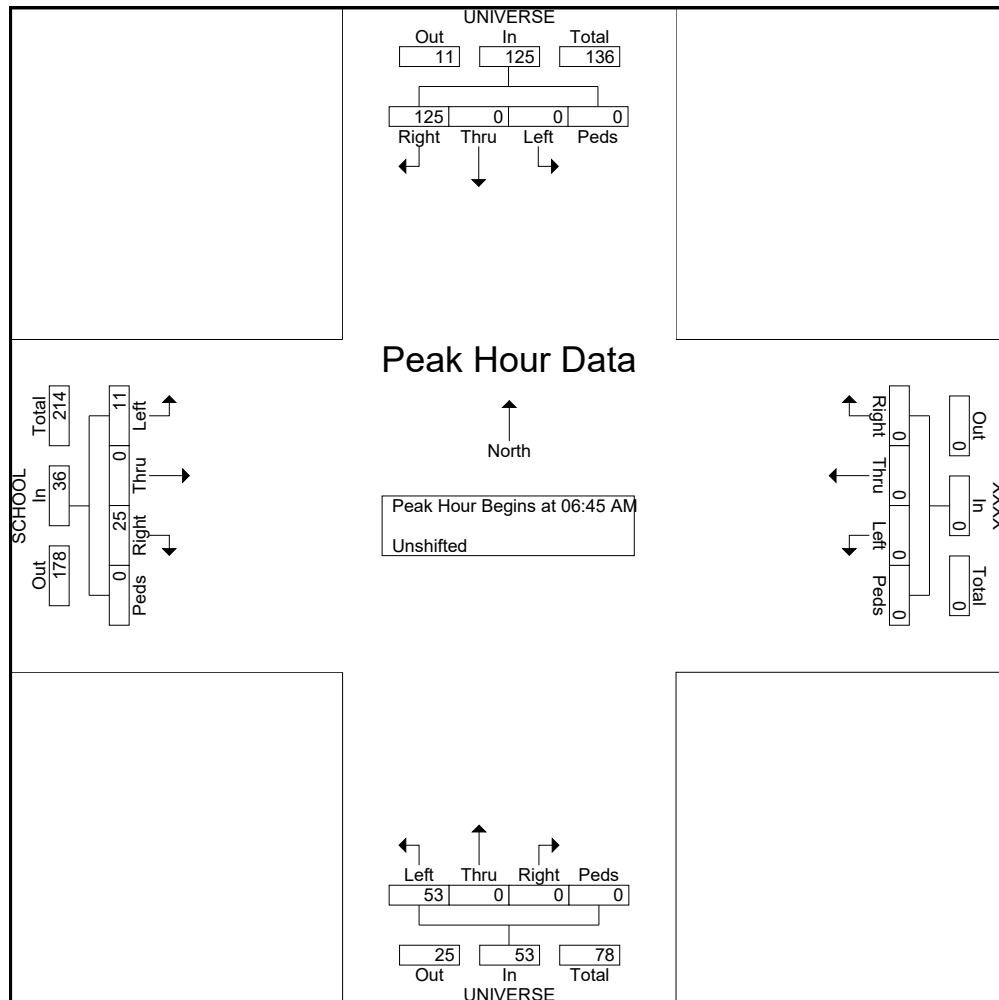
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Site Code : 00000000

Start Date : 3/17/2022

Page No : 4

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Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:45 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 06:45 AM																					
06:45 AM	66	0	0	0	66	0	0	0	0	0	0	0	27	0	27	9	0	3	0	12	105
07:00 AM	51	0	0	0	51	0	0	0	0	0	0	0	24	0	24	14	0	7	0	21	96
07:15 AM	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	7
07:30 AM	3	0	0	0	3	0	0	0	0	0	0	0	2	0	2	1	0	0	0	1	6
Total Volume	125	0	0	0	125	0	0	0	0	0	0	0	53	0	53	25	0	11	0	36	214
% App. Total	100	0	0	0		0	0	0	0		0	0	100	0		69.4	0	30.6	0		
PHF	.473	.000	.000	.000	.473	.000	.000	.000	.000	.000	.000	.000	.491	.000	.491	.446	.000	.393	.000	.429	.510



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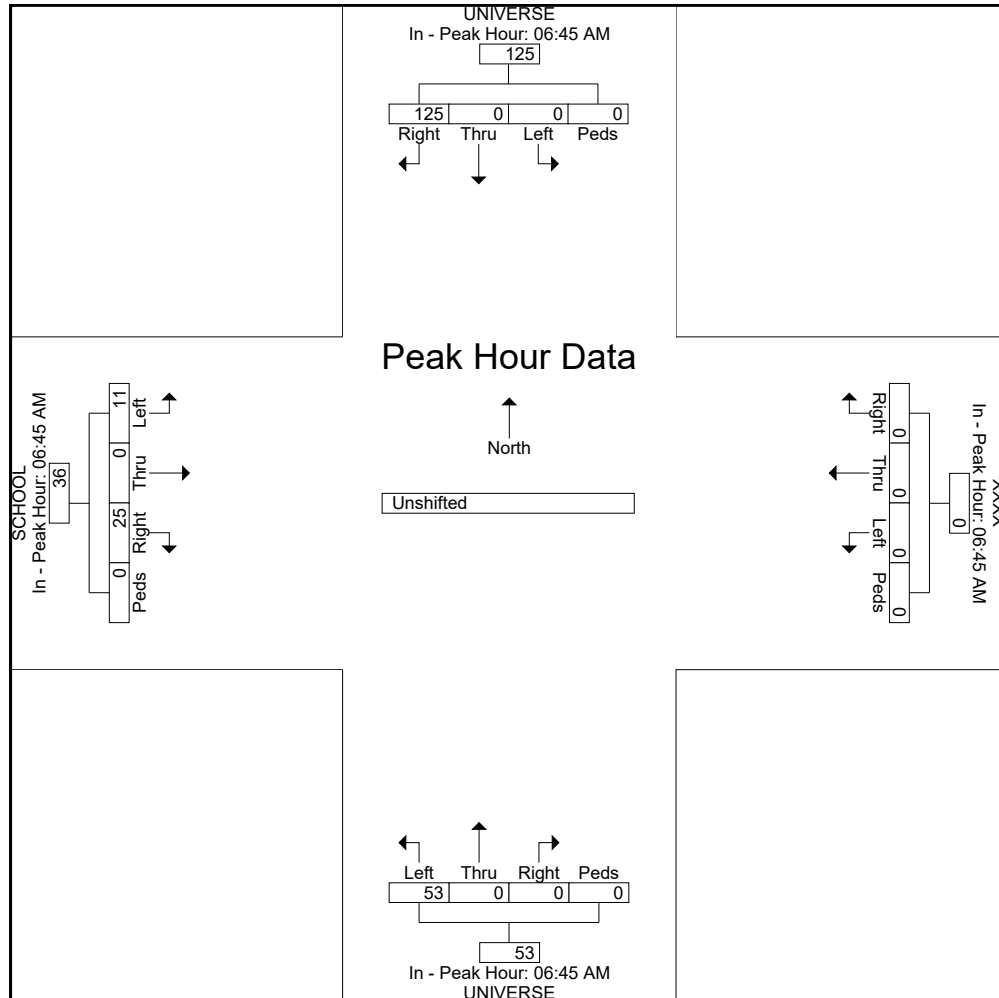
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Site Code : 00000000

Start Date : 3/17/2022

Page No : 5

	UNIVERSE From North					XXXX From East					UNIVERSE From South					SCHOOL From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:45 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
+0 mins.	66	0	0	0	66	0	0	0	0	0	0	0	27	0	27	9	0	3	0	12	
+15 mins.	51	0	0	0	51	0	0	0	0	0	0	0	24	0	24	14	0	7	0	21	
+30 mins.	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	
+45 mins.	3	0	0	0	3	0	0	0	0	0	0	0	2	0	2	1	0	0	0	1	
Total Volume	125	0	0	0	125	0	0	0	0	0	0	0	53	0	53	25	0	11	0	36	
% App. Total	100	0	0	0		0	0	0	0		0	0	100	0		69.4	0	30.6	0		
PHF	.473	.000	.000	.000	.473	.000	.000	.000	.000	.000	.000	.000	.491	.000	.491	.446	.000	.393	.000	.429	



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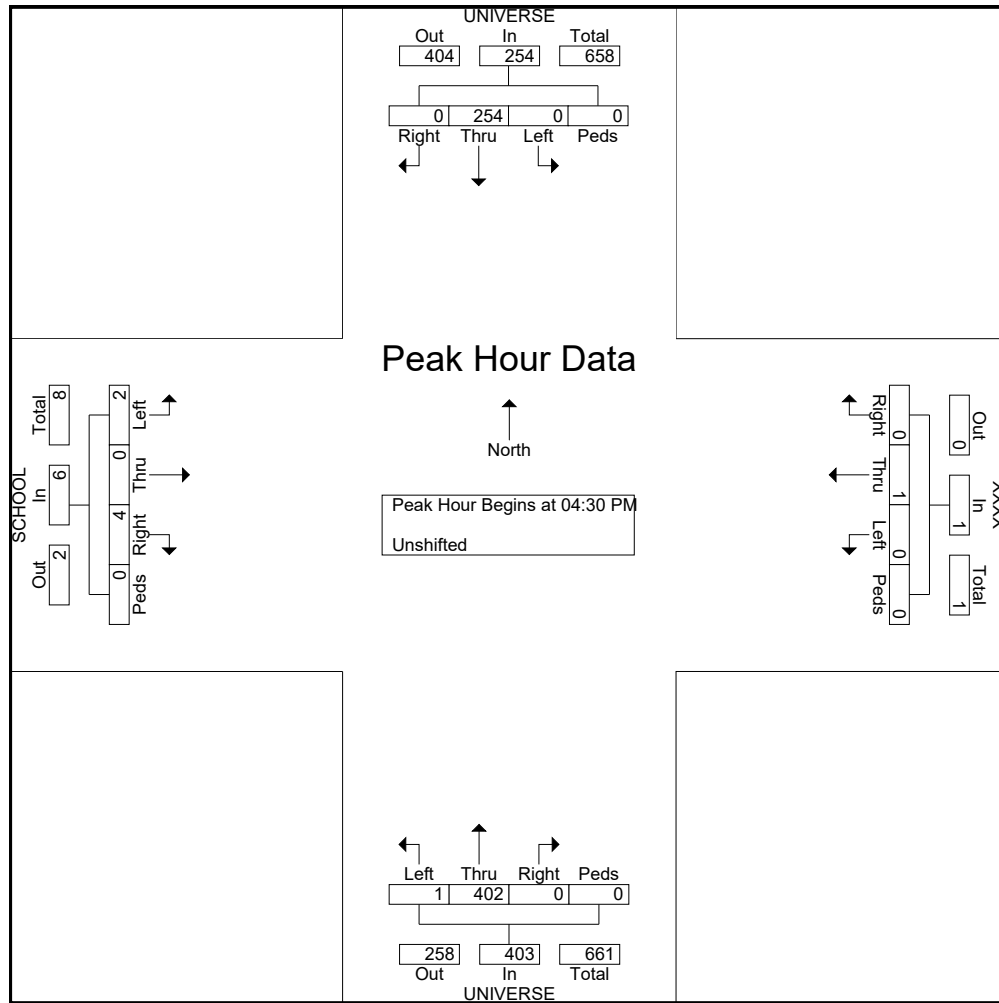
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Site Code : 00000000

Start Date : 3/17/2022

Page No : 6

	UNIVERSE From North					XXXX From East					UNIVERSE From South					SCHOOL From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	59	0	0	59	0	0	0	0	0	0	109	0	0	109	1	0	1	0	2	170
04:45 PM	0	63	0	0	63	0	1	0	0	1	0	100	1	0	101	0	0	0	0	0	165
05:00 PM	0	68	0	0	68	0	0	0	0	0	0	93	0	0	93	0	0	0	0	0	161
05:15 PM	0	64	0	0	64	0	0	0	0	0	0	100	0	0	100	3	0	1	0	4	168
Total Volume	0	254	0	0	254	0	1	0	0	1	0	402	1	0	403	4	0	2	0	6	664
% App. Total	0	100	0	0		0	100	0	0		0	99.8	0.2	0		66.7	0	33.3	0		
PHF	.000	.934	.000	.000	.934	.000	.250	.000	.000	.250	.000	.922	.250	.000	.924	.333	.000	.500	.000	.375	.976



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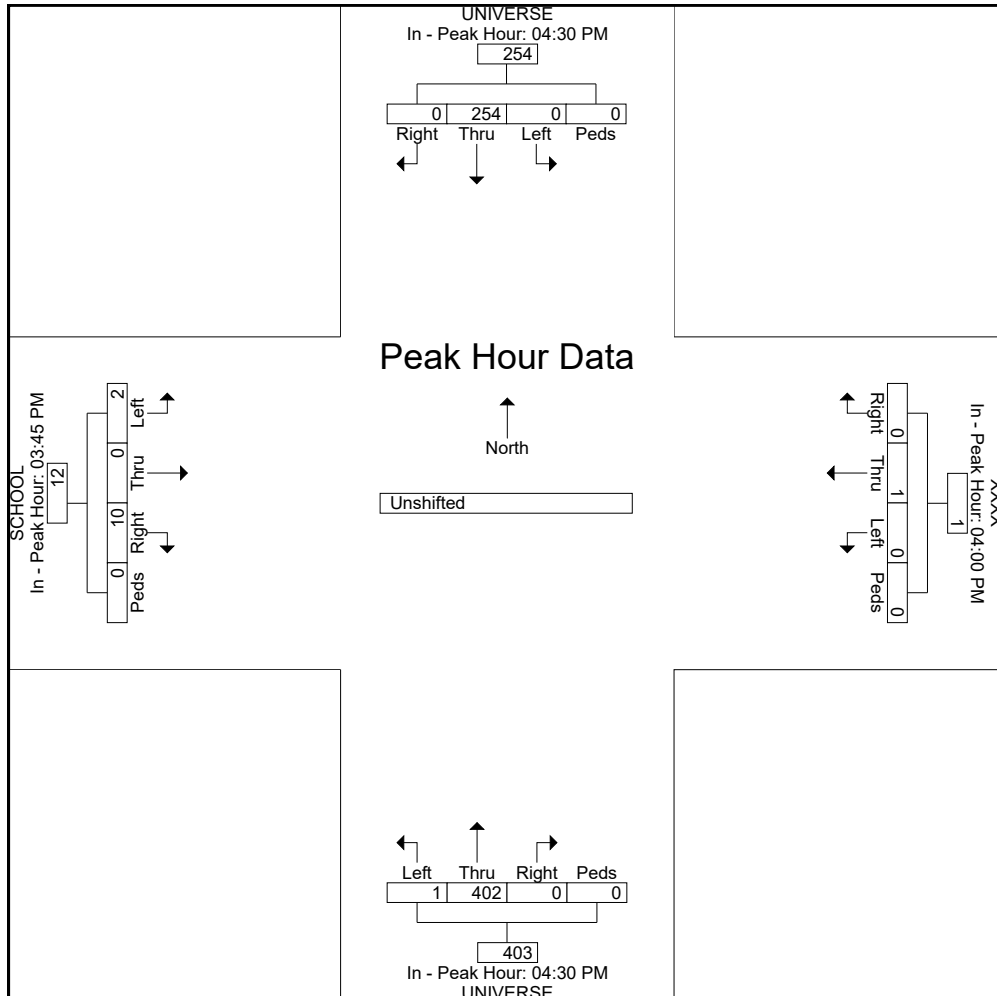
Page No : 7

	UNIVERSE From North					XXXX From East					UNIVERSE From South					SCHOOL From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 12:00 PM to 05:30 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM					04:00 PM					04:30 PM					03:45 PM					
+0 mins.	0	59	0	0	59	0	0	0	0	0	0	109	0	0	109	4	0	1	0	5	
+15 mins.	0	63	0	0	63	0	0	0	0	0	0	100	1	0	101	5	0	0	0	5	
+30 mins.	0	68	0	0	68	0	0	0	0	0	0	93	0	0	93	0	0	0	0	0	
+45 mins.	0	64	0	0	64	0	1	0	0	1	0	100	0	0	100	1	0	1	0	2	
Total Volume	0	254	0	0	254	0	1	0	0	1	0	402	1	0	403	10	0	2	0	12	
% App. Total	0	100	0	0		0	100	0	0		0	99.8	0.2	0		83.3	0	16.7	0		
PHF	.000	.934	.000	.000	.934	.000	.250	.000	.000	.250	.000	.922	.250	.000	.924	.500	.000	.500	.000	.600	



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Site Code : 00000000

Start Date : 3/17/2022

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Weather: sunny
Serial Number: TU-3082
Collected By: LBierig
Other:

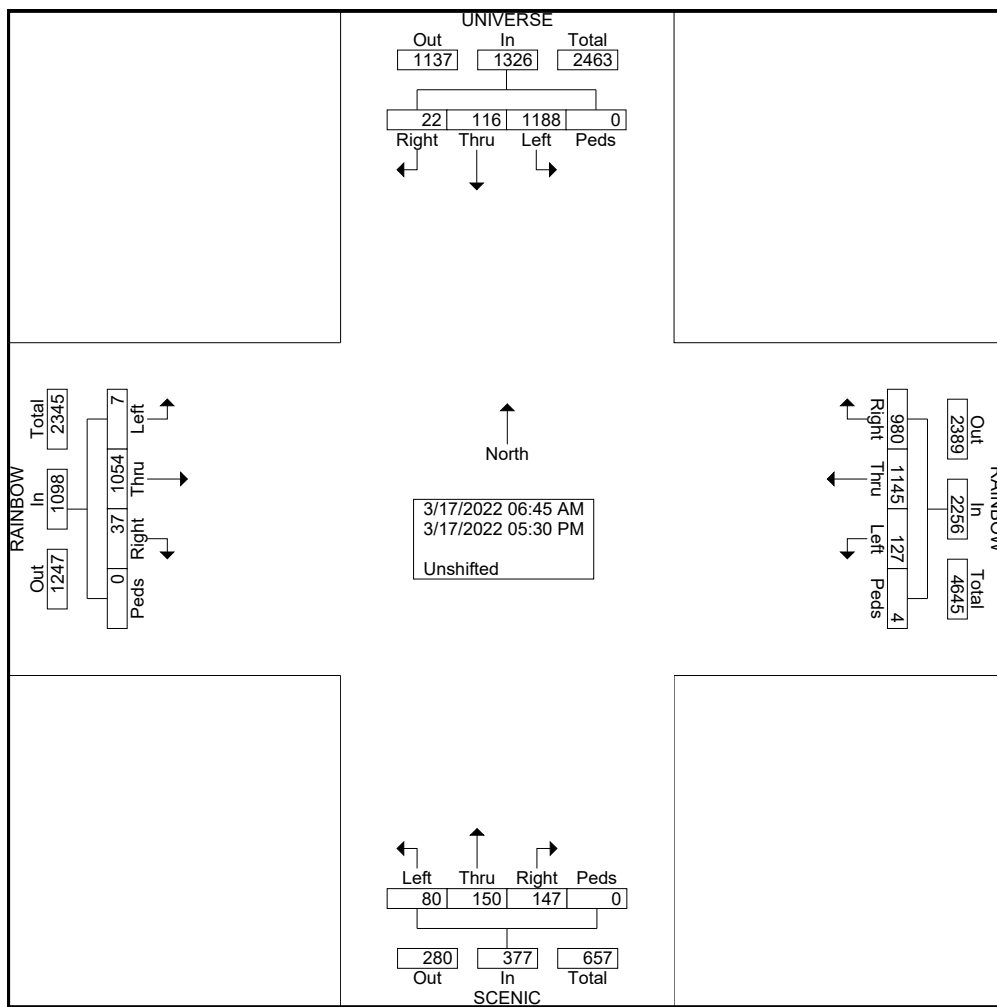
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Start Date : 3/17/2022
Page No : 1

Groups Printed- Unshifted

	UNIVERSE From North				RAINBOW From East				SCENIC From South				RAINBOW From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
06:45 AM	9	7	139	0	45	118	1	0	11	14	22	0	7	110	1	0	484
Total	9	7	139	0	45	118	1	0	11	14	22	0	7	110	1	0	484
07:00 AM	4	9	151	0	48	127	1	0	7	8	27	0	7	131	1	0	521
07:15 AM	1	5	131	0	28	47	3	0	16	12	3	0	0	97	0	0	343
07:30 AM	1	6	103	0	44	46	5	0	13	6	1	0	0	68	0	0	293
07:45 AM	2	5	81	0	29	44	5	0	10	2	2	0	0	66	0	0	246
Total	8	25	466	0	149	264	14	0	46	28	33	0	7	362	1	0	1403
08:00 AM	0	4	80	0	24	46	3	0	5	5	7	0	1	78	1	0	254
08:15 AM	1	0	62	0	21	22	0	0	4	13	1	0	0	71	0	0	195
08:30 AM	2	4	58	0	25	21	4	4	17	9	0	0	0	45	0	0	189
*** BREAK ***																	
Total	3	8	200	0	70	89	7	4	26	27	8	0	1	194	1	0	638
*** BREAK ***																	
03:45 PM	0	4	50	0	77	69	13	0	8	5	3	0	6	40	2	0	277
Total	0	4	50	0	77	69	13	0	8	5	3	0	6	40	2	0	277
04:00 PM	0	7	33	0	82	83	14	0	9	10	0	0	1	38	0	0	277
04:15 PM	0	12	53	0	75	93	10	0	8	8	1	0	2	50	0	0	312
04:30 PM	1	6	44	0	109	89	11	0	8	13	3	0	4	41	1	0	330
04:45 PM	0	11	64	0	77	67	14	0	6	13	0	0	1	47	0	0	300
Total	1	36	194	0	343	332	49	0	31	44	4	0	8	176	1	0	1219
05:00 PM	0	11	56	0	104	87	17	0	10	15	4	0	2	48	0	0	354
05:15 PM	1	17	50	0	93	94	16	0	10	6	3	0	3	85	1	0	379
05:30 PM	0	8	33	0	99	92	10	0	5	11	3	0	3	39	0	0	303
Grand Total	22	116	1188	0	980	1145	127	4	147	150	80	0	37	1054	7	0	5057
Apprch %	1.7	8.7	89.6	0	43.4	50.8	5.6	0.2	39	39.8	21.2	0	3.4	96	0.6	0	
Total %	0.4	2.3	23.5	0	19.4	22.6	2.5	0.1	2.9	3	1.6	0	0.7	20.8	0.1	0	

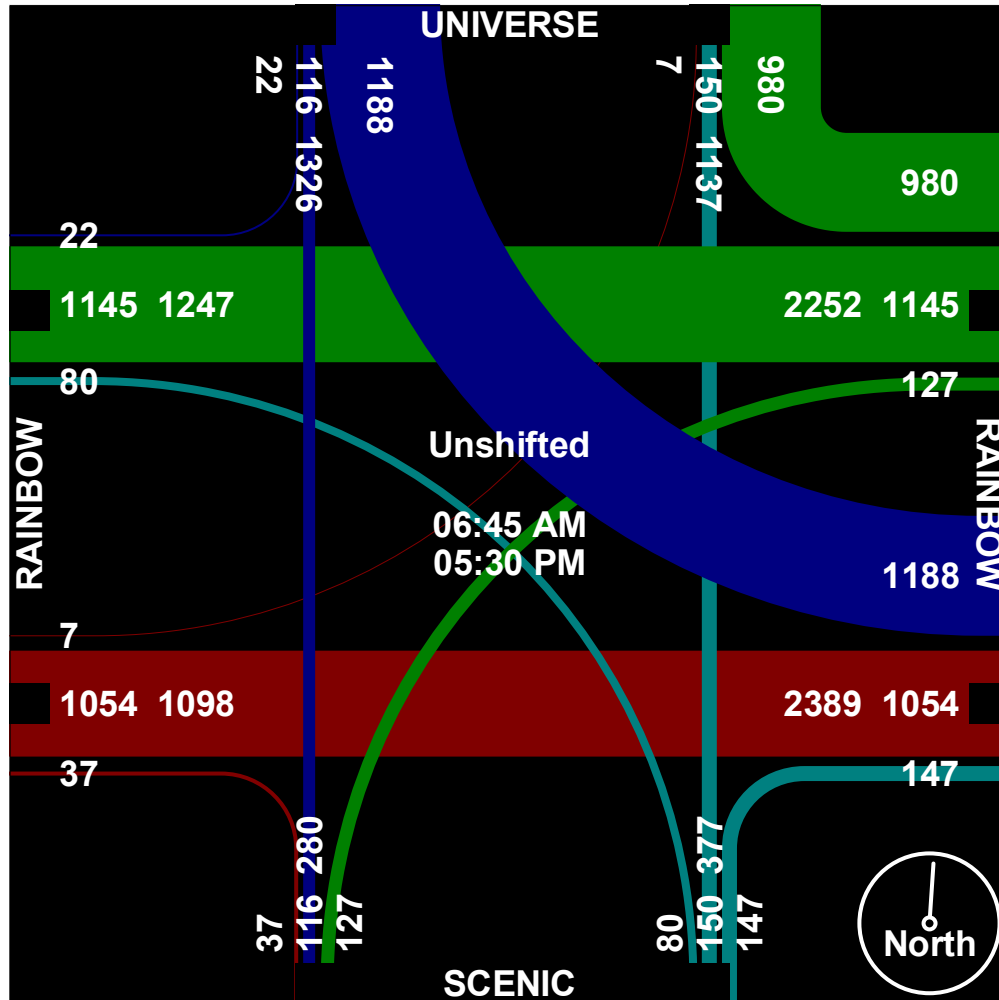
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File Name : SCE0UNV-RAIN_03-17-22_0
Site Code : 00000000
Start Date : 3/17/2022
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Start Date : 3/17/2022
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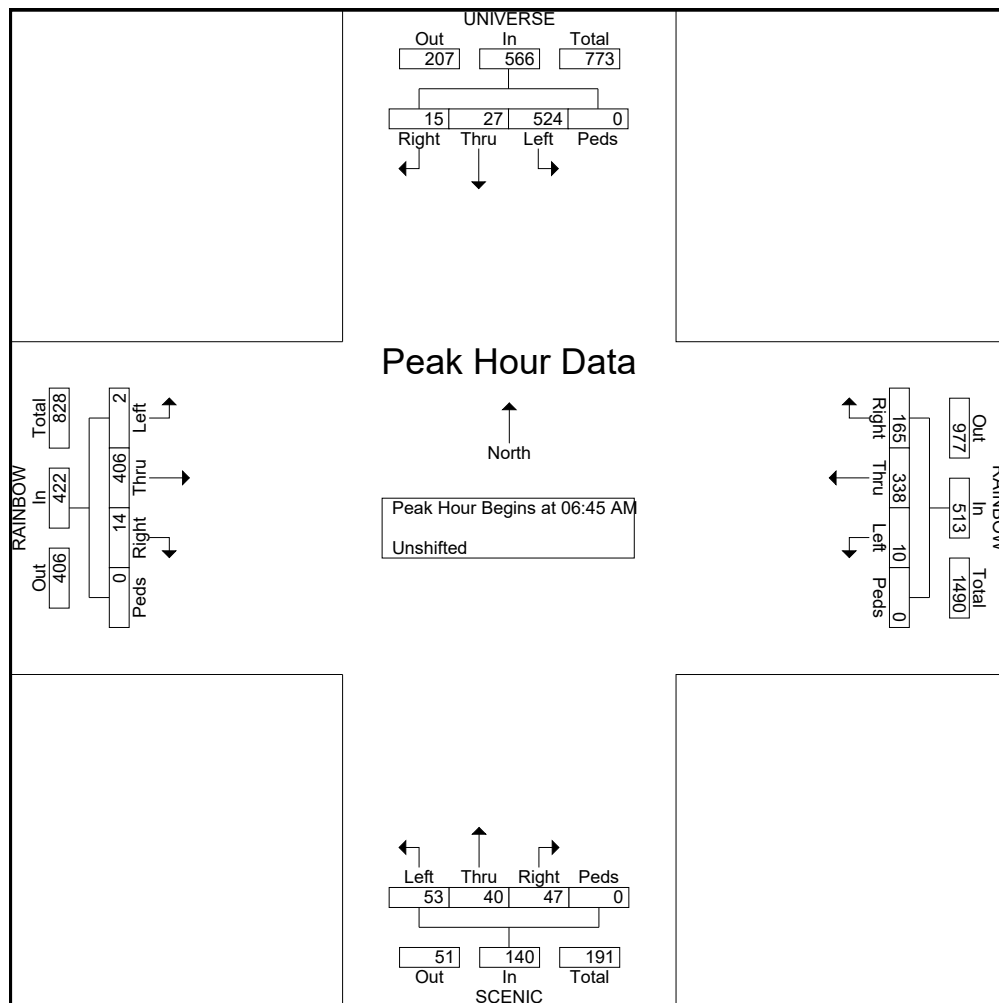
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Site Code : 00000000

Start Date : 3/17/2022

Page No : 4

	UNIVERSE From North					RAINBOW From East					SCENIC From South					RAINBOW From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:45 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 06:45 AM																					
06:45 AM	9	7	139	0	155	45	118	1	0	164	11	14	22	0	47	7	110	1	0	118	484
07:00 AM	4	9	151	0	164	48	127	1	0	176	7	8	27	0	42	7	131	1	0	139	521
07:15 AM	1	5	131	0	137	28	47	3	0	78	16	12	3	0	31	0	97	0	0	97	343
07:30 AM	1	6	103	0	110	44	46	5	0	95	13	6	1	0	20	0	68	0	0	68	293
Total Volume	15	27	524	0	566	165	338	10	0	513	47	40	53	0	140	14	406	2	0	422	1641
% App. Total	2.7	4.8	92.6	0		32.2	65.9	1.9	0		33.6	28.6	37.9	0		3.3	96.2	0.5	0		
PHF	.417	.750	.868	.000	.863	.859	.665	.500	.000	.729	.734	.714	.491	.000	.745	.500	.775	.500	.000	.759	.787



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File Name : SCE0UNV-RAIN_03-17-22_0

Site Code : 00000000

Start Date : 3/17/2022

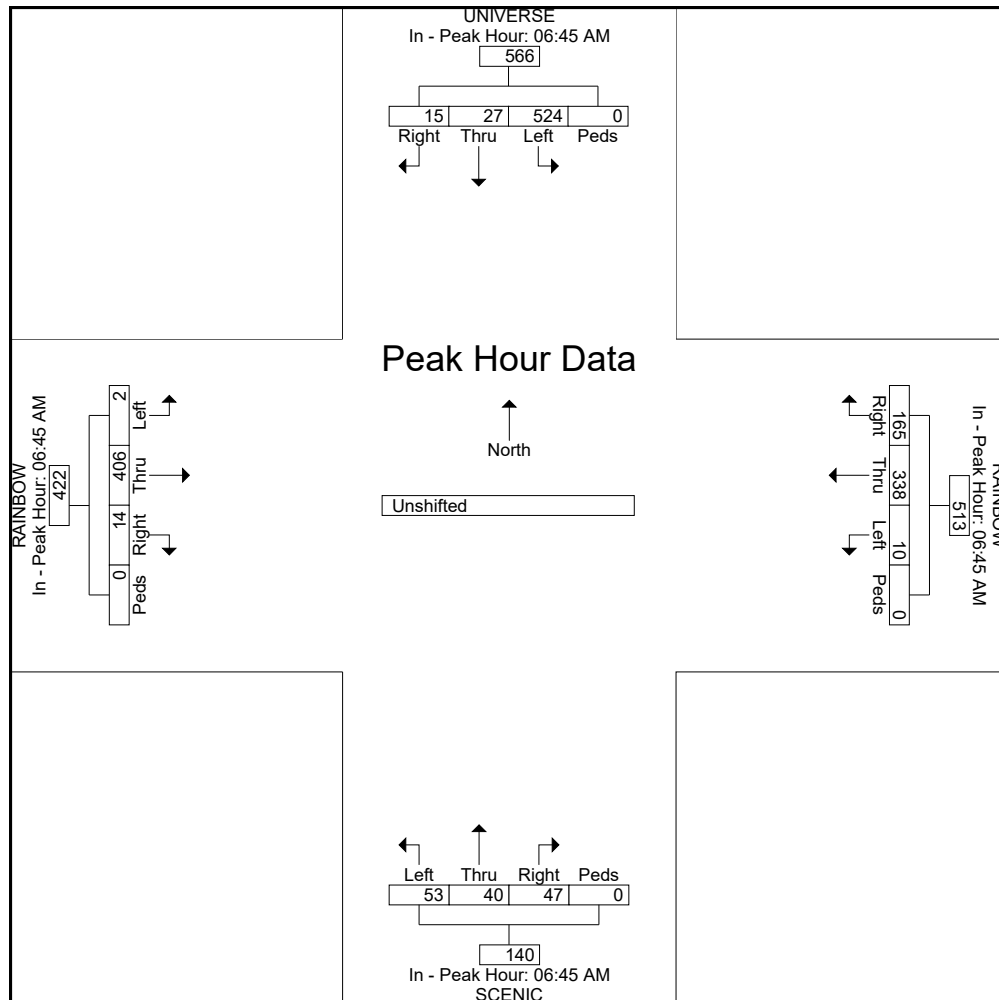
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	UNIVERSE From North					RAINBOW From East					SCENIC From South					RAINBOW From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 06:45 AM to 11:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	06:45 AM					06:45 AM					06:45 AM					06:45 AM				
+0 mins.	9	7	139	0	155	45	118	1	0	164	11	14	22	0	47	7	110	1	0	118
+15 mins.	4	9	151	0	164	48	127	1	0	176	7	8	27	0	42	7	131	1	0	139
+30 mins.	1	5	131	0	137	28	47	3	0	78	16	12	3	0	31	0	97	0	0	97
+45 mins.	1	6	103	0	110	44	46	5	0	95	13	6	1	0	20	0	68	0	0	68
Total Volume	15	27	524	0	566	165	338	10	0	513	47	40	53	0	140	14	406	2	0	422
% App. Total	2.7	4.8	92.6	0		32.2	65.9	1.9	0		33.6	28.6	37.9	0		3.3	96.2	0.5	0	
PHF	.417	.750	.868	.000	.863	.859	.665	.500	.000	.729	.734	.714	.491	.000	.745	.500	.775	.500	.000	.759

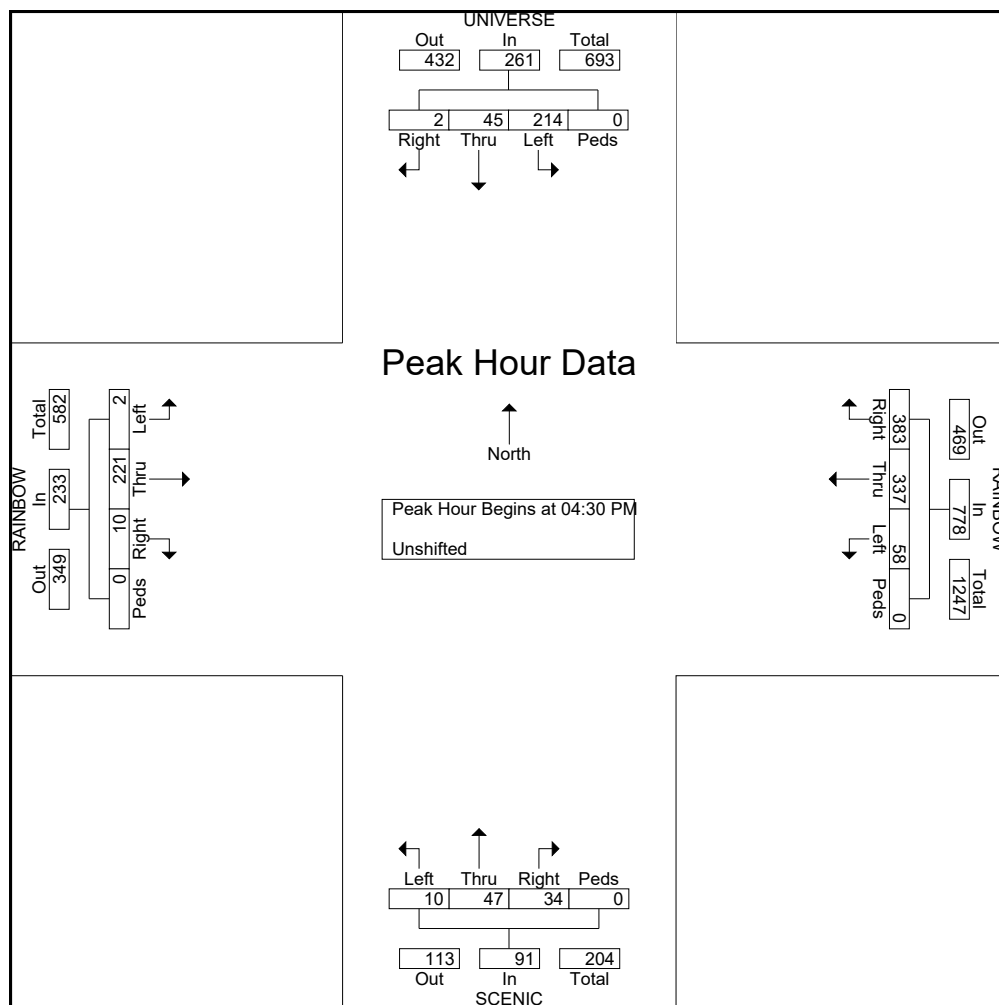


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Site Code : 00000000
Start Date : 3/17/2022
Page No : 6

	UNIVERSE From North					RAINBOW From East					SCENIC From South					RAINBOW From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	1	6	44	0	51	109	89	11	0	209	8	13	3	0	24	4	41	1	0	46	330
04:45 PM	0	11	64	0	75	77	67	14	0	158	6	13	0	0	19	1	47	0	0	48	300
05:00 PM	0	11	56	0	67	104	87	17	0	208	10	15	4	0	29	2	48	0	0	50	354
05:15 PM	1	17	50	0	68	93	94	16	0	203	10	6	3	0	19	3	85	1	0	89	379
Total Volume	2	45	214	0	261	383	337	58	0	778	34	47	10	0	91	10	221	2	0	233	1363
% App. Total	0.8	17.2	82	0		49.2	43.3	7.5	0		37.4	51.6	11	0		4.3	94.8	0.9	0		
PHF	.500	.662	.836	.000	.870	.878	.896	.853	.000	.931	.850	.783	.625	.000	.784	.625	.650	.500	.000	.654	.899



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Site Code : 00000000

Start Date : 3/17/2022

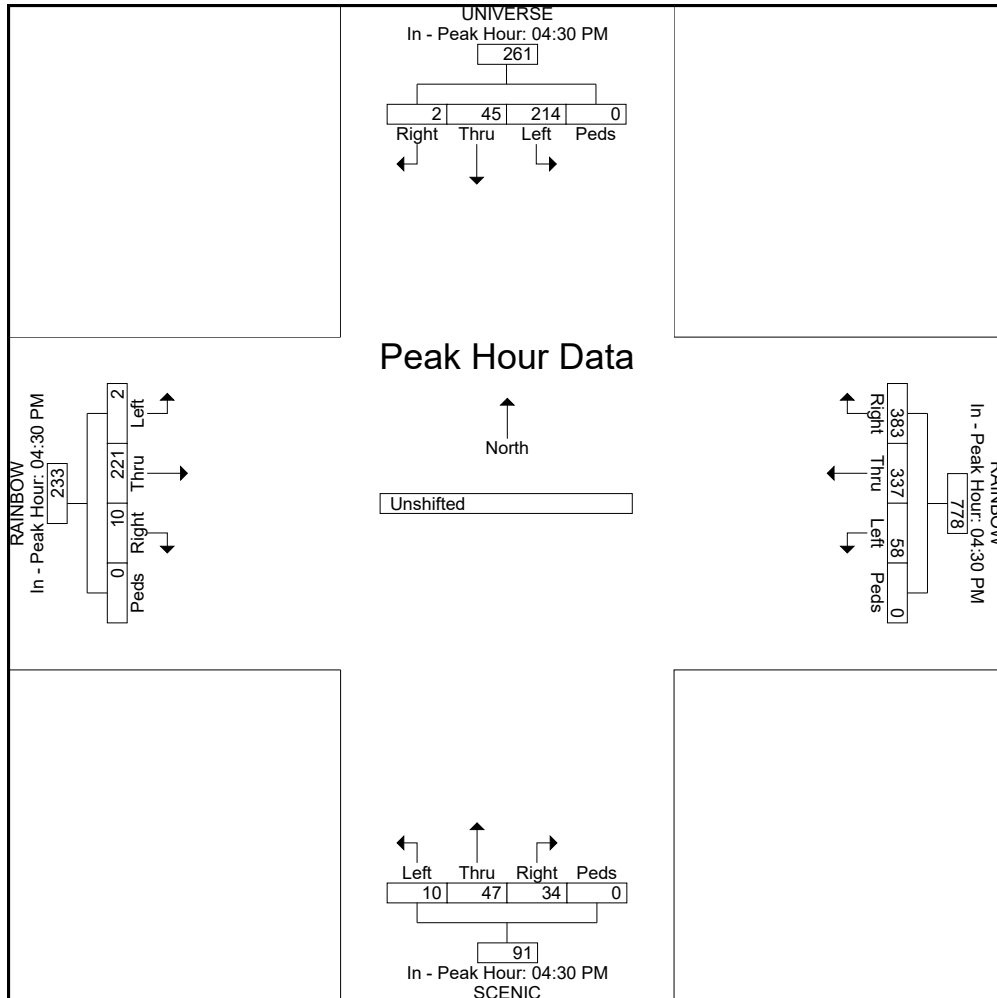
Page No : 7

	UNIVERSE From North					RAINBOW From East					SCENIC From South					RAINBOW From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 12:00 PM to 05:30 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM					04:30 PM					04:30 PM					04:30 PM				
+0 mins.	1	6	44	0	51	109	89	11	0	209	8	13	3	0	24	4	41	1	0	46
+15 mins.	0	11	64	0	75	77	67	14	0	158	6	13	0	0	19	1	47	0	0	48
+30 mins.	0	11	56	0	67	104	87	17	0	208	10	15	4	0	29	2	48	0	0	50
+45 mins.	1	17	50	0	68	93	94	16	0	203	10	6	3	0	19	3	85	1	0	89
Total Volume	2	45	214	0	261	383	337	58	0	778	34	47	10	0	91	10	221	2	0	233
% App. Total	0.8	17.2	82	0		49.2	43.3	7.5	0		37.4	51.6	11	0		4.3	94.8	0.9	0	
PHF	.500	.662	.836	.000	.870	.878	.896	.853	.000	.931	.850	.783	.625	.000	.784	.625	.650	.500	.000	.654



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File Name : SCE0UNV-RAIN_03-17-22_0

Site Code : 00000000

Start Date : 3/17/2022

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APPENDIX D

Historical Linear Regression

TRAFFIC VOLUME REGRESSION WORKSHEET

April 15, 2022

[illegible]

PROJECTIONS OF ABOVE TRAFFIC VOLUME DATA TO FORECASTED YEARS

Use last Count Year from above. ☒	
Do not use last Count Year from above. ☐	
Enter any one of previous count years from above.	
Enter Base Year 2022	
Pivot Growth Rate at 20 Years from Count Year (most commonly used). ☒	
Pivot Growth Rate (GR) at other than 20 Years from Count Year. ☐	
Enter years from Count Year for pivoting Growth Rate (e.g. for pivoting growth ten years from Count Year, enter 10)	
Enter Model Year 2027	
Optional input: SPR Station, Yr	
Optional input: K-Factor	Enter Earliest Variable Year
Optional input: Dir. Dist.	Enter Latest Variable Year

[illegible]

APPENDIX E

NCHRP Report 684 Internal Capture Estimator

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Volcano Cliff Development TIA	Organization:	Huitt-Zollars		
Project Location:	Albuquerque	Performed By:	Nancy Lopez		
Scenario Description:	Retail - Residential	Date:	4/15/2022		
Analysis Year:	2022	Checked By:	Alejandra Gallegos		
Analysis Period:	AM Street Peak Hour	Date:	4/15/2022		

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail				105	66	39
Restaurant				0		
Cinema/Entertainment				0		
Residential				82	19	63
Hotel				0		
All Other Land Uses ²				0		
				187	85	102

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office						
Retail	1.17	1%	4%	1.16	1%	4%
Restaurant						
Cinema/Entertainment						
Residential	1.13	1%	4%	1.09	0%	2%
Hotel						
All Other Land Uses ²						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	0	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	212	98	114
Internal Capture Percentage	1%	1%	1%
External Vehicle-Trips ⁵	178	80	98
External Transit-Trips ⁶	1	1	0
External Non-Motorized Trips ⁶	7	4	3

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	1%	0%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	0%	1%
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

⁴Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

⁶Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Volcano Cliff Development TIA	Organization:	Huitt-Zollars		
Project Location:	Albuquerque	Performed By:	Nancy Lopez		
Scenario Description:	Retail - Residential	Date:	4/15/2022		
Analysis Year:	2022	Checked By:	Alejandra Gallegos		
Analysis Period:	PM Street Peak Hour	Date:	4/15/2022		

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail				229	113	116
Restaurant				0		
Cinema/Entertainment				0		
Residential				103	65	38
Hotel				0		
All Other Land Uses ²				0		
				332	178	154

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office						
Retail	1.21	0%	0%	1.18	0%	0%
Restaurant						
Cinema/Entertainment						
Residential	1.15	1%	3%	1.21	0%	4%
Hotel						
All Other Land Uses ²						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0		0	
Retail					865	
Restaurant					0	
Cinema/Entertainment					0	
Residential		865	0			
Hotel					0	

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	35	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	11	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	395	212	183
Internal Capture Percentage	23%	22%	25%
External Vehicle-Trips ⁵	252	138	114
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	2	1	1

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	8%	26%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	47%	24%
Hotel	N/A	N/A

¹ Land Use Codes (LUCs) from <i>Trip Generation Manual</i> , published by the Institute of Transportation Engineers.
² Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.
³ Enter trips assuming no transit or non-motorized trips (as assumed in ITE <i>Trip Generation Manual</i>).
⁴ Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be
⁵ Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.
⁶ Person-Trips
*Indicates computation that has been rounded to the nearest whole number.
Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

APPENDIX F

Traffic Distribution

The map displays the Volcano Cliffs Subdivision, a large, irregularly shaped area outlined in black. The subdivision is divided into numerous colored zones, each labeled with a letter and a percentage. The colors include shades of green, yellow, orange, red, purple, and blue. A network of black lines represents proposed evacuation routes, with key points labeled A through G. A north arrow is located in the top left corner. The map is overlaid on an aerial photograph showing the surrounding landscape and existing roads.

LEGEND

■ Volcano Cliffs Subdivision

Map Labels:

- North Arrow:** N
- Map Labels:** Paradise Blvd NW, Unser Blvd NW, Paseo Del Norte Blvd NE, Paseo Del Norte, Montano Rd NW, Dellyne Ave NW, Universe Blvd NW, e Blvd NE
- Zone Labels:**
 - A-100%
 - A-75% B-25%
 - B-100%
 - B-5% C-55% F-40%
 - C-100%
 - C-100%
 - D-100%
 - D-100%
 - D-100%
 - D-50% G-50%
 - D-15% G-85%
 - D-10% G-90%
 - D-100%
 - E-95%
 - F-5%
 - F-100%
 - G-100%
 - G-100%
 - G-100%
 - G-100%
 - G-100%
 - G-100%
- Evacuation Route Labels:** A, B, C, D, E, F, G

Imagery Date: 1

- HUITT-ZOLLARS

TRIP DISTRIBUTION TABLE

Volcano Cliff Subdivision

Sub Area Employment Data:

For determination of Trip Distribution for Proposed Single-Family Attached Housing

2016 and 2040 Data Taken from Mid-Region Council of Governments 2040

Socioeconomic Forecasts by Data Analysis Subsozes for the Mid-Region of New Mexico

DASZ #	% SUB AREA	2016	2040	Interpolated	Employment in Study	Dist. (Mi.)	Employment/D istance	% Employment/ Distance	A			B			C			D			E			F			G		
		Employment	Employment						% Utilizing	% Employment/ Dist Utilizing	Employment	% Utilizing	% Employment/ Dist Utilizing	Employment	% Utilizing	% Employment/ Dist Utilizing	Employment	% Utilizing	% Employment/ Dist Utilizing	Employment	% Utilizing	% Employment/ Dist Utilizing	Employment	% Utilizing	% Employment/ Dist Utilizing	Employment	% Utilizing	% Employment/ Dist Utilizing	Employment
		2016	2040	2023																									
6318	100%	15	96	2885	2885	0.65	4439	66.27%									50%	33.13%	2219						50%	33.13%	2219		
6334	100%	52	217	100	100	0.89	113	1.68%						100%	1.7%	113													
6313	100%	172	196	179	179	0.18	994	14.85%						100%	14.8%	994													
6396	99.8%	10	22	14	13	1.29	10	0.16%									100%	0.16%	10										
6397	96%	254	278	261	251	1.39	180	2.69%	80%	2.2%	144						20%	0.54%	36										
6317	100%	5	5	5	5	0.85	6	0.09%									15%	0.01%	1						85%	0.07%	5		
6333	65%	120	126	122	79	1.63	49	0.73%	75%	0.5%	36	25%	0.2%	12															
6332	42%	101	101	101	42	1.65	26	0.38%				100%	0.4%	26															
6336	24%	21	21	21	5	1.83	3	0.04%				100%	0.0%	3															
6316	41%	59	60	59	24	1.35	18	0.27%				5%	0.0%	1	55%	0.1%	10						40%	0.11%	7				
6315	70%	25	26	25	18	1.31	14	0.20%											95%	0.19%	13	5%	0.01%	1					
6228	100%	137	137	137	137	1.15	119	1.78%																	100%	1.78%	119		
6241	67%	105	102	104	70	1.5	47	0.69%																	100%	0.69%	47		
6395	61%	0	0	0	0	1.82	0	0.00%									100%	0.00%	0										
6393	11%	66	123	83	9	1.91	5	0.07%									100%	0.07%	5										
6398	61%	211	226	215	131	1.72	76	1.14%	100%	1.1%	76																		
6223	69%	348	366	353	244	1.79	136	2.03%									100%	2.03%	136										
6222	50%	81	75	79	40	1.87	21	0.32%									10%	0.03%	2						90%	0.28%	19		
6335	100%	6	6	6	6	1.26	5	0.07%				100%	0.1%	5															
6226	100%	237	256	243	243	1.54	157	2.35%																	100%	2.35%	157		
6227	100%	66	70	67	67	1.45	46	0.69%																	100%	0.69%	46		
6314	2%	0	0	0	0	1.48	0	0.00%																	100%	0.00%	0		
6242	77%	110	123	114	88	1.78	49	0.73%																	100%	0.73%	49		
6225	78%	307	341	317	247	1.75	141	2.11%																	100%	2.11%	141		
6399	30%	256	274	261	78	1.77	44	0.66%	100%	0.7%	44																		
TOTAL					4961		6698			4.5%			0.7%			16.7%		36.0%			0.2%			0.1%			41.8%		

TRIP DISTRIBUTION TABLE

Volcano Cliff Subdivision
Sub Area Employment Data:
For determination of Trip Distribution for Proposed Multifamily Housing (Low Rise)
2016 and 2040 Data Taken from Mid-Region Council of Governments 2040
Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

									A			B			C			D			E			F			G		
DASZ #	% SUB AREA	2016 Employment	2040 Employment	Interpolated	Employment in Study	Dist. (Mi.)	Employment/ Distance	% Employment/ Distance	% Utilizing	% Employment/ Dist Utilizing	Employment	% Utilizing	% Employment/ Dist Utilizing	Employment	% Utilizing	% Employment/ Dist Utilizing	Employment	% Utilizing	% Employment/ Dist Utilizing	Employment	% Utilizing	% Employment/ Dist Utilizing	Employment	% Utilizing	% Employment/ Dist Utilizing	Employment	% Utilizing	% Employment/ Dist Utilizing	Employment
		2016	2040	2025																									
6318	100%	15	96	2885	2885	0.65	4439	65.94%										50%	32.97%	2219						50%	32.97%	2219	
6334	100%	52	217	114	114	0.89	128	1.90%							100%	1.9%	128												
6313	100%	172	196	181	181	0.18	1006	14.94%							100%	14.9%	1006												
6396	99.8%	10	22	15	14	1.29	11	0.17%										100%	0.17%	11									
6397	96%	254	278	263	252	1.39	182	2.70%	80%	2.2%	145							20%	0.54%	36									
6317	100%	5	5	5	5	0.85	6	0.09%										15%	0.01%	1						85%	0.07%	5	
6333	65%	120	126	122	80	1.63	49	0.73%	75%	0.5%	37	25%	0.2%	12															
6332	42%	101	101	101	42	1.65	26	0.38%				100%	0.4%	26															
6336	24%	21	21	21	5	1.83	3	0.04%				100%	0.0%	3															
6316	41%	59	60	59	24	1.35	18	0.27%				5%	0.0%	1	55%	0.1%	10						40%	0.11%	7				
6315	70%	25	26	25	18	1.31	14	0.20%													95%	0.19%	13	5%	0.01%	1			
6228	100%	137	137	137	137	1.15	119	1.77%																		100%	1.77%	119	
6241	67%	105	102	104	70	1.5	46	0.69%																		100%	0.69%	46	
6395	61%	0	0	0	0	1.82	0	0.00%										100%	0.00%	0									
6393	11%	66	123	87	10	1.91	5	0.07%										100%	0.07%	5									
6398	61%	211	226	217	132	1.72	77	1.14%	100%	1.1%	77																		
6223	69%	348	366	355	245	1.79	137	2.03%										100%	2.03%	137									
6222	50%	81	75	79	39	1.87	21	0.31%										10%	0.03%	2						90%	0.28%	19	
6335	100%	6	6	6	6	1.26	5	0.07%				100%	0.1%	5															
6226	100%	237	256	244	244	1.54	159	2.35%																		100%	2.35%	159	
6227	100%	66	70	68	68	1.45	47	0.69%																		100%	0.69%	47	
6314	2%	0	0	0	0	1.48	0	0.00%																		100%	0.00%	0	
6242	77%	110	123	115	88	1.78	50	0.74%																		100%	0.74%	50	
6225	78%	307	341	320	249	1.75	143	2.12%																		100%	2.12%	143	
6399	30%	256	274	263	79	1.77	45	0.66%	100%	0.7%	45																		
					4988		6732			4.5%			0.7%			17.0%			35.8%			0.2%			0.1%			41.7%	

TRIP DISTRIBUTION TABLE

Volcano Cliff Subdivision

Sub Area Employment Data:

For determination of Trip Distribution for Proposed Retail Commercial

2016 and 2040 Data Taken from Mid-Region Council of Governments 2040

Socioeconomic Forecasts by Data Analysis Subsozes for the Mid-Region of New Mexico

							A			B			C			D			E			F			G		
DASZ #	% SUB AREA	2016 Population	2040 Population	Interpolated	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Employment/ Dist Utilizing	Employment	% Utilizing	% Employment/ Dist Utilizing	Employment	% Utilizing	% Employment/ Dist Utilizing	Employment	% Utilizing	% Employment/ Dist Utilizing	Employment	% Utilizing	% Employment/ Dist Utilizing	Employment	% Utilizing	% Employment/ Dist Utilizing	Employment
		2016	2040	2023																							
6318	100%	385	606	449	449	0.016720664										50%	0.008360332	22500%						50%	0.008360332	22500%	
6334	100%	2959	2762	2902	2902	0.108069862							100.0%	0.108069862	290200%												
6313	100%	0	0	0	0	0							100.0%	0	0%												
6396	99.8%	545	515	536	535	0.019923286										100.0%	0.019923286	53500%									
6397	96%	1215	1653	1343	1296	0.048262764	1	3.86%	103700%							20.0%	0.009652553	25900%									
6317	100%	93	291	151	151	0.005623208										15.0%	0.000843481	2300%						85%	0.004779727	12800%	
6333	63%	4085	3489	3911	2471	0.092019514	1	6.90%	185300%	25.0%	0.023004878	61800%															
6332	42%	5358	4356	5066	2141	0.079730384				100.0%	0.079730384	214100%															
6336	24%	2767	2219	2607	620	0.023088668				100.0%	0.023088668	62000%															
6316	41%	89	2325	741	307	0.011432615				5.0%	0.000571631	1500%	55.0%	0.006287938	16900%												
6315	70%	2403	2368	2393	1679	0.062525602													0.95	0.059399322	159500%	5.00%	0.004573046	12300%	8400%		
6228	100%	1523	1503	1517	1517	0.056492757																		100%	0.056492757	151700%	
6241	67%	2409	2303	2378	1585	0.059025062																		100%	0.059025062	158500%	
6395	61%	0	26	8	5	0.000186199										100.0%	0.000186199	500%									
6393	11%	1271	1372	1300	144	0.005362529										100.0%	0.005362529	14400%									
6398	61%	2584	2488	2556	1555	0.057907869	1	5.79%	155500%																		
6223	69%	921	862	904	621	0.023125908										100.0%	0.023125908	62100%									
6222	50%	2939	2960	2945	1458	0.054295609										10.0%	0.005429561	14600%							90%	0.048866048	131200%
6335	100%	546	582	557	557	0.020742561				100.0%	0.020742561	55700%															
6226	100%	1563	1485	1540	1540	0.057349272																		100%	0.057349272	154000%	
6227	100%	1834	1777	1817	1817	0.067664693																		100%	0.067664693	181700%	
6314	2%	0	1	0	0	0																		100%	0	0%	
6242	77%	1829	1927	1858	1431	0.053290135																		100%	0.053290135	143100%	
6225	78%	1784	1905	1819	1421	0.052917737																		100%	0.052917737	142100%	
6399	30%	2232	2058	2181	651	0.024243101	1	2.42%	65100%																		
					26853			0.19			14.7%			11.4%			7.3%			5.9%			0.8%			40.9%	

APPENDIX G

Existing 2022 Synchro Reports

Existing 2022 AM
1: Universe Blvd & Paseo Del Norte Blvd

Lanes, Volumes, Timings
04/14/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	333	57	71	152	120	9	198	89	278	455	237
Future Volume (vph)	140	333	57	71	152	120	9	198	89	278	455	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		120	140		0	130		20	495		255
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			90			65			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.936				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1744	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.148			0.197			0.340			0.482		
Satd. Flow (perm)	276	1863	1583	367	1744	0	633	1863	1583	898	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			124		31				164			269
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		207			542			281			722	
Travel Time (s)		4.7			10.6			5.5			14.1	
Peak Hour Factor	0.84	0.82	0.79	0.61	0.69	0.73	0.45	0.79	0.59	0.87	0.78	0.88
Adj. Flow (vph)	167	406	72	116	220	164	20	251	151	320	583	269
Shared Lane Traffic (%)												
Lane Group Flow (vph)	167	406	72	116	384	0	20	251	151	320	583	269
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			19	
Link Offset(ft)		0			5			0			-10	
Crosswalk Width(ft)		40			16			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8

Existing 2022 AM
1: Universe Blvd & Paseo Del Norte Blvd

Lanes, Volumes, Timings
04/14/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	3.0	20.0	20.0	3.0	20.0		3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	9.5	34.5	34.5	9.5	25.5		9.5	23.0	23.0	9.5	23.0	23.0
Total Split (s)	17.0	32.0	32.0	13.0	29.0		13.0	45.0	45.0	19.0	51.0	51.0
Total Split (%)	15.5%	29.1%	29.1%	11.8%	26.4%		11.8%	40.9%	40.9%	17.3%	46.4%	46.4%
Maximum Green (s)	13.5	26.5	26.5	9.5	23.5		9.5	40.0	40.0	15.5	46.0	46.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.5	1.5	1.5	0.5	1.5		0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.5	5.5	3.5	5.5		3.5	5.0	5.0	3.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.5	3.0	3.0	1.5	3.0		1.5	2.0	2.0	1.5	2.0	2.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		22.0	22.0		12.0			7.0	7.0		9.0	9.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effect Green (s)	40.6	27.9	27.9	35.3	25.2		49.0	42.9	42.9	61.5	56.5	56.5
Actuated g/C Ratio	0.37	0.25	0.25	0.32	0.23		0.45	0.39	0.39	0.56	0.51	0.51
v/c Ratio	0.67	0.86	0.15	0.53	0.91		0.06	0.35	0.21	0.53	0.61	0.28
Control Delay	37.2	58.4	1.5	31.8	65.1		12.7	26.3	3.8	16.8	23.6	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.2	58.4	1.5	31.8	65.1		12.7	26.3	3.8	16.8	23.6	3.0
LOS	D	E	A	C	E		B	C	A	B	C	A
Approach Delay		46.5			57.4			17.6			17.0	
Approach LOS		D			E			B			B	
Queue Length 50th (ft)	79	273	0	53	244		6	128	0	118	265	0
Queue Length 95th (ft)	120	#377	0	61	259		9	169	0	169	359	41
Internal Link Dist (ft)		127			462			201			642	
Turn Bay Length (ft)			120	140			130		20	495		255
Base Capacity (vph)	287	475	496	243	422		408	727	718	624	957	944
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.85	0.15	0.48	0.91		0.05	0.35	0.21	0.51	0.61	0.28

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 31.4

Intersection LOS: C

Intersection Capacity Utilization 68.6%

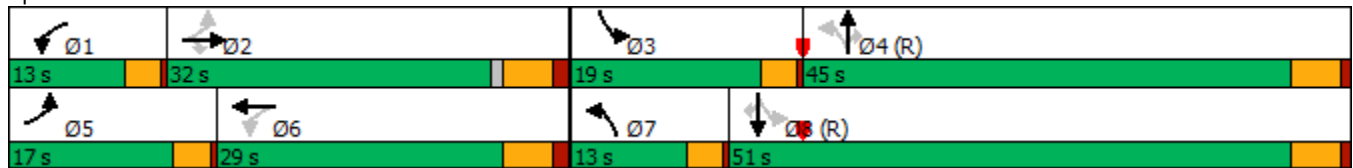
ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Universe Blvd & Paseo Del Norte Blvd



Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	25	53	154	541	125
Future Vol, veh/h	11	25	53	154	541	125
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	200	-	-	190
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	39	45	49	92	92	47
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	56	108	167	588	266

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	971	588	854	0	-	0
Stage 1	588	-	-	-	-	-
Stage 2	383	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	280	509	785	-	-	-
Stage 1	555	-	-	-	-	-
Stage 2	689	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	241	509	785	-	-	-
Mov Cap-2 Maneuver	241	-	-	-	-	-
Stage 1	478	-	-	-	-	-
Stage 2	689	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.9	4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	785	-	241	509	-	-
HCM Lane V/C Ratio	0.138	-	0.117	0.109	-	-
HCM Control Delay (s)	10.3	-	21.9	12.9	-	-
HCM Lane LOS	B	-	C	B	-	-
HCM 95th %tile Q(veh)	0.5	-	0.4	0.4	-	-

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	207	0	0	566
Future Vol, veh/h	0	0	207	0	0	566
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	225	0	0	615

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	840	225	0	0	225
Stage 1	225	-	-	-	-
Stage 2	615	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	335	814	-	-	1344
Stage 1	812	-	-	-	-
Stage 2	539	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	335	814	-	-	1344
Mov Cap-2 Maneuver	335	-	-	-	-
Stage 1	812	-	-	-	-
Stage 2	539	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1344
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	207	0	0	566
Future Vol, veh/h	0	0	207	0	0	566
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	225	0	0	615
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	840	225	0	0	225	0
Stage 1	225	-	-	-	-	-
Stage 2	615	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	335	814	-	-	1344	-
Stage 1	812	-	-	-	-	-
Stage 2	539	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	335	814	-	-	1344	-
Mov Cap-2 Maneuver	335	-	-	-	-	-
Stage 1	812	-	-	-	-	-
Stage 2	539	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	1344	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	-	-	0	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	207	0	0	566
Future Vol, veh/h	0	0	207	0	0	566
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	225	0	0	615
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	840	225	0	0	225	0
Stage 1	225	-	-	-	-	-
Stage 2	615	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	335	814	-	-	1344	-
Stage 1	812	-	-	-	-	-
Stage 2	539	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	335	814	-	-	1344	-
Mov Cap-2 Maneuver	335	-	-	-	-	-
Stage 1	812	-	-	-	-	-
Stage 2	539	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	1344	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	-	-	0	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	207	0	0	566
Future Vol, veh/h	0	0	207	0	0	566
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	225	0	0	615

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	840	225	0
Stage 1	225	-	-
Stage 2	615	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	335	814	-
Stage 1	812	-	-
Stage 2	539	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	335	814	-
Mov Cap-2 Maneuver	335	-	-
Stage 1	812	-	-
Stage 2	539	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1344
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Existing 2022 AM
7: Scenic Dr/Universe Blvd & Rainbow Blvd

Lanes, Volumes, Timings
04/14/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	2	406	14	10	338	165	53	40	47	524	27	15
Future Volume (vph)	2	406	14	10	338	165	53	40	47	524	27	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	160		0	115		0	125		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			60			20			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992			0.959			0.920			0.925	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3511	0	1770	3394	0	1770	1714	0	1770	1723	0
Flt Permitted	0.200			0.274			0.710			0.602		
Satd. Flow (perm)	373	3511	0	510	3394	0	1323	1714	0	1121	1723	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			57			50			36	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		529			473			218			343	
Travel Time (s)		10.3			9.2			5.0			7.8	
Peak Hour Factor	0.50	0.78	0.50	0.50	0.67	0.86	0.49	0.71	0.73	0.87	0.75	0.42
Adj. Flow (vph)	4	521	28	20	504	192	108	56	64	602	36	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	549	0	20	696	0	108	120	0	602	72	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			22			12			12	
Link Offset(ft)		0			-5			15			-5	
Crosswalk Width(ft)		30			40			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		

Existing 2022 AM
7: Scenic Dr/Universe Blvd & Rainbow Blvd

Lanes, Volumes, Timings
04/14/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	3.0	16.0		3.0	16.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	9.5	23.5		9.5	23.5		9.5	36.5		9.5	36.5	
Total Split (s)	16.0	36.0		16.0	34.0		16.0	24.0		24.0	24.0	
Total Split (%)	16.0%	36.0%		16.0%	34.0%		16.0%	24.0%		24.0%	24.0%	
Maximum Green (s)	12.5	30.5		12.5	28.5		12.5	18.5		20.5	18.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	1.5		0.5	1.5		0.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	5.5		3.5	5.5		3.5	5.5		3.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		1.5	4.0		1.5	4.0	
Recall Mode	None	Min		None	Min		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		9.0			9.0			24.0			24.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	28.0	24.3		29.4	26.2		38.5	29.8		63.1	51.0	
Actuated g/C Ratio	0.28	0.24		0.29	0.26		0.38	0.30		0.63	0.51	
v/c Ratio	0.02	0.64		0.10	0.75		0.20	0.22		0.68	0.08	
Control Delay	20.0	36.8		21.8	35.8		13.6	20.5		17.3	10.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.0	36.8		21.8	35.8		13.6	20.5		17.3	10.4	
LOS	B	D		C	D		B	C		B	B	
Approach Delay		36.7			35.4			17.3			16.5	
Approach LOS		D			D			B			B	
Queue Length 50th (ft)	2	160		9	198		23	32		183	10	
Queue Length 95th (ft)	4	168		12	162		33	63		374	34	
Internal Link Dist (ft)		449			393			138			263	
Turn Bay Length (ft)	140			160			115			125		
Base Capacity (vph)	285	1076		309	1096		642	546		888	895	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.01	0.51		0.06	0.64		0.17	0.22		0.68	0.08	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 60 (60%), Referenced to phase 4:NETL and 8:SWTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 28.0

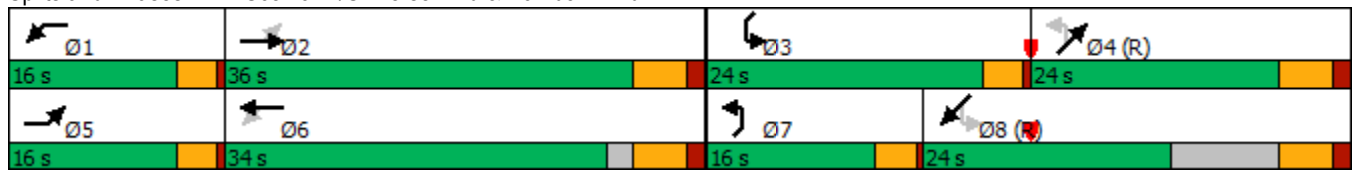
Intersection LOS: C

Intersection Capacity Utilization 59.5%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 7: Scenic Dr/Universe Blvd & Rainbow Blvd



Intersection

Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	4.12	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	2.218	-
Pot Cap-1 Maneuver	-	1622	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1622	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1622	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1622	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection

Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	4.12	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	2.218	-
Pot Cap-1 Maneuver	-	1622	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1622	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1622	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	1	0	-	0	1	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	0	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1622	-	-	-	1022	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1622	-	-	-	1022	1084
Mov Cap-2 Maneuver	-	-	-	-	1022	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1622	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	-	0	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Exsiting 2022 PM
1: Universe Blvd & Paseo Del Norte Blvd

Lanes, Volumes, Timings
04/14/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	234	5	99	321	288	6	351	75	143	302	252
Future Volume (vph)	204	234	5	99	321	288	6	351	75	143	302	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		120	140		0	130		20	495		255
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			90			65			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.931				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1734	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.093			0.525			0.470			0.194		
Satd. Flow (perm)	173	1863	1583	978	1734	0	875	1863	1583	361	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			89		44				94			265
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		207			542			281			722	
Travel Time (s)		4.7			10.6			5.5			14.1	
Peak Hour Factor	0.73	0.81	0.62	0.80	0.91	0.95	0.75	0.85	0.81	0.79	0.81	0.95
Adj. Flow (vph)	279	289	8	124	353	303	8	413	93	181	373	265
Shared Lane Traffic (%)												
Lane Group Flow (vph)	279	289	8	124	656	0	8	413	93	181	373	265
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			19	
Link Offset(ft)		0			5			0			-10	
Crosswalk Width(ft)		40			16			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8

Exsiting 2022 PM
1: Universe Blvd & Paseo Del Norte Blvd

Lanes, Volumes, Timings
04/14/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	3.0	20.0	20.0	3.0	20.0		3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	9.5	34.5	34.5	9.5	25.5		9.5	23.0	23.0	9.5	23.0	23.0
Total Split (s)	15.0	45.0	45.0	15.0	45.0		15.0	35.0	35.0	15.0	35.0	35.0
Total Split (%)	13.6%	40.9%	40.9%	13.6%	40.9%		13.6%	31.8%	31.8%	13.6%	31.8%	31.8%
Maximum Green (s)	11.5	39.5	39.5	11.5	39.5		11.5	30.0	30.0	11.5	30.0	30.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.5	1.5	1.5	0.5	1.5		0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.5	5.5	3.5	5.5		3.5	5.0	5.0	3.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.5	3.0	3.0	1.5	3.0		1.5	2.0	2.0	1.5	2.0	2.0
Recall Mode	None	Min	Min	None	Min		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		22.0	22.0		12.0			7.0	7.0		9.0	9.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effect Green (s)	55.7	42.9	42.9	49.6	39.5		37.2	31.4	31.4	46.5	43.3	43.3
Actuated g/C Ratio	0.51	0.39	0.39	0.45	0.36		0.34	0.29	0.29	0.42	0.39	0.39
v/c Ratio	1.10	0.40	0.01	0.25	1.01		0.02	0.78	0.18	0.64	0.51	0.34
Control Delay	113.9	26.8	0.0	15.6	71.3		19.2	48.1	7.1	31.5	29.1	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	113.9	26.8	0.0	15.6	71.3		19.2	48.1	7.1	31.5	29.1	4.3
LOS	F	C	A	B	E		B	D	A	C	C	A
Approach Delay		68.6			62.4			40.3			21.6	
Approach LOS		E			E			D			C	
Queue Length 50th (ft)	~169	145	0	44	~445		3	272	0	81	191	0
Queue Length 95th (ft)	#235	201	0	67	#692		11	#369	29	113	278	56
Internal Link Dist (ft)		127			462			201			642	
Turn Bay Length (ft)			120	140			130		20	495		255
Base Capacity (vph)	254	727	672	554	650		445	531	519	299	733	784
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.10	0.40	0.01	0.22	1.01		0.02	0.78	0.18	0.61	0.51	0.34

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 48 (44%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.10

Intersection Signal Delay: 47.1

Intersection LOS: D

Intersection Capacity Utilization 87.6%

ICU Level of Service E

Analysis Period (min) 15

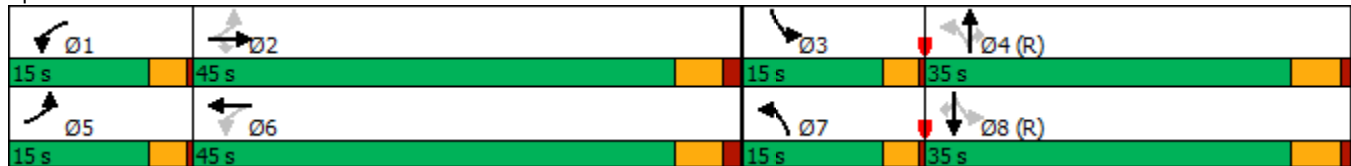
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Universe Blvd & Paseo Del Norte Blvd



Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	4	1	431	257	0
Future Vol, veh/h	2	4	1	431	257	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	200	-	-	190
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	33	25	92	93	47
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	12	4	468	276	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	752	276	276	0	-	0
Stage 1	276	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	378	763	1287	-	-	-
Stage 1	771	-	-	-	-	-
Stage 2	625	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	377	763	1287	-	-	-
Mov Cap-2 Maneuver	377	-	-	-	-	-
Stage 1	769	-	-	-	-	-
Stage 2	625	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	11	0.1		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1287	-	377	763	-	-
HCM Lane V/C Ratio	0.003	-	0.011	0.016	-	-
HCM Control Delay (s)	7.8	-	14.7	9.8	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0	0	-	-

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	432	0	0	261
Future Vol, veh/h	0	0	432	0	0	261
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	470	0	0	284

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	754	470	0
Stage 1	470	-	-
Stage 2	284	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	377	594	-
Stage 1	629	-	-
Stage 2	764	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	377	594	-
Mov Cap-2 Maneuver	377	-	-
Stage 1	629	-	-
Stage 2	764	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1092
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	432	0	0	261
Future Vol, veh/h	0	0	432	0	0	261
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	470	0	0	284

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	754	470	0	0	470	0
Stage 1	470	-	-	-	-	-
Stage 2	284	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	377	594	-	-	1092	-
Stage 1	629	-	-	-	-	-
Stage 2	764	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	377	594	-	-	1092	-
Mov Cap-2 Maneuver	377	-	-	-	-	-
Stage 1	629	-	-	-	-	-
Stage 2	764	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1092
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	432	0	0	261
Future Vol, veh/h	0	0	432	0	0	261
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	470	0	0	284

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	754	470	0
Stage 1	470	-	-
Stage 2	284	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	377	594	-
Stage 1	629	-	-
Stage 2	764	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	377	594	-
Mov Cap-2 Maneuver	377	-	-
Stage 1	629	-	-
Stage 2	764	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1092
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	432	0	0	261
Future Vol, veh/h	0	0	432	0	0	261
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	470	0	0	284

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	754	470	0
Stage 1	470	-	-
Stage 2	284	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	377	594	-
Stage 1	629	-	-
Stage 2	764	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	377	594	-
Mov Cap-2 Maneuver	377	-	-
Stage 1	629	-	-
Stage 2	764	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1092
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Exsiting 2022 PM
7: Scenic Dr/Universe Blvd & Rainbow Blvd

Lanes, Volumes, Timings
04/14/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	2	221	10	58	337	383	10	47	34	214	45	2
Future Volume (vph)	2	221	10	58	337	383	10	47	34	214	45	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	160		0	115		0	125		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			60			20			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.919			0.940			0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3253	0	1770	1751	0	1770	1848	0
Flt Permitted	0.206			0.398			0.710			0.629		
Satd. Flow (perm)	384	3514	0	741	3253	0	1323	1751	0	1172	1848	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			304			35			3	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		529			473			218			343	
Travel Time (s)		10.3			9.2			5.0			7.8	
Peak Hour Factor	0.50	0.65	0.62	0.85	0.90	0.88	0.62	0.78	0.85	0.84	0.66	0.50
Adj. Flow (vph)	4	340	16	68	374	435	16	60	40	255	68	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	356	0	68	809	0	16	100	0	255	72	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			22			12			12	
Link Offset(ft)		0			-5			15			-5	
Crosswalk Width(ft)		30			40			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		

Exsiting 2022 PM
7: Scenic Dr/Universe Blvd & Rainbow Blvd

Lanes, Volumes, Timings
04/14/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	3.0	16.0		3.0	16.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	9.5	23.5		9.5	23.5		9.5	36.5		9.5	36.5	
Total Split (s)	16.0	24.0		16.0	24.0		16.0	24.0		24.0	24.0	
Total Split (%)	18.2%	27.3%		18.2%	27.3%		18.2%	27.3%		27.3%	27.3%	
Maximum Green (s)	12.5	18.5		12.5	18.5		12.5	18.5		20.5	18.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	1.5		0.5	1.5		0.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	5.5		3.5	5.5		3.5	5.5		3.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		1.5	4.0		1.5	4.0	
Recall Mode	None	Min		None	Min		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		9.0			9.0			24.0			24.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	22.8	17.4		27.6	24.0		44.0	37.6		53.4	49.6	
Actuated g/C Ratio	0.26	0.20		0.31	0.27		0.50	0.43		0.61	0.56	
v/c Ratio	0.02	0.51		0.22	0.73		0.02	0.13		0.33	0.07	
Control Delay	18.0	33.5		21.0	21.6		10.1	14.2		10.6	11.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	18.0	33.5		21.0	21.6		10.1	14.2		10.6	11.8	
LOS	B	C		C	C		B	B		B	B	
Approach Delay		33.3			21.5			13.6			10.8	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)	2	94		27	128		3	21		60	15	
Queue Length 95th (ft)	4	85		45	193		10	55		116	37	
Internal Link Dist (ft)		449			393			138			263	
Turn Bay Length (ft)	140			160			115			125		
Base Capacity (vph)	317	776		378	1124		834	767		850	1043	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.01	0.46		0.18	0.72		0.02	0.13		0.30	0.07	

Intersection Summary

Area Type: Other

Cycle Length: 88

Actuated Cycle Length: 88

Offset: 48 (55%), Referenced to phase 4:NETL and 8:SWTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 21.4

Intersection LOS: C

Intersection Capacity Utilization 56.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 7: Scenic Dr/Universe Blvd & Rainbow Blvd

 Ø1 16 s	 Ø2 24 s	 Ø3 24 s	 Ø4 (R) 24 s
 Ø5 16 s	 Ø6 24 s	 Ø7 16 s	 Ø8 (R) 24 s

Intersection

Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	4.12	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	2.218	-
Pot Cap-1 Maneuver	-	1622	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1622	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1622	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		0	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1622	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection

Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1622
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1622
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1622	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR

Lane Configurations

Traffic Vol, veh/h	0	0	0	0	0	0

Future Vol, veh/h	0	0	0	0	0	0

Conflicting Peds, #/hr	0	0	0	0	0	0

Sign Control	Free	Free	Free	Free	Stop	Stop

RT Channelized	-	None	-	None	-	None

Storage Length	-	-	-	-	0	-

Veh in Median Storage, #	-	0	0	-	0	-

Grade, %	-	0	0	-	0	-

Peak Hour Factor	92	92	92	92	92	92

Heavy Vehicles, %	2	2	2	2	2	2

Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor2

Conflicting Flow All	1	0	0

Stage 1	-	-	1

Stage 2	-	-	0

Critical Hdwy	4.12	-	6.42

Critical Hdwy Stg 1	-	-	5.42

Critical Hdwy Stg 2	-	-	5.42

Follow-up Hdwy	2.218	-	3.518

Pot Cap-1 Maneuver	1622	-	1022

Stage 1	-	-	1022

Stage 2	-	-	-

Platoon blocked, %	-	-	-

Mov Cap-1 Maneuver	1622	-	1022

Mov Cap-2 Maneuver	-	-	1022

Stage 1	-	-	1022

Stage 2	-	-	-

Approach	EB	WB	SB

HCM Control Delay, s	0	0	0

HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1

Capacity (veh/h)	1622	-	-	-	-

HCM Lane V/C Ratio	-	-	-	-	-

HCM Control Delay (s)	0	-	-	-	0

HCM Lane LOS	A	-	-	-	A

HCM 95th %tile Q(veh)	0	-	-	-	-

APPENDIX H

Phase 1 2023 - No Build Synchro Reports

No Build 2023 AM
1: Universe Blvd & Paseo Del Norte Blvd

Lanes, Volumes, Timings
04/14/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	410	59	92	180	124	11	205	153	287	469	248
Future Volume (vph)	160	410	59	92	180	124	11	205	153	287	469	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		120	140		0	130		20	495		255
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			90			65			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.941				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1753	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.142			0.156			0.300			0.466		
Satd. Flow (perm)	265	1863	1583	291	1753	0	559	1863	1583	868	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			124		27				164			282
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		207			542			281			722	
Travel Time (s)		4.7			10.6			5.5			14.1	
Peak Hour Factor	0.84	0.82	0.79	0.61	0.69	0.73	0.45	0.79	0.59	0.87	0.78	0.88
Adj. Flow (vph)	190	500	75	151	261	170	24	259	259	330	601	282
Shared Lane Traffic (%)												
Lane Group Flow (vph)	190	500	75	151	431	0	24	259	259	330	601	282
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			19	
Link Offset(ft)		0			5			0			-10	
Crosswalk Width(ft)		40			16			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8

No Build 2023 AM
1: Universe Blvd & Paseo Del Norte Blvd

Lanes, Volumes, Timings
04/14/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	3.0	20.0	20.0	3.0	20.0		3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	9.5	34.5	34.5	9.5	25.5		9.5	23.0	23.0	9.5	23.0	23.0
Total Split (s)	17.0	32.0	32.0	13.0	29.0		13.0	45.0	45.0	19.0	51.0	51.0
Total Split (%)	15.5%	29.1%	29.1%	11.8%	26.4%		11.8%	40.9%	40.9%	17.3%	46.4%	46.4%
Maximum Green (s)	13.5	26.5	26.5	9.5	23.5		9.5	40.0	40.0	15.5	46.0	46.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.5	1.5	1.5	0.5	1.5		0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.5	5.5	3.5	5.5		3.5	5.0	5.0	3.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.5	3.0	3.0	1.5	3.0		1.5	2.0	2.0	1.5	2.0	2.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		22.0	22.0		12.0			7.0	7.0		9.0	9.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effect Green (s)	41.4	28.2	28.2	36.4	25.6		47.8	41.6	41.6	60.5	53.8	53.8
Actuated g/C Ratio	0.38	0.26	0.26	0.33	0.23		0.43	0.38	0.38	0.55	0.49	0.49
v/c Ratio	0.75	1.05	0.15	0.71	1.01		0.08	0.37	0.37	0.56	0.66	0.31
Control Delay	42.2	95.0	1.9	42.3	85.8		12.8	27.1	11.1	17.8	26.5	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.2	95.0	1.9	42.3	85.8		12.8	27.1	11.1	17.8	26.5	3.0
LOS	D	F	A	D	F		B	C	B	B	C	A
Approach Delay		72.7			74.5			18.8			18.7	
Approach LOS		E			E			B			B	
Queue Length 50th (ft)	91	~393	0	71	~312		7	133	45	123	327	0
Queue Length 95th (ft)	136	#514	0	77	#330		10	175	37	175	375	42
Internal Link Dist (ft)		127			462			201			642	
Turn Bay Length (ft)			120	140			130		20	495		255
Base Capacity (vph)	287	477	498	226	428		371	704	700	604	911	918
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.66	1.05	0.15	0.67	1.01		0.06	0.37	0.37	0.55	0.66	0.31

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.05

Intersection Signal Delay: 42.5

Intersection LOS: D

Intersection Capacity Utilization 71.3%

ICU Level of Service C

Analysis Period (min) 15

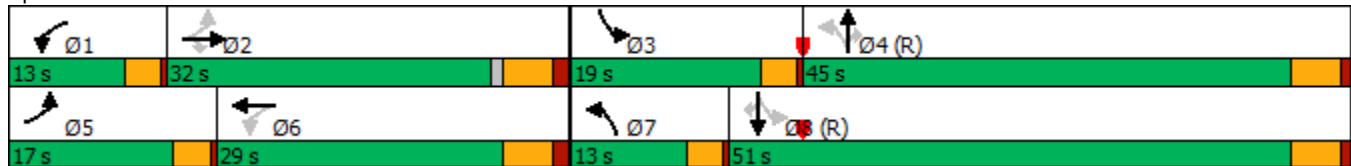
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Universe Blvd & Paseo Del Norte Blvd



Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	26	55	166	582	129
Future Vol, veh/h	12	26	55	166	582	129
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	200	-	-	190
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	39	45	49	92	92	47
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	31	58	112	180	633	274
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1037	633	907	0	-	0
Stage 1	633	-	-	-	-	-
Stage 2	404	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	256	480	750	-	-	-
Stage 1	529	-	-	-	-	-
Stage 2	674	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	218	480	750	-	-	-
Mov Cap-2 Maneuver	218	-	-	-	-	-
Stage 1	450	-	-	-	-	-
Stage 2	674	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	17.2	4.1		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	750	-	218	480	-	-
HCM Lane V/C Ratio	0.15	-	0.141	0.12	-	-
HCM Control Delay (s)	10.6	-	24.2	13.5	-	-
HCM Lane LOS	B	-	C	B	-	-
HCM 95th %tile Q(veh)	0.5	-	0.5	0.4	-	-

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	221	0	0	607
Future Vol, veh/h	0	0	221	0	0	607
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	240	0	0	660

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	900	240	0
Stage 1	240	-	-
Stage 2	660	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	309	799	-
Stage 1	800	-	-
Stage 2	514	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	309	799	-
Mov Cap-2 Maneuver	309	-	-
Stage 1	800	-	-
Stage 2	514	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1327
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	221	0	0	607
Future Vol, veh/h	0	0	221	0	0	607
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	240	0	0	660

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	900	240	0
Stage 1	240	-	-
Stage 2	660	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	309	799	-
Stage 1	800	-	-
Stage 2	514	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	309	799	-
Mov Cap-2 Maneuver	309	-	-
Stage 1	800	-	-
Stage 2	514	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1327
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	221	0	0	607
Future Vol, veh/h	0	0	221	0	0	607
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	240	0	0	660
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	900	240	0	0	240	0
Stage 1	240	-	-	-	-	-
Stage 2	660	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	309	799	-	-	1327	-
Stage 1	800	-	-	-	-	-
Stage 2	514	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	309	799	-	-	1327	-
Mov Cap-2 Maneuver	309	-	-	-	-	-
Stage 1	800	-	-	-	-	-
Stage 2	514	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	1327	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	-	-	0	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	221	0	0	607
Future Vol, veh/h	0	0	221	0	0	607
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	240	0	0	660
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	900	240	0	0	240	0
Stage 1	240	-	-	-	-	-
Stage 2	660	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	309	799	-	-	1327	-
Stage 1	800	-	-	-	-	-
Stage 2	514	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	309	799	-	-	1327	-
Mov Cap-2 Maneuver	309	-	-	-	-	-
Stage 1	800	-	-	-	-	-
Stage 2	514	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	1327	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	-	-	0	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	3	459	15	11	363	177	55	42	49	564	28	16
Future Volume (vph)	3	459	15	11	363	177	55	42	49	564	28	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	160		0	115		0	125		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			60			20			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.959			0.920			0.924	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3394	0	1770	1714	0	1770	1721	0
Flt Permitted	0.183			0.241			0.708			0.553		
Satd. Flow (perm)	341	3514	0	449	3394	0	1319	1714	0	1030	1721	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			57			50			38	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		529			473			218			343	
Travel Time (s)		10.3			9.2			5.0			7.8	
Peak Hour Factor	0.50	0.78	0.50	0.50	0.67	0.86	0.49	0.71	0.73	0.87	0.75	0.42
Adj. Flow (vph)	6	588	30	22	542	206	112	59	67	648	37	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	618	0	22	748	0	112	126	0	648	75	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			22			12			12	
Link Offset(ft)		0			-5			15			-5	
Crosswalk Width(ft)		30			40			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		

No Build 2023 AM
7: Scenic Dr/Universe Blvd & Rainbow Blvd

Lanes, Volumes, Timings
04/14/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	3.0	16.0		3.0	16.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	9.5	23.5		9.5	23.5		9.5	36.5		9.5	36.5	
Total Split (s)	16.0	36.0		16.0	34.0		16.0	24.0		24.0	24.0	
Total Split (%)	16.0%	36.0%		16.0%	34.0%		16.0%	24.0%		24.0%	24.0%	
Maximum Green (s)	12.5	30.5		12.5	28.5		12.5	18.5		20.5	18.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	1.5		0.5	1.5		0.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	5.5		3.5	5.5		3.5	5.5		3.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		1.5	4.0		1.5	4.0	
Recall Mode	None	Min		None	Min		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		9.0			9.0			24.0			24.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	29.9	26.1		31.2	28.0		30.7	21.8		61.3	48.9	
Actuated g/C Ratio	0.30	0.26		0.31	0.28		0.31	0.22		0.61	0.49	
v/c Ratio	0.04	0.67		0.11	0.75		0.26	0.31		0.73	0.09	
Control Delay	19.0	36.4		20.9	35.0		15.8	23.2		20.8	11.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	19.0	36.4		20.9	35.0		15.8	23.2		20.8	11.0	
LOS	B	D		C	C		B	C		C	B	
Approach Delay		36.2			34.6			19.8			19.8	
Approach LOS		D			C			B			B	
Queue Length 50th (ft)	3	181		10	214		25	39		215	11	
Queue Length 95th (ft)	5	186		12	172		35	67		#522	36	
Internal Link Dist (ft)		449			393			138			263	
Turn Bay Length (ft)	140			160			115			125		
Base Capacity (vph)	286	1086		307	1123		535	412		883	861	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.02	0.57		0.07	0.67		0.21	0.31		0.73	0.09	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 60 (60%), Referenced to phase 4:NETL and 8:SWTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 29.0

Intersection LOS: C

Intersection Capacity Utilization 62.8%

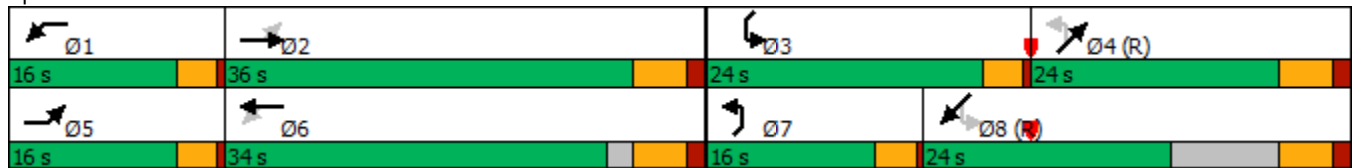
ICU Level of Service B

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 7: Scenic Dr/Universe Blvd & Rainbow Blvd



Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		0	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1622	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1622	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection

Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1622
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1622
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1622	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1	0	0
Stage 1	-	-	1
Stage 2	-	-	0
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1622	-	1022
Stage 1	-	-	1022
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1622	-	1022
Mov Cap-2 Maneuver	-	-	1022
Stage 1	-	-	1022
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	286	7	163	402	297	8	363	114	148	313	268
Future Volume (vph)	216	286	7	163	402	297	8	363	114	148	313	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		120	140		0	130		20	495		255
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			90			65			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.938				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1747	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.098			0.411			0.453			0.173		
Satd. Flow (perm)	183	1863	1583	766	1747	0	844	1863	1583	322	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			89		36				94			282
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		207			542			281			722	
Travel Time (s)		4.7			10.6			5.5			14.1	
Peak Hour Factor	0.73	0.81	0.62	0.80	0.91	0.95	0.75	0.85	0.81	0.79	0.81	0.95
Adj. Flow (vph)	296	353	11	204	442	313	11	427	141	187	386	282
Shared Lane Traffic (%)												
Lane Group Flow (vph)	296	353	11	204	755	0	11	427	141	187	386	282
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			19	
Link Offset(ft)		0			5			0			-10	
Crosswalk Width(ft)		40			16			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	3.0	20.0	20.0	3.0	20.0		3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	9.5	34.5	34.5	9.5	25.5		9.5	23.0	23.0	9.5	23.0	23.0
Total Split (s)	15.0	45.0	45.0	15.0	45.0		15.0	35.0	35.0	15.0	35.0	35.0
Total Split (%)	13.6%	40.9%	40.9%	13.6%	40.9%		13.6%	31.8%	31.8%	13.6%	31.8%	31.8%
Maximum Green (s)	11.5	39.5	39.5	11.5	39.5		11.5	30.0	30.0	11.5	30.0	30.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.5	1.5	1.5	0.5	1.5		0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.5	5.5	3.5	5.5		3.5	5.0	5.0	3.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.5	3.0	3.0	1.5	3.0		1.5	2.0	2.0	1.5	2.0	2.0
Recall Mode	None	Min	Min	None	Min		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		22.0	22.0		12.0			7.0	7.0		9.0	9.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effect Green (s)	54.3	40.9	40.9	51.6	39.5		37.1	31.2	31.2	46.5	43.3	43.3
Actuated g/C Ratio	0.49	0.37	0.37	0.47	0.36		0.34	0.28	0.28	0.42	0.39	0.39
v/c Ratio	1.16	0.51	0.02	0.45	1.16		0.03	0.81	0.27	0.69	0.53	0.36
Control Delay	133.2	30.4	0.0	18.3	121.0		19.2	50.6	13.4	34.4	29.5	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	133.2	30.4	0.0	18.3	121.0		19.2	50.6	13.4	34.4	29.5	4.3
LOS	F	C	A	B	F		B	D	B	C	C	A
Approach Delay		76.0			99.2			41.0			22.3	
Approach LOS		E			F			D			C	
Queue Length 50th (ft)	~196	193	0	76	~618		4	285	25	84	199	0
Queue Length 95th (ft)	#254	250	0	105	#855		13	#404	61	116	290	58
Internal Link Dist (ft)		127			462			201			642	
Turn Bay Length (ft)			120	140			130		20	495		255
Base Capacity (vph)	256	693	645	474	650		434	527	516	287	732	793
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.16	0.51	0.02	0.43	1.16		0.03	0.81	0.27	0.65	0.53	0.36

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 48 (44%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.16

Intersection Signal Delay: 61.6

Intersection LOS: E

Intersection Capacity Utilization 94.0%

ICU Level of Service F

Analysis Period (min) 15

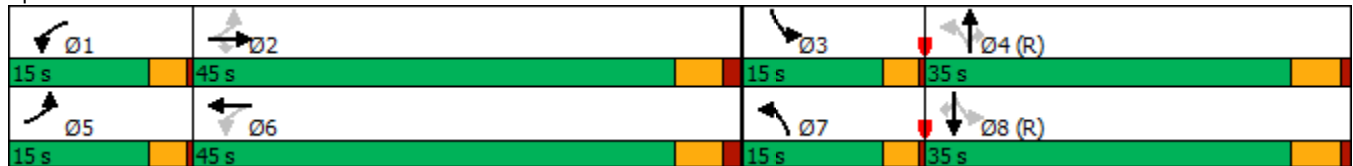
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Universe Blvd & Paseo Del Norte Blvd



Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	5	2	468	279	0
Future Vol, veh/h	3	5	2	468	279	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	200	-	-	190
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	33	25	92	93	47
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	15	8	509	300	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	825	300	300	0	-	0
Stage 1	300	-	-	-	-	-
Stage 2	525	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	342	740	1261	-	-	-
Stage 1	752	-	-	-	-	-
Stage 2	593	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	340	740	1261	-	-	-
Mov Cap-2 Maneuver	340	-	-	-	-	-
Stage 1	747	-	-	-	-	-
Stage 2	593	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	11.6	0.1		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1261	-	340	740	-	-
HCM Lane V/C Ratio	0.006	-	0.018	0.02	-	-
HCM Control Delay (s)	7.9	-	15.8	10	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.1	-	-

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	469	0	0	283
Future Vol, veh/h	0	0	469	0	0	283
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	510	0	0	308

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	818	510	0
Stage 1	510	-	-
Stage 2	308	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	346	563	-
Stage 1	603	-	-
Stage 2	745	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	346	563	-
Mov Cap-2 Maneuver	346	-	-
Stage 1	603	-	-
Stage 2	745	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1055
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	469	0	0	283
Future Vol, veh/h	0	0	469	0	0	283
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	510	0	0	308

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	818	510	0
Stage 1	510	-	-
Stage 2	308	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	346	563	-
Stage 1	603	-	-
Stage 2	745	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	346	563	-
Mov Cap-2 Maneuver	346	-	-
Stage 1	603	-	-
Stage 2	745	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1055
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	469	0	0	283
Future Vol, veh/h	0	0	469	0	0	283
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	510	0	0	308

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	818	510	0
Stage 1	510	-	-
Stage 2	308	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	346	563	-
Stage 1	603	-	-
Stage 2	745	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	346	563	-
Mov Cap-2 Maneuver	346	-	-
Stage 1	603	-	-
Stage 2	745	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1055
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	469	0	0	283
Future Vol, veh/h	0	0	469	0	0	283
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	510	0	0	308
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	818	510	0	0	510	0
Stage 1	510	-	-	-	-	-
Stage 2	308	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	346	563	-	-	1055	-
Stage 1	603	-	-	-	-	-
Stage 2	745	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	346	563	-	-	1055	-
Mov Cap-2 Maneuver	346	-	-	-	-	-
Stage 1	603	-	-	-	-	-
Stage 2	745	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	1055	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	-	-	0	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	3	256	11	60	392	419	11	49	36	235	47	3
Future Volume (vph)	3	256	11	60	392	419	11	49	36	235	47	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	160		0	115		0	125		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			60			20			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.922			0.940			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3263	0	1770	1751	0	1770	1840	0
Flt Permitted	0.175			0.377			0.707			0.618		
Satd. Flow (perm)	326	3514	0	702	3263	0	1317	1751	0	1151	1840	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			283			35			5	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		529			473			218			343	
Travel Time (s)		10.3			9.2			5.0			7.8	
Peak Hour Factor	0.50	0.65	0.62	0.85	0.90	0.88	0.62	0.78	0.85	0.84	0.66	0.50
Adj. Flow (vph)	6	394	18	71	436	476	18	63	42	280	71	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	412	0	71	912	0	18	105	0	280	77	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			22			12			12	
Link Offset(ft)		0			-5			15			-5	
Crosswalk Width(ft)		30			40			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	3.0	16.0		3.0	16.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	9.5	23.5		9.5	23.5		9.5	36.5		9.5	36.5	
Total Split (s)	16.0	24.0		16.0	24.0		16.0	24.0		24.0	24.0	
Total Split (%)	18.2%	27.3%		18.2%	27.3%		18.2%	27.3%		27.3%	27.3%	
Maximum Green (s)	12.5	18.5		12.5	18.5		12.5	18.5		20.5	18.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	1.5		0.5	1.5		0.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	5.5		3.5	5.5		3.5	5.5		3.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		1.5	4.0		1.5	4.0	
Recall Mode	None	Min		None	Min		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		9.0			9.0			24.0			24.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	26.2	20.8		31.0	27.3		39.5	33.0		50.0	44.6	
Actuated g/C Ratio	0.30	0.24		0.35	0.31		0.45	0.38		0.57	0.51	
v/c Ratio	0.04	0.50		0.22	0.76		0.03	0.15		0.38	0.08	
Control Delay	17.3	31.2		19.8	23.0		10.9	15.9		12.2	13.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.3	31.2		19.8	23.0		10.9	15.9		12.2	13.5	
LOS	B	C		B	C		B	B		B	B	
Approach Delay		31.0			22.8			15.1			12.5	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)	2	106		27	162		4	24		73	17	
Queue Length 95th (ft)	5	98		47	245		10	59		128	38	
Internal Link Dist (ft)		449			393			138			263	
Turn Bay Length (ft)	140			160			115			125		
Base Capacity (vph)	320	835		398	1207		769	679		798	935	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.02	0.49		0.18	0.76		0.02	0.15		0.35	0.08	

Intersection Summary

Area Type: Other

Cycle Length: 88

Actuated Cycle Length: 88

Offset: 48 (55%), Referenced to phase 4:NETL and 8:SWTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 22.2

Intersection LOS: C

Intersection Capacity Utilization 59.8%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 7: Scenic Dr/Universe Blvd & Rainbow Blvd

 Ø1	 Ø2	 Ø3	 Ø4 (R)
16 s	24 s	24 s	24 s
 Ø5	 Ø6	 Ø7	 Ø8 (R)
16 s	24 s	16 s	24 s

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1622	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		0	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1622	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1622	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1	0	0
Stage 1	-	-	1
Stage 2	-	-	0
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1622	-	1022
Stage 1	-	-	1022
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1622	-	1022
Mov Cap-2 Maneuver	-	-	1022
Stage 1	-	-	1022
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

APPENDIX I

Phase 1 2023 - Build Synchro Reports

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	410	60	100	180	124	12	206	173	287	470	248
Future Volume (vph)	160	410	60	100	180	124	12	206	173	287	470	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		120	140		0	130		20	495		255
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			90			65			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.941				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1753	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.143			0.156			0.298			0.464		
Satd. Flow (perm)	266	1863	1583	291	1753	0	555	1863	1583	864	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			124		27				164			282
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		207			542			281			722	
Travel Time (s)		4.7			10.6			5.5			14.1	
Peak Hour Factor	0.84	0.82	0.79	0.61	0.69	0.73	0.45	0.79	0.59	0.87	0.78	0.88
Adj. Flow (vph)	190	500	76	164	261	170	27	261	293	330	603	282
Shared Lane Traffic (%)												
Lane Group Flow (vph)	190	500	76	164	431	0	27	261	293	330	603	282
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			19	
Link Offset(ft)		0			5			0			-10	
Crosswalk Width(ft)		40			16			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	3.0	20.0	20.0	3.0	20.0		3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	9.5	34.5	34.5	9.5	25.5		9.5	23.0	23.0	9.5	23.0	23.0
Total Split (s)	17.0	32.0	32.0	13.0	29.0		13.0	45.0	45.0	19.0	51.0	51.0
Total Split (%)	15.5%	29.1%	29.1%	11.8%	26.4%		11.8%	40.9%	40.9%	17.3%	46.4%	46.4%
Maximum Green (s)	13.5	26.5	26.5	9.5	23.5		9.5	40.0	40.0	15.5	46.0	46.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.5	1.5	1.5	0.5	1.5		0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.5	5.5	3.5	5.5		3.5	5.0	5.0	3.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.5	3.0	3.0	1.5	3.0		1.5	2.0	2.0	1.5	2.0	2.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		22.0	22.0		12.0			7.0	7.0		9.0	9.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effect Green (s)	41.1	28.0	28.0	36.7	25.6		47.9	41.6	41.6	60.5	53.8	53.8
Actuated g/C Ratio	0.37	0.25	0.25	0.33	0.23		0.44	0.38	0.38	0.55	0.49	0.49
v/c Ratio	0.75	1.06	0.15	0.75	1.01		0.09	0.37	0.42	0.56	0.66	0.31
Control Delay	42.2	97.9	2.0	46.4	85.8		12.9	27.2	13.0	17.8	26.7	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.2	97.9	2.0	46.4	85.8		12.9	27.2	13.0	17.8	26.7	3.1
LOS	D	F	A	D	F		B	C	B	B	C	A
Approach Delay		74.6			74.9			19.4			18.8	
Approach LOS		E			E			B			B	
Queue Length 50th (ft)	91	~393	0	77	~312		8	134	62	123	330	0
Queue Length 95th (ft)	136	#514	1	83	#330		11	176	50	175	377	42
Internal Link Dist (ft)		127			462			201			642	
Turn Bay Length (ft)			120	140			130		20	495		255
Base Capacity (vph)	287	473	494	226	428		370	704	700	602	910	917
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.66	1.06	0.15	0.73	1.01		0.07	0.37	0.42	0.55	0.66	0.31

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.06

Intersection Signal Delay: 43.0

Intersection LOS: D

Intersection Capacity Utilization 71.8%

ICU Level of Service C

Analysis Period (min) 15

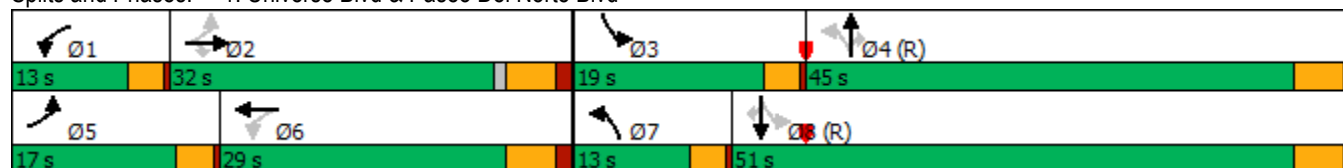
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Universe Blvd & Paseo Del Norte Blvd



Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	27	57	196	595	129
Future Vol, veh/h	12	27	57	196	595	129
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	200	-	-	190
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	39	45	49	92	92	47
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	31	60	116	213	647	274

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1092	647	921	0	-	0
Stage 1	647	-	-	-	-	-
Stage 2	445	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	237	471	741	-	-	-
Stage 1	521	-	-	-	-	-
Stage 2	646	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	200	471	741	-	-	-
Mov Cap-2 Maneuver	200	-	-	-	-	-
Stage 1	439	-	-	-	-	-
Stage 2	646	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18	3.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	741	-	200	471	-	-
HCM Lane V/C Ratio	0.157	-	0.154	0.127	-	-
HCM Control Delay (s)	10.8	-	26.2	13.8	-	-
HCM Lane LOS	B	-	D	B	-	-
HCM 95th %tile Q(veh)	0.6	-	0.5	0.4	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	24	229	3	11	610
Future Vol, veh/h	6	24	229	3	11	610
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	26	249	3	12	663
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	938	251	0	0	252	0
Stage 1	251	-	-	-	-	-
Stage 2	687	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	293	788	-	-	1313	-
Stage 1	791	-	-	-	-	-
Stage 2	499	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	289	788	-	-	1313	-
Mov Cap-2 Maneuver	289	-	-	-	-	-
Stage 1	791	-	-	-	-	-
Stage 2	492	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	11.5	0		0.1		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 586		1313	-	
HCM Lane V/C Ratio	-	- 0.056		0.009	-	
HCM Control Delay (s)	-	- 11.5		7.8	0	
HCM Lane LOS	-	- B		A	A	
HCM 95th %tile Q(veh)	-	- 0.2		0	-	

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	232	0	0	610
Future Vol, veh/h	0	0	232	0	0	610
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	252	0	0	663

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	915	252	0
Stage 1	252	-	-
Stage 2	663	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	303	787	-
Stage 1	790	-	-
Stage 2	512	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	303	787	-
Mov Cap-2 Maneuver	303	-	-
Stage 1	790	-	-
Stage 2	512	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1313	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0	-

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	8	224	7	3	613
Future Vol, veh/h	17	8	224	7	3	613
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	9	243	8	3	666

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	919	247	0
Stage 1	247	-	-
Stage 2	672	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	301	792	-
Stage 1	794	-	-
Stage 2	508	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	300	792	-
Mov Cap-2 Maneuver	300	-	-
Stage 1	794	-	-
Stage 2	506	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	374	1314
HCM Lane V/C Ratio	-	-	0.073	0.002
HCM Control Delay (s)	-	-	15.4	7.7
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Intersection

Int Delay, s/veh 0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	231	0	0	630
Future Vol, veh/h	0	0	231	0	0	630
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	251	0	0	685

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	936	251	0
Stage 1	251	-	-
Stage 2	685	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	294	788	-
Stage 1	791	-	-
Stage 2	500	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	294	788	-
Mov Cap-2 Maneuver	294	-	-
Stage 1	791	-	-
Stage 2	500	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1314
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	4	459	15	11	363	185	55	43	49	585	29	17
Future Volume (vph)	4	459	15	11	363	185	55	43	49	585	29	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	160		0	115		0	125		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			60			20			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.957			0.921			0.924	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3387	0	1770	1716	0	1770	1721	0
Flt Permitted	0.179			0.243			0.706			0.524		
Satd. Flow (perm)	333	3514	0	453	3387	0	1315	1716	0	976	1721	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			61			49			40	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		529			473			218			343	
Travel Time (s)		10.3			9.2			5.0			7.8	
Peak Hour Factor	0.50	0.78	0.50	0.50	0.67	0.86	0.49	0.71	0.73	0.87	0.75	0.42
Adj. Flow (vph)	8	588	30	22	542	215	112	61	67	672	39	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	618	0	22	757	0	112	128	0	672	79	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			22			12			12	
Link Offset(ft)		0			-5			15			-5	
Crosswalk Width(ft)		30			40			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	3.0	16.0		3.0	16.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	9.5	23.5		9.5	23.5		9.5	36.5		9.5	36.5	
Total Split (s)	16.0	36.0		16.0	34.0		16.0	24.0		24.0	24.0	
Total Split (%)	16.0%	36.0%		16.0%	34.0%		16.0%	24.0%		24.0%	24.0%	
Maximum Green (s)	12.5	30.5		12.5	28.5		12.5	18.5		20.5	18.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	1.5		0.5	1.5		0.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	5.5		3.5	5.5		3.5	5.5		3.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		1.5	4.0		1.5	4.0	
Recall Mode	None	Min		None	Min		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		9.0			9.0			24.0			24.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	30.2	26.3		31.3	28.2		27.9	19.0		61.1	48.7	
Actuated g/C Ratio	0.30	0.26		0.31	0.28		0.28	0.19		0.61	0.49	
v/c Ratio	0.05	0.67		0.11	0.76		0.28	0.35		0.76	0.09	
Control Delay	19.2	36.1		20.7	34.9		16.9	25.0		22.1	11.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	19.2	36.1		20.7	34.9		16.9	25.0		22.1	11.0	
LOS	B	D		C	C		B	C		C	B	
Approach Delay		35.9			34.5			21.2			20.9	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)	4	181		10	216		25	43		229	12	
Queue Length 95th (ft)	6	185		12	173		35	68		#623	38	
Internal Link Dist (ft)		449			393			138			263	
Turn Bay Length (ft)	140			160			115			125		
Base Capacity (vph)	285	1089		309	1125		497	366		887	859	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.03	0.57		0.07	0.67		0.23	0.35		0.76	0.09	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 60 (60%), Referenced to phase 4:NETL and 8:SWTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 29.3

Intersection LOS: C

Intersection Capacity Utilization 64.2%

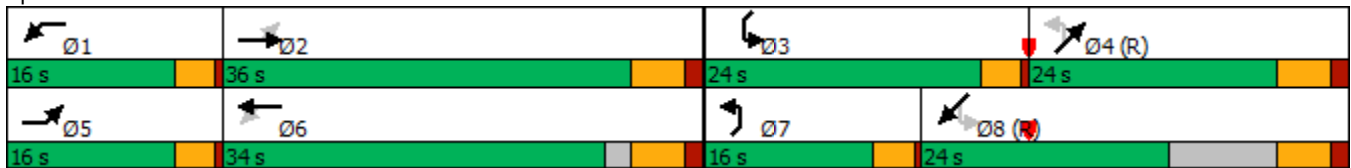
ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 7: Scenic Dr/Universe Blvd & Rainbow Blvd



Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1622	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1622	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1622	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1	0	0
Stage 1	-	-	1
Stage 2	-	-	0
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1622	-	1022
Stage 1	-	-	1022
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1622	-	1022
Mov Cap-2 Maneuver	-	-	1022
Stage 1	-	-	1022
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	286	8	181	402	297	9	365	128	148	315	268
Future Volume (vph)	216	286	8	181	402	297	9	365	128	148	315	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		120	140		0	130		20	495		255
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			90			65			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.938				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1747	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.099			0.406			0.448			0.169		
Satd. Flow (perm)	184	1863	1583	756	1747	0	835	1863	1583	315	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			89		36				94			282
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		207			542			281			722	
Travel Time (s)		4.7			10.6			5.5			14.1	
Peak Hour Factor	0.73	0.81	0.62	0.80	0.91	0.95	0.75	0.85	0.81	0.79	0.81	0.95
Adj. Flow (vph)	296	353	13	226	442	313	12	429	158	187	389	282
Shared Lane Traffic (%)												
Lane Group Flow (vph)	296	353	13	226	755	0	12	429	158	187	389	282
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			19	
Link Offset(ft)		0			5			0			-10	
Crosswalk Width(ft)		40			16			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	3.0	20.0	20.0	3.0	20.0		3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	9.5	34.5	34.5	9.5	25.5		9.5	23.0	23.0	9.5	23.0	23.0
Total Split (s)	15.0	45.0	45.0	15.0	45.0		15.0	35.0	35.0	15.0	35.0	35.0
Total Split (%)	13.6%	40.9%	40.9%	13.6%	40.9%		13.6%	31.8%	31.8%	13.6%	31.8%	31.8%
Maximum Green (s)	11.5	39.5	39.5	11.5	39.5		11.5	30.0	30.0	11.5	30.0	30.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.5	1.5	1.5	0.5	1.5		0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.5	5.5	3.5	5.5		3.5	5.0	5.0	3.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.5	3.0	3.0	1.5	3.0		1.5	2.0	2.0	1.5	2.0	2.0
Recall Mode	None	Min	Min	None	Min		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		22.0	22.0		12.0			7.0	7.0		9.0	9.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effect Green (s)	54.0	40.6	40.6	51.9	39.5		37.1	31.1	31.1	46.5	43.2	43.2
Actuated g/C Ratio	0.49	0.37	0.37	0.47	0.36		0.34	0.28	0.28	0.42	0.39	0.39
v/c Ratio	1.16	0.51	0.02	0.50	1.16		0.04	0.81	0.31	0.69	0.53	0.36
Control Delay	133.6	30.7	0.0	19.3	121.0		19.3	50.9	15.4	34.8	29.7	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	133.6	30.7	0.0	19.3	121.0		19.3	50.9	15.4	34.8	29.7	4.3
LOS	F	C	A	B	F		B	D	B	C	C	A
Approach Delay		76.1			97.6			40.9			22.5	
Approach LOS		E			F			D			C	
Queue Length 50th (ft)	~197	195	0	86	~618		5	286	34	84	201	0
Queue Length 95th (ft)	#254	250	0	116	#855		14	#406	73	116	293	58
Internal Link Dist (ft)		127			462			201			642	
Turn Bay Length (ft)			120	140			130		20	495		255
Base Capacity (vph)	256	686	639	470	650		432	527	515	285	732	793
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.16	0.51	0.02	0.48	1.16		0.03	0.81	0.31	0.66	0.53	0.36

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 48 (44%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.16

Intersection Signal Delay: 61.3

Intersection LOS: E

Intersection Capacity Utilization 94.1%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Universe Blvd & Paseo Del Norte Blvd

 Ø1	 Ø2	 Ø3	 Ø4 (R)
15 s	45 s	15 s	35 s
 Ø5	 Ø6	 Ø7	 Ø8 (R)
15 s	45 s	15 s	35 s

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	7	4	489	307	0
Future Vol, veh/h	3	7	4	489	307	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	200	-	-	190
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	33	25	92	93	47
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	21	16	532	330	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	894	330	330	0	-	0
Stage 1	330	-	-	-	-	-
Stage 2	564	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	312	712	1229	-	-	-
Stage 1	728	-	-	-	-	-
Stage 2	569	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	308	712	1229	-	-	-
Mov Cap-2 Maneuver	308	-	-	-	-	-
Stage 1	719	-	-	-	-	-
Stage 2	569	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.7	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1229	-	308	712	-	-
HCM Lane V/C Ratio	0.013	-	0.019	0.03	-	-
HCM Control Delay (s)	8	-	16.9	10.2	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.1	-	-

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	17	475	6	22	291
Future Vol, veh/h	4	17	475	6	22	291
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	18	516	7	24	316

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	884	520	0
Stage 1	520	-	-
Stage 2	364	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	316	556	-
Stage 1	597	-	-
Stage 2	703	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	307	556	-
Mov Cap-2 Maneuver	307	-	-
Stage 1	597	-	-
Stage 2	683	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.8	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	482	1043
HCM Lane V/C Ratio	-	-	0.047	0.023
HCM Control Delay (s)	-	-	12.8	8.5
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	481	0	0	295
Future Vol, veh/h	0	0	481	0	0	295
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	523	0	0	321
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	844	523	0	0	523	0
Stage 1	523	-	-	-	-	-
Stage 2	321	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	334	554	-	-	1043	-
Stage 1	595	-	-	-	-	-
Stage 2	735	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	334	554	-	-	1043	-
Mov Cap-2 Maneuver	334	-	-	-	-	-
Stage 1	595	-	-	-	-	-
Stage 2	735	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	1043	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	-	-	0	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	6	475	17	8	287
Future Vol, veh/h	13	6	475	17	8	287
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	7	516	18	9	312
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	855	525	0	0	534	0
Stage 1	525	-	-	-	-	-
Stage 2	330	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	329	552	-	-	1034	-
Stage 1	593	-	-	-	-	-
Stage 2	728	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	325	552	-	-	1034	-
Mov Cap-2 Maneuver	325	-	-	-	-	-
Stage 1	593	-	-	-	-	-
Stage 2	720	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	15.2	0		0.2		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-	374	1034	-	
HCM Lane V/C Ratio	-	-	0.055	0.008	-	
HCM Control Delay (s)	-	-	15.2	8.5	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	0.2	0	-	

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	492	0	0	300
Future Vol, veh/h	0	0	492	0	0	300
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	535	0	0	326

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	861	535	0
Stage 1	535	-	-
Stage 2	326	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	326	545	-
Stage 1	587	-	-
Stage 2	731	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	326	545	-
Mov Cap-2 Maneuver	326	-	-
Stage 1	587	-	-
Stage 2	731	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1033
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	4	256	11	60	392	439	11	51	36	250	48	4
Future Volume (vph)	4	256	11	60	392	439	11	51	36	250	48	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	160		0	115		0	125		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			60			20			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.920			0.941			0.985	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3256	0	1770	1753	0	1770	1835	0
Flt Permitted	0.169			0.383			0.704			0.613		
Satd. Flow (perm)	315	3514	0	713	3256	0	1311	1753	0	1142	1835	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			297			33			6	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		529			473			218			343	
Travel Time (s)		10.3			9.2			5.0			7.8	
Peak Hour Factor	0.50	0.65	0.62	0.85	0.90	0.88	0.62	0.78	0.85	0.84	0.66	0.50
Adj. Flow (vph)	8	394	18	71	436	499	18	65	42	298	73	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	412	0	71	935	0	18	107	0	298	81	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			22			12			12	
Link Offset(ft)		0			-5			15			-5	
Crosswalk Width(ft)		30			40			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	3.0	16.0		3.0	16.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	9.5	23.5		9.5	23.5		9.5	36.5		9.5	36.5	
Total Split (s)	16.0	24.0		16.0	24.0		16.0	24.0		24.0	24.0	
Total Split (%)	18.2%	27.3%		18.2%	27.3%		18.2%	27.3%		27.3%	27.3%	
Maximum Green (s)	12.5	18.5		12.5	18.5		12.5	18.5		20.5	18.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	1.5		0.5	1.5		0.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	5.5		3.5	5.5		3.5	5.5		3.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		1.5	4.0		1.5	4.0	
Recall Mode	None	Min		None	Min		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		9.0			9.0			24.0			24.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	27.1	21.6		31.8	28.1		37.9	31.5		49.2	43.8	
Actuated g/C Ratio	0.31	0.25		0.36	0.32		0.43	0.36		0.56	0.50	
v/c Ratio	0.05	0.48		0.21	0.75		0.03	0.17		0.41	0.09	
Control Delay	17.2	30.4		19.4	22.5		11.3	17.0		12.9	13.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.2	30.4		19.4	22.5		11.3	17.0		12.9	13.6	
LOS	B	C		B	C		B	B		B	B	
Approach Delay		30.2			22.2			16.2			13.0	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)	3	105		26	163		4	26		80	19	
Queue Length 95th (ft)	6	98		47	251		10	62		136	39	
Internal Link Dist (ft)		449			393			138			263	
Turn Bay Length (ft)	140			160			115			125		
Base Capacity (vph)	320	867		407	1242		745	647		784	916	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.03	0.48		0.17	0.75		0.02	0.17		0.38	0.09	

Intersection Summary

Area Type: Other

Cycle Length: 88

Actuated Cycle Length: 88

Offset: 48 (55%), Referenced to phase 4:NETL and 8:SWTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 21.8

Intersection LOS: C

Intersection Capacity Utilization 61.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 7: Scenic Dr/Universe Blvd & Rainbow Blvd

 Ø1	 Ø2	 Ø3	 Ø4 (R)
16 s	24 s	24 s	24 s
 Ø5	 Ø6	 Ø7	 Ø8 (R)
16 s	24 s	16 s	24 s

Intersection

Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	28	0	0	21	0	0
Future Vol, veh/h	28	0	0	21	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	0	0	23	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	30
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	4.12	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	2.218	-
Pot Cap-1 Maneuver	-	1583	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1583	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1583	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection

Int Delay, s/veh 2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	14	14	0	10	11	0
Future Vol, veh/h	14	14	0	10	11	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	15	0	11	12	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	30
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1583
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1583
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	979	-	-	1583	-
HCM Lane V/C Ratio	0.012	-	-	-	-
HCM Control Delay (s)	8.7	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection

Int Delay, s/veh 3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	14	0	0	10	0
Future Vol, veh/h	0	14	0	0	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	15	0	0	11	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	15
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1603
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1603
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1011	-	-	1603	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1	0	0
Stage 1	-	-	1
Stage 2	-	-	0
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1622	-	1022
Stage 1	-	-	1022
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1622	-	1022
Mov Cap-2 Maneuver	-	-	1022
Stage 1	-	-	1022
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

APPENDIX J

Phase II 2025 - No Build Synchro Reports

Lanes, Volumes, Timings

1: Universe Blvd & Paseo Del Norte Blvd

04/14/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	184	438	63	97	199	151	11	225	159	317	506	276
Future Volume (vph)	184	438	63	97	199	151	11	225	159	317	506	276
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		120	140		0	130		20	495		255
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			90			65			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.937				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1745	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.143			0.162			0.254			0.435		
Satd. Flow (perm)	266	1863	1583	302	1745	0	473	1863	1583	810	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			124		30				164			299
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		207			542			281			722	
Travel Time (s)		4.7			10.6			5.5			14.1	
Peak Hour Factor	0.84	0.82	0.79	0.61	0.69	0.73	0.45	0.79	0.59	0.87	0.78	0.88
Adj. Flow (vph)	219	534	80	159	288	207	24	285	269	364	649	314
Shared Lane Traffic (%)												
Lane Group Flow (vph)	219	534	80	159	495	0	24	285	269	364	649	314
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			19	
Link Offset(ft)		0			5			0			-10	
Crosswalk Width(ft)		40			16			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8

Lanes, Volumes, Timings

1: Universe Blvd & Paseo Del Norte Blvd

04/14/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	3.0	20.0	20.0	3.0	20.0		3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	9.5	34.5	34.5	9.5	25.5		9.5	23.0	23.0	9.5	23.0	23.0
Total Split (s)	17.0	32.0	32.0	13.0	29.0		13.0	45.0	45.0	19.0	51.0	51.0
Total Split (%)	15.5%	29.1%	29.1%	11.8%	26.4%		11.8%	40.9%	40.9%	17.3%	46.4%	46.4%
Maximum Green (s)	13.5	26.5	26.5	9.5	23.5		9.5	40.0	40.0	15.5	46.0	46.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.5	1.5	1.5	0.5	1.5		0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.5	5.5	3.5	5.5		3.5	5.0	5.0	3.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.5	3.0	3.0	1.5	3.0		1.5	2.0	2.0	1.5	2.0	2.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		22.0	22.0		12.0			7.0	7.0		9.0	9.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effect Green (s)	42.1	28.0	28.0	35.6	24.7		47.3	41.1	41.1	60.5	53.8	53.8
Actuated g/C Ratio	0.38	0.25	0.25	0.32	0.22		0.43	0.37	0.37	0.55	0.49	0.49
v/c Ratio	0.81	1.13	0.16	0.73	1.20		0.09	0.41	0.39	0.64	0.71	0.34
Control Delay	48.4	119.2	2.4	44.7	145.5		13.1	28.1	11.7	19.9	28.4	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.4	119.2	2.4	44.7	145.5		13.1	28.1	11.7	19.9	28.4	3.6
LOS	D	F	A	D	F		B	C	B	B	C	A
Approach Delay		89.4			121.0			19.8			20.2	
Approach LOS		F			F			B			C	
Queue Length 50th (ft)	107	~444	0	75	~422		7	150	50	139	367	6
Queue Length 95th (ft)	#179	#564	3	80	#408		10	192	41	195	416	51
Internal Link Dist (ft)		127			462			201			642	
Turn Bay Length (ft)			120	140			130		20	495		255
Base Capacity (vph)	287	474	495	225	414		336	696	694	580	911	927
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.76	1.13	0.16	0.71	1.20		0.07	0.41	0.39	0.63	0.71	0.34

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.20

Intersection Signal Delay: 56.6

Intersection LOS: E

Intersection Capacity Utilization 76.2%

ICU Level of Service D

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Lanes, Volumes, Timings

1: Universe Blvd & Paseo Del Norte Blvd

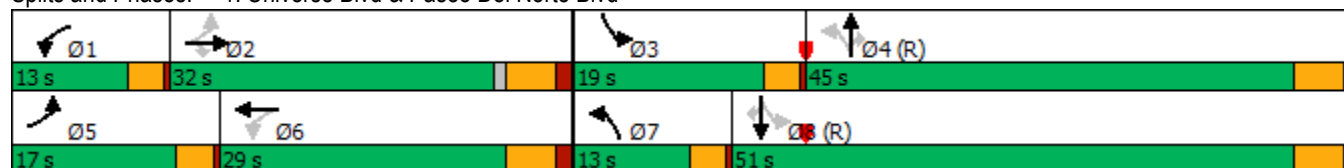
04/14/2022

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Universe Blvd & Paseo Del Norte Blvd



No Build 2025 AM
2: Universe Blvd & School Driveway

04/14/2022

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	28	59	179	622	138
Future Vol, veh/h	13	28	59	179	622	138
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	200	-	-	190
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	39	45	49	92	92	47
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	62	120	195	676	294
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1111	676	970	0	-	0
Stage 1	676	-	-	-	-	-
Stage 2	435	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	231	453	710	-	-	-
Stage 1	505	-	-	-	-	-
Stage 2	653	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	192	453	710	-	-	-
Mov Cap-2 Maneuver	192	-	-	-	-	-
Stage 1	420	-	-	-	-	-
Stage 2	653	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	18.9	4.2		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	710	-	192	453	-	-
HCM Lane V/C Ratio	0.17	-	0.174	0.137	-	-
HCM Control Delay (s)	11.1	-	27.6	14.2	-	-
HCM Lane LOS	B	-	D	B	-	-
HCM 95th %tile Q(veh)	0.6	-	0.6	0.5	-	-

No Build 2025 AM
3: Universe Blvd & Rosa Parks Rd

04/14/2022

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	237	0	0	649
Future Vol, veh/h	0	0	237	0	0	649
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	258	0	0	705

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	963	258	0
Stage 1	258	-	-
Stage 2	705	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	284	781	-
Stage 1	785	-	-
Stage 2	490	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	284	781	-
Mov Cap-2 Maneuver	284	-	-
Stage 1	785	-	-
Stage 2	490	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1307
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

No Build 2025 AM
4: Universe Blvd & Driveway 1

04/14/2022

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	237	0	0	649
Future Vol, veh/h	0	0	237	0	0	649
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	258	0	0	705

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	963	258	0
Stage 1	258	-	-
Stage 2	705	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	284	781	-
Stage 1	785	-	-
Stage 2	490	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	284	781	-
Mov Cap-2 Maneuver	284	-	-
Stage 1	785	-	-
Stage 2	490	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1307
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

No Build 2025 AM
5: Universe Blvd & Driveway 2

04/14/2022

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	237	0	0	649
Future Vol, veh/h	0	0	237	0	0	649
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	258	0	0	705

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	963	258	0
Stage 1	258	-	-
Stage 2	705	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	284	781	-
Stage 1	785	-	-
Stage 2	490	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	284	781	-
Mov Cap-2 Maneuver	284	-	-
Stage 1	785	-	-
Stage 2	490	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1307
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	237	0	0	649
Future Vol, veh/h	0	0	237	0	0	649
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	258	0	0	705

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	963	258	0
Stage 1	258	-	-
Stage 2	705	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	284	781	-
Stage 1	785	-	-
Stage 2	490	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	284	781	-
Mov Cap-2 Maneuver	284	-	-
Stage 1	785	-	-
Stage 2	490	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1307
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Lanes, Volumes, Timings

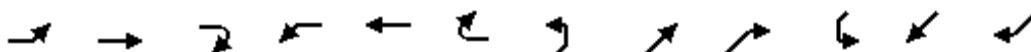
7: Scenic Dr/Universe Blvd & Rainbow Blvd

04/14/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	3	487	16	11	386	190	59	45	52	601	31	18
Future Volume (vph)	3	487	16	11	386	190	59	45	52	601	31	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	160		0	115		0	125		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			60			20			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.958			0.921			0.923	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3391	0	1770	1716	0	1770	1719	0
Flt Permitted	0.169			0.230			0.702			0.503		
Satd. Flow (perm)	315	3514	0	428	3391	0	1308	1716	0	937	1719	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			58			50			43	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		529			473			218			343	
Travel Time (s)		10.3			9.2			5.0			7.8	
Peak Hour Factor	0.50	0.78	0.50	0.50	0.67	0.86	0.49	0.71	0.73	0.87	0.75	0.42
Adj. Flow (vph)	6	624	32	22	576	221	120	63	71	691	41	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	656	0	22	797	0	120	134	0	691	84	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			22			12			12	
Link Offset(ft)		0			-5			15			-5	
Crosswalk Width(ft)		30			40			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		

Lanes, Volumes, Timings
7: Scenic Dr/Universe Blvd & Rainbow Blvd

04/14/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	3.0	16.0		3.0	16.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	9.5	23.5		9.5	23.5		9.5	36.5		9.5	36.5	
Total Split (s)	16.0	36.0		16.0	34.0		16.0	24.0		24.0	24.0	
Total Split (%)	16.0%	36.0%		16.0%	34.0%		16.0%	24.0%		24.0%	24.0%	
Maximum Green (s)	12.5	30.5		12.5	28.5		12.5	18.5		20.5	18.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	1.5		0.5	1.5		0.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	5.5		3.5	5.5		3.5	5.5		3.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		1.5	4.0		1.5	4.0	
Recall Mode	None	Min		None	Min		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		9.0			9.0			24.0			24.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	31.5	27.6		32.7	29.6		27.7	18.5		59.8	47.0	
Actuated g/C Ratio	0.32	0.28		0.33	0.30		0.28	0.18		0.60	0.47	
v/c Ratio	0.04	0.67		0.11	0.76		0.30	0.37		0.81	0.10	
Control Delay	18.0	35.2		19.8	34.3		17.5	25.8		25.7	11.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	18.0	35.2		19.8	34.3		17.5	25.8		25.7	11.5	
LOS	B	D		B	C		B	C		C	B	
Approach Delay		35.1			34.0			21.9			24.2	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)	3	191		10	229		28	46		248	13	
Queue Length 95th (ft)	5	192		12	178		39	71		#677	41	
Internal Link Dist (ft)		449			393			138			263	
Turn Bay Length (ft)	140			160			115			125		
Base Capacity (vph)	286	1102		310	1145		489	358		857	831	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.02	0.60		0.07	0.70		0.25	0.37		0.81	0.10	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 60 (60%), Referenced to phase 4:NETL and 8:SWTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 30.0

Intersection LOS: C

Intersection Capacity Utilization 65.9%

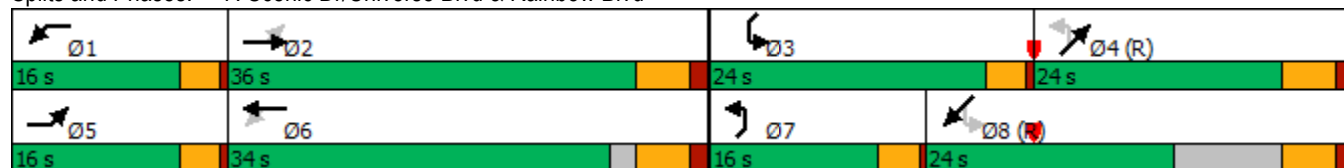
ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 7: Scenic Dr/Universe Blvd & Rainbow Blvd



No Build 2025 AM
8: Driveway 3 & Rosa Parks Rd

04/14/2022

Intersection

Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1622
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1622
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1622	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

No Build 2025 AM
9: Driveway 4 & Rosa Parks Rd

04/14/2022

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		0	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1622	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		0	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1622	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1	0	0
Stage 1	-	-	1
Stage 2	-	-	0
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1622	-	1022
Stage 1	-	-	1022
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1622	-	1022
Mov Cap-2 Maneuver	-	-	1022
Stage 1	-	-	1022
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	247	305	7	170	462	366	8	395	119	175	341	304
Future Volume (vph)	247	305	7	170	462	366	8	395	119	175	341	304
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		120	140		0	130		20	495		255
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			90			65			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.935				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1742	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.098			0.379			0.414			0.118		
Satd. Flow (perm)	183	1863	1583	706	1742	0	771	1863	1583	220	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			89		39				94			320
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		207			542			281			722	
Travel Time (s)		4.7			10.6			5.5			14.1	
Peak Hour Factor	0.73	0.81	0.62	0.80	0.91	0.95	0.75	0.85	0.81	0.79	0.81	0.95
Adj. Flow (vph)	338	377	11	213	508	385	11	465	147	222	421	320
Shared Lane Traffic (%)												
Lane Group Flow (vph)	338	377	11	213	893	0	11	465	147	222	421	320
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			19	
Link Offset(ft)		0			5			0			-10	
Crosswalk Width(ft)		40			16			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8

No Build 2025 PM
1: Universe Blvd & Paseo Del Norte Blvd

Lanes, Volumes, Timings
04/14/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	3.0	20.0	20.0	3.0	20.0		3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	9.5	34.5	34.5	9.5	25.5		9.5	23.0	23.0	9.5	23.0	23.0
Total Split (s)	15.0	45.0	45.0	15.0	45.0		15.0	35.0	35.0	15.0	35.0	35.0
Total Split (%)	13.6%	40.9%	40.9%	13.6%	40.9%		13.6%	31.8%	31.8%	13.6%	31.8%	31.8%
Maximum Green (s)	11.5	39.5	39.5	11.5	39.5		11.5	30.0	30.0	11.5	30.0	30.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.5	1.5	1.5	0.5	1.5		0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.5	5.5	3.5	5.5		3.5	5.0	5.0	3.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.5	3.0	3.0	1.5	3.0		1.5	2.0	2.0	1.5	2.0	2.0
Recall Mode	None	Min	Min	None	Min		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		22.0	22.0		12.0			7.0	7.0		9.0	9.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effect Green (s)	54.1	40.7	40.7	51.8	39.5		36.2	30.3	30.3	46.5	43.3	43.3
Actuated g/C Ratio	0.49	0.37	0.37	0.47	0.36		0.33	0.28	0.28	0.42	0.39	0.39
v/c Ratio	1.32	0.55	0.02	0.49	1.37		0.04	0.91	0.29	0.88	0.58	0.39
Control Delay	196.4	31.4	0.0	19.2	207.3		19.2	62.0	14.3	59.2	30.8	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	196.4	31.4	0.0	19.2	207.3		19.2	62.0	14.3	59.2	30.8	4.3
LOS	F	C	A	B	F		B	E	B	E	C	A
Approach Delay		107.7			171.1			50.0			28.5	
Approach LOS		F			F			D			C	
Queue Length 50th (ft)	~260	211	0	80	~824		4	319	28	102	223	0
Queue Length 95th (ft)	#313	269	0	110	#1070		13	#462	65	#181	319	61
Internal Link Dist (ft)		127			462			201			642	
Turn Bay Length (ft)			120	140			130		20	495		255
Base Capacity (vph)	256	689	642	451	650		407	512	503	255	732	816
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.32	0.55	0.02	0.47	1.37		0.03	0.91	0.29	0.87	0.58	0.39

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 48 (44%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.37

Intersection Signal Delay: 95.4

Intersection LOS: F

Intersection Capacity Utilization 106.3%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Universe Blvd & Paseo Del Norte Blvd

 Ø1	 Ø2	 Ø3	 Ø4 (R)
15 s	45 s	15 s	35 s
 Ø5	 Ø6	 Ø7	 Ø8 (R)
15 s	45 s	15 s	35 s

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	5	2	501	299	0
Future Vol, veh/h	3	5	2	501	299	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	200	-	-	190
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	33	25	92	93	47
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	15	8	545	322	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	883	322	322	0	-	0
Stage 1	322	-	-	-	-	-
Stage 2	561	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	316	719	1238	-	-	-
Stage 1	735	-	-	-	-	-
Stage 2	571	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	314	719	1238	-	-	-
Mov Cap-2 Maneuver	314	-	-	-	-	-
Stage 1	731	-	-	-	-	-
Stage 2	571	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12	0.1		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1238	-	314	719	-	-
HCM Lane V/C Ratio	0.006	-	0.019	0.021	-	-
HCM Control Delay (s)	7.9	-	16.7	10.1	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.1	-	-

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	502	0	0	304
Future Vol, veh/h	0	0	502	0	0	304
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	546	0	0	330

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	876	546	0
Stage 1	546	-	-
Stage 2	330	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	319	538	-
Stage 1	580	-	-
Stage 2	728	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	319	538	-
Mov Cap-2 Maneuver	319	-	-
Stage 1	580	-	-
Stage 2	728	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1023
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	502	0	0	304
Future Vol, veh/h	0	0	502	0	0	304
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	546	0	0	330
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	876	546	0	0	546	0
Stage 1	546	-	-	-	-	-
Stage 2	330	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	319	538	-	-	1023	-
Stage 1	580	-	-	-	-	-
Stage 2	728	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	319	538	-	-	1023	-
Mov Cap-2 Maneuver	319	-	-	-	-	-
Stage 1	580	-	-	-	-	-
Stage 2	728	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	1023	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	-	-	0	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	502	0	0	304
Future Vol, veh/h	0	0	502	0	0	304
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	546	0	0	330

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	876	546	0
Stage 1	546	-	-
Stage 2	330	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	319	538	-
Stage 1	580	-	-
Stage 2	728	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	319	538	-
Mov Cap-2 Maneuver	319	-	-
Stage 1	580	-	-
Stage 2	728	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1023
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	502	0	0	304
Future Vol, veh/h	0	0	502	0	0	304
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	546	0	0	330

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	876	546	0
Stage 1	546	-	-
Stage 2	330	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	319	538	-
Stage 1	580	-	-
Stage 2	728	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	319	538	-
Mov Cap-2 Maneuver	319	-	-
Stage 1	580	-	-
Stage 2	728	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1023
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	3	272	11	64	415	447	11	53	38	251	51	3
Future Volume (vph)	3	272	11	64	415	447	11	53	38	251	51	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	160		0	115		0	125		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			60			20			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.921			0.940			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3518	0	1770	3260	0	1770	1751	0	1770	1842	0
Flt Permitted	0.158			0.383			0.703			0.601		
Satd. Flow (perm)	294	3518	0	713	3260	0	1310	1751	0	1120	1842	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			286			34			5	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		529			473			218			343	
Travel Time (s)		10.3			9.2			5.0			7.8	
Peak Hour Factor	0.50	0.65	0.62	0.85	0.90	0.88	0.62	0.78	0.85	0.84	0.66	0.50
Adj. Flow (vph)	6	418	18	75	461	508	18	68	45	299	77	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	436	0	75	969	0	18	113	0	299	83	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			22			12			12	
Link Offset(ft)		0			-5			15			-5	
Crosswalk Width(ft)		30			40			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	3.0	16.0		3.0	16.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	9.5	23.5		9.5	23.5		9.5	36.5		9.5	36.5	
Total Split (s)	16.0	24.0		16.0	24.0		16.0	24.0		24.0	24.0	
Total Split (%)	18.2%	27.3%		18.2%	27.3%		18.2%	27.3%		27.3%	27.3%	
Maximum Green (s)	12.5	18.5		12.5	18.5		12.5	18.5		20.5	18.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	1.5		0.5	1.5		0.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	5.5		3.5	5.5		3.5	5.5		3.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		1.5	4.0		1.5	4.0	
Recall Mode	None	Min		None	Min		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		9.0			9.0			24.0			24.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	30.0	24.5		34.8	31.2		34.5	28.0		46.2	40.8	
Actuated g/C Ratio	0.34	0.28		0.40	0.35		0.39	0.32		0.52	0.46	
v/c Ratio	0.04	0.44		0.21	0.72		0.03	0.19		0.44	0.10	
Control Delay	16.3	28.5		18.3	21.3		11.8	18.1		14.4	14.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.3	28.5		18.3	21.3		11.8	18.1		14.4	14.5	
LOS	B	C		B	C		B	B		B	B	
Approach Delay		28.3			21.0			17.2			14.4	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)	2	108		27	171		4	30		85	20	
Queue Length 95th (ft)	5	104		48	269		10	66		136	40	
Internal Link Dist (ft)		449			393			138			263	
Turn Bay Length (ft)	140			160			115			125		
Base Capacity (vph)	325	983		432	1338		695	580		739	856	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.02	0.44		0.17	0.72		0.03	0.19		0.40	0.10	

Intersection Summary

Area Type: Other

Cycle Length: 88

Actuated Cycle Length: 88

Offset: 48 (55%), Referenced to phase 4:NETL and 8:SWTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 21.1

Intersection LOS: C

Intersection Capacity Utilization 62.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 7: Scenic Dr/Universe Blvd & Rainbow Blvd

 Ø1 16 s	 Ø2 24 s	 Ø3 24 s	 Ø4 (R) 24 s
 Ø5 16 s	 Ø6 24 s	 Ø7 16 s	 Ø8 (R) 24 s

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1622	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1622	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection

Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1622
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1622
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1622	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1	0	0
Stage 1	-	-	1
Stage 2	-	-	0
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1622	-	1022
Stage 1	-	-	1022
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1622	-	1022
Mov Cap-2 Maneuver	-	-	1022
Stage 1	-	-	1022
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

APPENDIX K

Phase II 2025 - Build Synchro Reports

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	184	438	65	111	199	151	13	229	200	317	508	276
Future Volume (vph)	184	438	65	111	199	151	13	229	200	317	508	276
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		120	140		0	130		20	495		255
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			90			65			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.937				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1745	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.144			0.162			0.250			0.429		
Satd. Flow (perm)	268	1863	1583	302	1745	0	466	1863	1583	799	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			124		30				164			298
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		207			542			281			722	
Travel Time (s)		4.7			10.6			5.5			14.1	
Peak Hour Factor	0.84	0.82	0.79	0.61	0.69	0.73	0.45	0.79	0.59	0.87	0.78	0.88
Adj. Flow (vph)	219	534	82	182	288	207	29	290	339	364	651	314
Shared Lane Traffic (%)												
Lane Group Flow (vph)	219	534	82	182	495	0	29	290	339	364	651	314
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			19	
Link Offset(ft)		0			5			0			-10	
Crosswalk Width(ft)		40			16			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8

Build 2025 AM
1: Universe Blvd & Paseo Del Norte Blvd

Lanes, Volumes, Timings
04/14/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	3.0	20.0	20.0	3.0	20.0		3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	9.5	34.5	34.5	9.5	25.5		9.5	23.0	23.0	9.5	23.0	23.0
Total Split (s)	17.0	32.0	32.0	13.0	29.0		13.0	45.0	45.0	19.0	51.0	51.0
Total Split (%)	15.5%	29.1%	29.1%	11.8%	26.4%		11.8%	40.9%	40.9%	17.3%	46.4%	46.4%
Maximum Green (s)	13.5	26.5	26.5	9.5	23.5		9.5	40.0	40.0	15.5	46.0	46.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.5	1.5	1.5	0.5	1.5		0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.5	5.5	3.5	5.5		3.5	5.0	5.0	3.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.5	3.0	3.0	1.5	3.0		1.5	2.0	2.0	1.5	2.0	2.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		22.0	22.0		12.0			7.0	7.0		9.0	9.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	41.7	27.7	27.7	36.0	24.7		47.5	41.1	41.1	60.5	53.7	53.7
Actuated g/C Ratio	0.38	0.25	0.25	0.33	0.22		0.43	0.37	0.37	0.55	0.49	0.49
v/c Ratio	0.81	1.14	0.17	0.82	1.20		0.11	0.42	0.49	0.64	0.72	0.34
Control Delay	48.6	124.1	2.6	54.1	145.5		13.2	28.2	16.0	20.1	28.7	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.6	124.1	2.6	54.1	145.5		13.2	28.2	16.0	20.1	28.7	3.7
LOS	D	F	A	D	F		B	C	B	C	C	A
Approach Delay		92.3			120.9			21.3			20.4	
Approach LOS		F			F			C			C	
Queue Length 50th (ft)	107	~444	0	87	~422		9	153	90	139	371	6
Queue Length 95th (ft)	#178	#564	4	90	#408		11	196	67	195	419	51
Internal Link Dist (ft)		127			462			201			642	
Turn Bay Length (ft)			120	140			130		20	495		255
Base Capacity (vph)	287	469	491	225	414		333	696	694	576	909	925
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.76	1.14	0.17	0.81	1.20		0.09	0.42	0.49	0.63	0.72	0.34

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.20

Intersection Signal Delay: 57.2

Intersection LOS: E

Intersection Capacity Utilization 76.2%

ICU Level of Service D

Analysis Period (min) 15

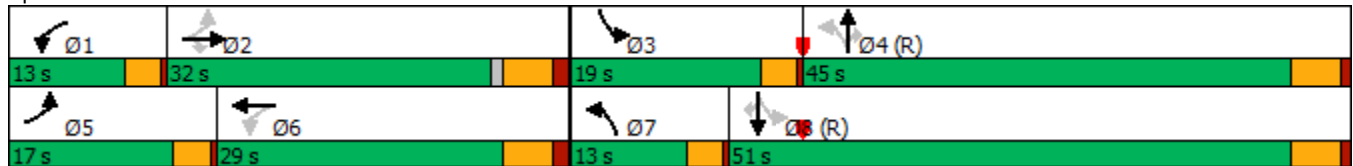
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Universe Blvd & Paseo Del Norte Blvd



Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	30	64	242	645	138
Future Vol, veh/h	13	30	64	242	645	138
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	200	-	-	190
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	39	45	49	92	92	47
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	67	131	263	701	294
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1226	701	995	0	-	0
Stage 1	701	-	-	-	-	-
Stage 2	525	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	197	439	695	-	-	-
Stage 1	492	-	-	-	-	-
Stage 2	593	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	160	439	695	-	-	-
Mov Cap-2 Maneuver	160	-	-	-	-	-
Stage 1	400	-	-	-	-	-
Stage 2	593	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	20.9	3.8		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	695	-	160	439	-	-
HCM Lane V/C Ratio	0.188	-	0.208	0.152	-	-
HCM Control Delay (s)	11.4	-	33.3	14.7	-	-
HCM Lane LOS	B	-	D	B	-	-
HCM 95th %tile Q(veh)	0.7	-	0.8	0.5	-	-

Intersection

Int Delay, s/veh 0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	24	281	3	11	663
Future Vol, veh/h	6	24	281	3	11	663
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	26	305	3	12	721

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1052	307	0
Stage 1	307	-	-
Stage 2	745	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	251	733	-
Stage 1	746	-	-
Stage 2	469	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	247	733	-
Mov Cap-2 Maneuver	247	-	-
Stage 1	746	-	-
Stage 2	461	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.3	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	526	1253
HCM Lane V/C Ratio	-	-	0.062	0.01
HCM Control Delay (s)	-	-	12.3	7.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	13	271	3	4	665
Future Vol, veh/h	9	13	271	3	4	665
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	14	295	3	4	723
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1028	297	0	0	298	0
Stage 1	297	-	-	-	-	-
Stage 2	731	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	259	742	-	-	1263	-
Stage 1	754	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	258	742	-	-	1263	-
Mov Cap-2 Maneuver	258	-	-	-	-	-
Stage 1	754	-	-	-	-	-
Stage 2	474	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	14.1	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	420	1263	-	
HCM Lane V/C Ratio	-	-	0.057	0.003	-	
HCM Control Delay (s)	-	-	14.1	7.9	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.2	0	-	

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	26	248	11	8	666
Future Vol, veh/h	30	26	248	11	8	666
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	28	270	12	9	724
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1018	276	0	0	282	0
Stage 1	276	-	-	-	-	-
Stage 2	742	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	263	763	-	-	1280	-
Stage 1	771	-	-	-	-	-
Stage 2	471	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	260	763	-	-	1280	-
Mov Cap-2 Maneuver	260	-	-	-	-	-
Stage 1	771	-	-	-	-	-
Stage 2	465	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	16.5	0	0.1			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	375	1280	-	
HCM Lane V/C Ratio	-	-	0.162	0.007	-	
HCM Control Delay (s)	-	-	16.5	7.8	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	0.6	0	-	

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	5	254	1	2	694
Future Vol, veh/h	4	5	254	1	2	694
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	5	276	1	2	754
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1035	277	0	0	277	0
Stage 1	277	-	-	-	-	-
Stage 2	758	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	257	762	-	-	1286	-
Stage 1	770	-	-	-	-	-
Stage 2	463	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	256	762	-	-	1286	-
Mov Cap-2 Maneuver	256	-	-	-	-	-
Stage 1	770	-	-	-	-	-
Stage 2	462	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	14.1	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	406	1286	-	
HCM Lane V/C Ratio	-	-	0.024	0.002	-	
HCM Control Delay (s)	-	-	14.1	7.8	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	5	487	16	11	386	204	59	47	52	646	33	20
Future Volume (vph)	5	487	16	11	386	204	59	47	52	646	33	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	160		0	115		0	125		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			60			20			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.956			0.922			0.922	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3383	0	1770	1717	0	1770	1717	0
Flt Permitted	0.163			0.233			0.697			0.498		
Satd. Flow (perm)	304	3514	0	434	3383	0	1298	1717	0	928	1717	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			64			48			48	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		529			473			218			343	
Travel Time (s)		10.3			9.2			5.0			7.8	
Peak Hour Factor	0.50	0.78	0.50	0.50	0.67	0.86	0.49	0.71	0.73	0.87	0.75	0.42
Adj. Flow (vph)	10	624	32	22	576	237	120	66	71	743	44	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	656	0	22	813	0	120	137	0	743	92	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			22			12			12	
Link Offset(ft)		0			-5			15			-5	
Crosswalk Width(ft)		30			40			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	3.0	16.0		3.0	16.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	9.5	23.5		9.5	23.5		9.5	36.5		9.5	36.5	
Total Split (s)	16.0	36.0		16.0	34.0		16.0	24.0		24.0	24.0	
Total Split (%)	16.0%	36.0%		16.0%	34.0%		16.0%	24.0%		24.0%	24.0%	
Maximum Green (s)	12.5	30.5		12.5	28.5		12.5	18.5		20.5	18.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	1.5		0.5	1.5		0.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	5.5		3.5	5.5		3.5	5.5		3.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		1.5	4.0		1.5	4.0	
Recall Mode	None	Min		None	Min		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		9.0			9.0			24.0			24.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	32.0	28.1		33.1	29.9		27.7	18.5		59.3	46.6	
Actuated g/C Ratio	0.32	0.28		0.33	0.30		0.28	0.18		0.59	0.47	
v/c Ratio	0.06	0.66		0.11	0.77		0.30	0.38		0.88	0.11	
Control Delay	18.2	34.6		19.5	34.1		17.6	26.6		31.6	11.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	18.2	34.6		19.5	34.1		17.6	26.6		31.6	11.5	
LOS	B	C		B	C		B	C		C	B	
Approach Delay		34.4			33.7			22.4			29.4	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	4	190		10	232		29	49		284	14	
Queue Length 95th (ft)	7	188		11	178		40	75		#761	43	
Internal Link Dist (ft)		449			393			138			263	
Turn Bay Length (ft)	140			160			115			125		
Base Capacity (vph)	285	1109		313	1151		487	356		848	825	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.04	0.59		0.07	0.71		0.25	0.38		0.88	0.11	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 60 (60%), Referenced to phase 4:NETL and 8:SWTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 31.4

Intersection LOS: C

Intersection Capacity Utilization 68.8%

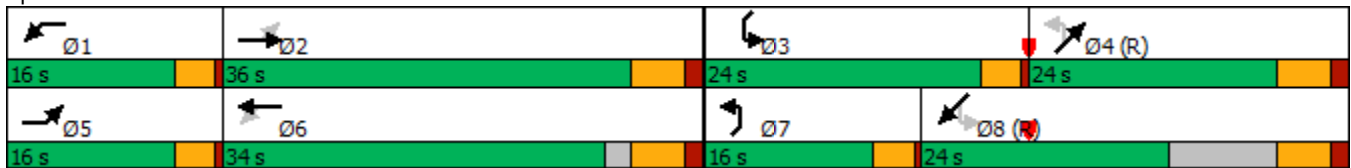
ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 7: Scenic Dr/Universe Blvd & Rainbow Blvd



Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	14	0	0	30	0	0
Future Vol, veh/h	14	0	0	30	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	0	0	33	0	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	15	0	48	15
Stage 1	-	-	-	-	15	-
Stage 2	-	-	-	-	33	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1603	-	962	1065
Stage 1	-	-	-	-	1008	-
Stage 2	-	-	-	-	989	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1603	-	962	1065
Mov Cap-2 Maneuver	-	-	-	-	962	-
Stage 1	-	-	-	-	1008	-
Stage 2	-	-	-	-	989	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1603	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection

Int Delay, s/veh 3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	7	7	0	15	15	0
Future Vol, veh/h	7	7	0	15	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	8	0	16	16	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	16
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1602
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1602
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	987	-	-	1602	-
HCM Lane V/C Ratio	0.017	-	-	-	-
HCM Control Delay (s)	8.7	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection

Int Delay, s/veh 5.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	7	0	0	15	0
Future Vol, veh/h	0	7	0	0	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	8	0	0	16	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	8
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1612
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1612
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1017	-	-	1612	-
HCM Lane V/C Ratio	0.016	-	-	-	-
HCM Control Delay (s)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection

Int Delay, s/veh 7.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	9
Future Vol, veh/h	0	0	0	0	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	10

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1	0	0
Stage 1	-	-	1
Stage 2	-	-	0
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1622	-	1022
Stage 1	-	-	1022
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1622	-	1022
Mov Cap-2 Maneuver	-	-	1022
Stage 1	-	-	1022
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	8.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1622	-	-	-	1084
HCM Lane V/C Ratio	-	-	-	-	0.009
HCM Control Delay (s)	0	-	-	-	8.4
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	247	305	9	202	462	366	10	398	143	175	345	304
Future Volume (vph)	247	305	9	202	462	366	10	398	143	175	345	304
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		120	140		0	130		20	495		255
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			90			65			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.935				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1742	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.100			0.370			0.384			0.118		
Satd. Flow (perm)	186	1863	1583	689	1742	0	715	1863	1583	220	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			89		39				94			320
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		207			542			281			722	
Travel Time (s)		4.7			10.6			5.5			14.1	
Peak Hour Factor	0.73	0.81	0.62	0.80	0.91	0.95	0.75	0.85	0.81	0.79	0.81	0.95
Adj. Flow (vph)	338	377	15	253	508	385	13	468	177	222	426	320
Shared Lane Traffic (%)												
Lane Group Flow (vph)	338	377	15	253	893	0	13	468	177	222	426	320
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			19	
Link Offset(ft)		0			5			0			-10	
Crosswalk Width(ft)		40			16			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	3.0	20.0	20.0	3.0	20.0		3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	9.5	34.5	34.5	9.5	25.5		9.5	23.0	23.0	9.5	23.0	23.0
Total Split (s)	15.0	45.0	45.0	15.0	45.0		15.0	35.0	35.0	15.0	35.0	35.0
Total Split (%)	13.6%	40.9%	40.9%	13.6%	40.9%		13.6%	31.8%	31.8%	13.6%	31.8%	31.8%
Maximum Green (s)	11.5	39.5	39.5	11.5	39.5		11.5	30.0	30.0	11.5	30.0	30.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.5	1.5	1.5	0.5	1.5		0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.5	5.5	3.5	5.5		3.5	5.0	5.0	3.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.5	3.0	3.0	1.5	3.0		1.5	2.0	2.0	1.5	2.0	2.0
Recall Mode	None	Min	Min	None	Min		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		22.0	22.0		12.0			7.0	7.0		9.0	9.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effect Green (s)	53.7	40.2	40.2	52.3	39.5		36.3	30.3	30.3	46.5	41.6	41.6
Actuated g/C Ratio	0.49	0.37	0.37	0.48	0.36		0.33	0.28	0.28	0.42	0.38	0.38
v/c Ratio	1.32	0.55	0.02	0.58	1.37		0.05	0.91	0.35	0.88	0.61	0.40
Control Delay	195.0	31.8	0.1	21.6	207.3		19.4	62.9	17.4	59.2	33.1	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	195.0	31.8	0.1	21.6	207.3		19.4	62.9	17.4	59.2	33.1	4.6
LOS	F	C	A	C	F		B	E	B	E	C	A
Approach Delay		106.7			166.3			49.8			29.7	
Approach LOS		F			F			D			C	
Queue Length 50th (ft)	~259	212	0	97	~824		5	321	45	102	226	0
Queue Length 95th (ft)	#311	269	0	130	#1070		14	#467	87	#181	324	61
Internal Link Dist (ft)		127			462			201			642	
Turn Bay Length (ft)			120	140			130		20	495		255
Base Capacity (vph)	256	680	635	444	650		391	512	503	255	704	797
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.32	0.55	0.02	0.57	1.37		0.03	0.91	0.35	0.87	0.61	0.40

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 48 (44%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.37

Intersection Signal Delay: 94.2

Intersection LOS: F

Intersection Capacity Utilization 106.4%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Universe Blvd & Paseo Del Norte Blvd

 Ø1	 Ø2	 Ø3	 Ø4 (R)
15 s	45 s	15 s	35 s
 Ø5	 Ø6	 Ø7	 Ø8 (R)
15 s	45 s	15 s	35 s

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	9	5	538	349	0
Future Vol, veh/h	3	9	5	538	349	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	200	-	-	190
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	33	25	92	93	47
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	27	20	585	375	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1000	375	375	0	-	0
Stage 1	375	-	-	-	-	-
Stage 2	625	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	270	671	1183	-	-	-
Stage 1	695	-	-	-	-	-
Stage 2	534	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	265	671	1183	-	-	-
Mov Cap-2 Maneuver	265	-	-	-	-	-
Stage 1	683	-	-	-	-	-
Stage 2	534	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12.1	0.3		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1183	-	265	671	-	-
HCM Lane V/C Ratio	0.017	-	0.023	0.041	-	-
HCM Control Delay (s)	8.1	-	18.9	10.6	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0.1	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	17	525	6	22	336
Future Vol, veh/h	4	17	525	6	22	336
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	18	571	7	24	365
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	988	575	0	0	578	0
Stage 1	575	-	-	-	-	-
Stage 2	413	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	274	518	-	-	996	-
Stage 1	563	-	-	-	-	-
Stage 2	668	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	266	518	-	-	996	-
Mov Cap-2 Maneuver	266	-	-	-	-	-
Stage 1	563	-	-	-	-	-
Stage 2	648	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	13.7	0		0.5		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	439	996	-	
HCM Lane V/C Ratio	-	-	0.052	0.024	-	
HCM Control Delay (s)	-	-	13.7	8.7	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-	

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	6	525	6	9	331
Future Vol, veh/h	5	6	525	6	9	331
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	7	571	7	10	360

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	955	575	0
Stage 1	575	-	-
Stage 2	380	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	287	518	-
Stage 1	563	-	-
Stage 2	691	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	283	518	-
Mov Cap-2 Maneuver	283	-	-
Stage 1	563	-	-
Stage 2	682	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.9	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	376	996
HCM Lane V/C Ratio	-	-	0.032	0.01
HCM Control Delay (s)	-	-	14.9	8.7
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.1	0

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	14	484	26	19	296
Future Vol, veh/h	19	14	484	26	19	296
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	15	526	28	21	322
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	904	540	0	0	554	0
Stage 1	540	-	-	-	-	-
Stage 2	364	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	307	542	-	-	1016	-
Stage 1	584	-	-	-	-	-
Stage 2	703	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	299	542	-	-	1016	-
Mov Cap-2 Maneuver	299	-	-	-	-	-
Stage 1	584	-	-	-	-	-
Stage 2	685	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	15.8	0		0.5		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	369	1016	-	
HCM Lane V/C Ratio	-	-	0.097	0.02	-	
HCM Control Delay (s)	-	-	15.8	8.6	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-	

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	3	540	3	4	332
Future Vol, veh/h	1	3	540	3	4	332
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	3	587	3	4	361
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	958	589	0	0	590	0
Stage 1	589	-	-	-	-	-
Stage 2	369	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	285	508	-	-	985	-
Stage 1	554	-	-	-	-	-
Stage 2	699	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	284	508	-	-	985	-
Mov Cap-2 Maneuver	284	-	-	-	-	-
Stage 1	554	-	-	-	-	-
Stage 2	696	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	13.6	0		0.1		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	424	985	-	
HCM Lane V/C Ratio	-	-	0.01	0.004	-	
HCM Control Delay (s)	-	-	13.6	8.7	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	5	272	11	64	415	438	11	56	38	276	53	5
Future Volume (vph)	5	272	11	64	415	438	11	56	38	276	53	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	160		0	115		0	125		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			60			20			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.922			0.942			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3518	0	1770	3263	0	1770	1755	0	1770	1831	0
Flt Permitted	0.157			0.380			0.699			0.597		
Satd. Flow (perm)	292	3518	0	708	3263	0	1302	1755	0	1112	1831	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			280			32			7	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		529			473			218			343	
Travel Time (s)		10.3			9.2			5.0			7.8	
Peak Hour Factor	0.50	0.65	0.62	0.85	0.90	0.88	0.62	0.78	0.85	0.84	0.66	0.50
Adj. Flow (vph)	10	418	18	75	461	498	18	72	45	329	80	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	436	0	75	959	0	18	117	0	329	90	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			22			12			12	
Link Offset(ft)		0			-5			15			-5	
Crosswalk Width(ft)		30			40			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	3.0	16.0		3.0	16.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	9.5	23.5		9.5	23.5		9.5	36.5		9.5	36.5	
Total Split (s)	16.0	24.0		16.0	24.0		16.0	24.0		24.0	24.0	
Total Split (%)	18.2%	27.3%		18.2%	27.3%		18.2%	27.3%		27.3%	27.3%	
Maximum Green (s)	12.5	18.5		12.5	18.5		12.5	18.5		20.5	18.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	1.5		0.5	1.5		0.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	5.5		3.5	5.5		3.5	5.5		3.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		1.5	4.0		1.5	4.0	
Recall Mode	None	Min		None	Min		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		9.0			9.0			24.0			24.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	29.7	24.0		34.3	30.6		34.0	27.5		46.7	41.3	
Actuated g/C Ratio	0.34	0.27		0.39	0.35		0.39	0.31		0.53	0.47	
v/c Ratio	0.06	0.45		0.21	0.73		0.03	0.21		0.48	0.10	
Control Delay	17.0	28.9		18.5	21.8		11.9	19.2		14.7	14.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.0	28.9		18.5	21.8		11.9	19.2		14.7	14.1	
LOS	B	C		B	C		B	B		B	B	
Approach Delay		28.6			21.5			18.3			14.6	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)	4	109		27	171		4	32		95	22	
Queue Length 95th (ft)	7	104		48	269		10	71		151	42	
Internal Link Dist (ft)		449			393			138			263	
Turn Bay Length (ft)	140			160			115			125		
Base Capacity (vph)	323	963		426	1316		686	570		743	863	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.03	0.45		0.18	0.73		0.03	0.21		0.44	0.10	

Intersection Summary

Area Type: Other

Cycle Length: 88

Actuated Cycle Length: 88

Offset: 48 (55%), Referenced to phase 4:NETL and 8:SWTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 21.4

Intersection LOS: C

Intersection Capacity Utilization 63.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 7: Scenic Dr/Universe Blvd & Rainbow Blvd

 Ø1	 Ø2	 Ø3	 Ø4 (R)
16 s	24 s	24 s	24 s
 Ø5	 Ø6	 Ø7	 Ø8 (R)
16 s	24 s	16 s	24 s

Intersection

Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	28	0	0	21	0	0
Future Vol, veh/h	28	0	0	21	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	0	0	23	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	30
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	4.12	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	2.218	-
Pot Cap-1 Maneuver	-	1583	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1583	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1583	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection						
Int Delay, s/veh	2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	14	14	0	10	11	0
Future Vol, veh/h	14	14	0	10	11	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	15	0	11	12	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	30	0	34	23
Stage 1	-	-	-	-	23	-
Stage 2	-	-	-	-	11	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1583	-	979	1054
Stage 1	-	-	-	-	1000	-
Stage 2	-	-	-	-	1012	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1583	-	979	1054
Mov Cap-2 Maneuver	-	-	-	-	979	-
Stage 1	-	-	-	-	1000	-
Stage 2	-	-	-	-	1012	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		8.7		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	979	-	-	1583	-	
HCM Lane V/C Ratio	0.012	-	-	-	-	
HCM Control Delay (s)	8.7	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Intersection

Int Delay, s/veh 3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	14	0	0	10	0
Future Vol, veh/h	0	14	0	0	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	15	0	0	11	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	15
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1603
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1603
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1011	-	-	1603	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection

Int Delay, s/veh 7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	0	0	0	0	4
Future Vol, veh/h	7	0	0	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	0	0	0	0	4

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1	0	0 17 1
Stage 1	-	-	- 1 -
Stage 2	-	-	- 16 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1622	-	- 1001 1084
Stage 1	-	-	- 1022 -
Stage 2	-	-	- 1007 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1622	-	- 996 1084
Mov Cap-2 Maneuver	-	-	- 996 -
Stage 1	-	-	- 1017 -
Stage 2	-	-	- 1007 -

Approach	EB	WB	SB
HCM Control Delay, s	7.2	0	8.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1622	-	-	-	1084
HCM Lane V/C Ratio	0.005	-	-	-	0.004
HCM Control Delay (s)	7.2	0	-	-	8.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

APPENDIX L

Phase III 2027 - No Build Synchro Reports

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	458	67	101	208	159	12	237	165	334	533	290
Future Volume (vph)	193	458	67	101	208	159	12	237	165	334	533	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		120	140		0	130		20	495		255
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			90			65			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.937				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1745	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.143			0.164			0.220			0.416		
Satd. Flow (perm)	266	1863	1583	305	1745	0	410	1863	1583	775	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			124		30				164			299
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		207			542			281			722	
Travel Time (s)		4.7			10.6			5.5			14.1	
Peak Hour Factor	0.84	0.82	0.79	0.61	0.69	0.73	0.45	0.79	0.59	0.87	0.78	0.88
Adj. Flow (vph)	230	559	85	166	301	218	27	300	280	384	683	330
Shared Lane Traffic (%)												
Lane Group Flow (vph)	230	559	85	166	519	0	27	300	280	384	683	330
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			19	
Link Offset(ft)		0			5			0			-10	
Crosswalk Width(ft)		40			16			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8

No Build 2027 AM
1: Universe Blvd & Paseo Del Norte Blvd

Lanes, Volumes, Timings
04/14/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	3.0	20.0	20.0	3.0	20.0		3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	9.5	34.5	34.5	9.5	25.5		9.5	23.0	23.0	9.5	23.0	23.0
Total Split (s)	17.0	32.0	32.0	13.0	29.0		13.0	45.0	45.0	19.0	51.0	51.0
Total Split (%)	15.5%	29.1%	29.1%	11.8%	26.4%		11.8%	40.9%	40.9%	17.3%	46.4%	46.4%
Maximum Green (s)	13.5	26.5	26.5	9.5	23.5		9.5	40.0	40.0	15.5	46.0	46.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.5	1.5	1.5	0.5	1.5		0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.5	5.5	3.5	5.5		3.5	5.0	5.0	3.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.5	3.0	3.0	1.5	3.0		1.5	2.0	2.0	1.5	2.0	2.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		22.0	22.0		12.0			7.0	7.0		9.0	9.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effect Green (s)	42.2	27.9	27.9	35.5	24.4		47.1	40.8	40.8	60.5	53.8	53.8
Actuated g/C Ratio	0.38	0.25	0.25	0.32	0.22		0.43	0.37	0.37	0.55	0.49	0.49
v/c Ratio	0.84	1.18	0.17	0.76	1.27		0.11	0.43	0.41	0.69	0.75	0.36
Control Delay	51.9	140.0	2.9	47.0	172.5		13.4	28.7	12.4	21.7	30.2	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.9	140.0	2.9	47.0	172.5		13.4	28.7	12.4	21.7	30.2	4.2
LOS	D	F	A	D	F		B	C	B	C	C	A
Approach Delay		103.5			142.1			20.5			21.7	
Approach LOS		F			F			C			C	
Queue Length 50th (ft)	113	~480	0	78	~458		8	159	56	148	399	12
Queue Length 95th (ft)	#197	#600	6	83	#438		11	203	44	207	448	59
Internal Link Dist (ft)		127			462			201			642	
Turn Bay Length (ft)			120	140			130		20	495		255
Base Capacity (vph)	287	472	494	226	410		310	691	691	566	910	926
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.80	1.18	0.17	0.73	1.27		0.09	0.43	0.41	0.68	0.75	0.36

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.27

Intersection Signal Delay: 64.7

Intersection LOS: E

Intersection Capacity Utilization 78.6%

ICU Level of Service D

Analysis Period (min) 15

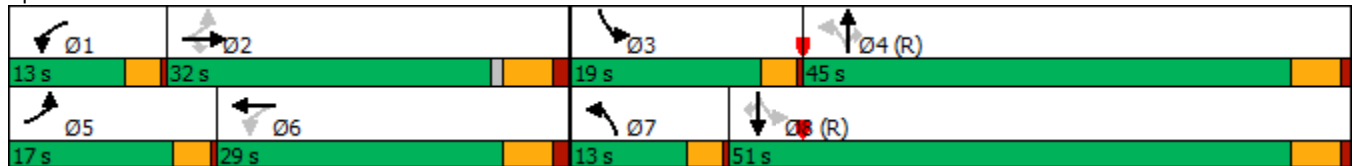
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Universe Blvd & Paseo Del Norte Blvd



Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	29	62	188	654	145
Future Vol, veh/h	13	29	62	188	654	145
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	200	-	-	190
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	39	45	49	92	92	47
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	64	127	204	711	309
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1169	711	1020	0	-	0
Stage 1	711	-	-	-	-	-
Stage 2	458	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	213	433	680	-	-	-
Stage 1	487	-	-	-	-	-
Stage 2	637	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	173	433	680	-	-	-
Mov Cap-2 Maneuver	173	-	-	-	-	-
Stage 1	396	-	-	-	-	-
Stage 2	637	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	20.2	4.4		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	680	-	173	433	-	-
HCM Lane V/C Ratio	0.186	-	0.193	0.149	-	-
HCM Control Delay (s)	11.5	-	30.7	14.8	-	-
HCM Lane LOS	B	-	D	B	-	-
HCM 95th %tile Q(veh)	0.7	-	0.7	0.5	-	-

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	250	0	0	683
Future Vol, veh/h	0	0	250	0	0	683
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	272	0	0	742

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1014	272	0
Stage 1	272	-	-
Stage 2	742	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	264	767	-
Stage 1	774	-	-
Stage 2	471	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	264	767	-
Mov Cap-2 Maneuver	264	-	-
Stage 1	774	-	-
Stage 2	471	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1291
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

No Build 2027 AM
4: Universe Blvd & Driveway 1

HCM 6th TWSC
04/14/2022

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	250	0	0	683
Future Vol, veh/h	0	0	250	0	0	683
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	272	0	0	742
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1014	272	0	0	272	0
Stage 1	272	-	-	-	-	-
Stage 2	742	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	264	767	-	-	1291	-
Stage 1	774	-	-	-	-	-
Stage 2	471	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	264	767	-	-	1291	-
Mov Cap-2 Maneuver	264	-	-	-	-	-
Stage 1	774	-	-	-	-	-
Stage 2	471	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	1291	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	-	-	0	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	250	0	0	683
Future Vol, veh/h	0	0	250	0	0	683
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	272	0	0	742

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1014	272	0
Stage 1	272	-	-
Stage 2	742	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	264	767	-
Stage 1	774	-	-
Stage 2	471	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	264	767	-
Mov Cap-2 Maneuver	264	-	-
Stage 1	774	-	-
Stage 2	471	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1291
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	250	0	0	683
Future Vol, veh/h	0	0	250	0	0	683
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	272	0	0	742

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1014	272	0	0	272
Stage 1	272	-	-	-	-
Stage 2	742	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	264	767	-	-	1291
Stage 1	774	-	-	-	-
Stage 2	471	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	264	767	-	-	1291
Mov Cap-2 Maneuver	264	-	-	-	-
Stage 1	774	-	-	-	-
Stage 2	471	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1291
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	3	511	17	12	407	200	62	48	55	632	33	19
Future Volume (vph)	3	511	17	12	407	200	62	48	55	632	33	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	160		0	115		0	125		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			60			20			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.958			0.921			0.924	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3391	0	1770	1716	0	1770	1721	0
Flt Permitted	0.156			0.219			0.699			0.483		
Satd. Flow (perm)	291	3514	0	408	3391	0	1302	1716	0	900	1721	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			58			49			45	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		529			473			218			343	
Travel Time (s)		10.3			9.2			5.0			7.8	
Peak Hour Factor	0.50	0.78	0.50	0.50	0.67	0.86	0.49	0.71	0.73	0.87	0.75	0.42
Adj. Flow (vph)	6	655	34	24	607	233	127	68	75	726	44	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	689	0	24	840	0	127	143	0	726	89	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			22			12			12	
Link Offset(ft)		0			-5			15			-5	
Crosswalk Width(ft)		30			40			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		

No Build 2027 AM
7: Scenic Dr/Universe Blvd & Rainbow Blvd

Lanes, Volumes, Timings
04/14/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	3.0	16.0		3.0	16.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	9.5	23.5		9.5	23.5		9.5	36.5		9.5	36.5	
Total Split (s)	16.0	36.0		16.0	34.0		16.0	24.0		24.0	24.0	
Total Split (%)	16.0%	36.0%		16.0%	34.0%		16.0%	24.0%		24.0%	24.0%	
Maximum Green (s)	12.5	30.5		12.5	28.5		12.5	18.5		20.5	18.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	1.5		0.5	1.5		0.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	5.5		3.5	5.5		3.5	5.5		3.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		1.5	4.0		1.5	4.0	
Recall Mode	None	Min		None	Min		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		9.0			9.0			24.0			24.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	32.7	28.8		34.0	30.8		28.0	18.5		58.5	45.5	
Actuated g/C Ratio	0.33	0.29		0.34	0.31		0.28	0.18		0.58	0.46	
v/c Ratio	0.04	0.68		0.12	0.77		0.32	0.40		0.88	0.11	
Control Delay	17.3	34.4		19.2	34.0		17.9	27.1		32.5	12.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.3	34.4		19.2	34.0		17.9	27.1		32.5	12.3	
LOS	B	C		B	C		B	C		C	B	
Approach Delay		34.3			33.6			22.8			30.3	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	3	200		11	243		31	52		279	14	
Queue Length 95th (ft)	5	196		12	184		42	78		#753	44	
Internal Link Dist (ft)		449			393			138			263	
Turn Bay Length (ft)	140			160			115			125		
Base Capacity (vph)	285	1115		311	1163		488	357		827	808	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.02	0.62		0.08	0.72		0.26	0.40		0.88	0.11	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 60 (60%), Referenced to phase 4:NETL and 8:SWTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 31.7

Intersection LOS: C

Intersection Capacity Utilization 68.5%

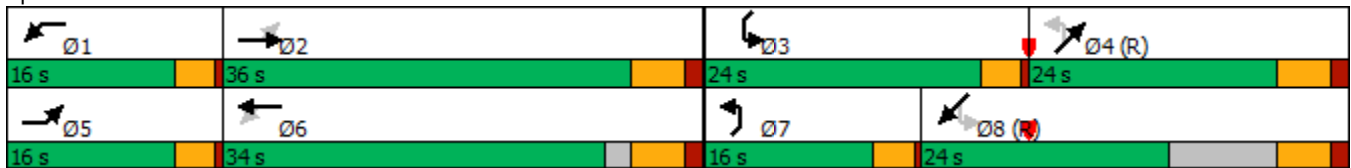
ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 7: Scenic Dr/Universe Blvd & Rainbow Blvd



Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		0	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1622	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1622	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	4.12	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	2.218	-
Pot Cap-1 Maneuver	-	1622	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1622	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1622	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1	0	0
Stage 1	-	-	1
Stage 2	-	-	0
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1622	-	1022
Stage 1	-	-	1022
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1622	-	1022
Mov Cap-2 Maneuver	-	-	1022
Stage 1	-	-	1022
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Lanes, Volumes, Timings

1: Universe Blvd & Paseo Del Norte Blvd

04/14/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	259	319	7	176	481	384	8	416	123	183	359	319
Future Volume (vph)	259	319	7	176	481	384	8	416	123	183	359	319
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		120	140		0	130		20	495		255
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			90			65			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.935				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1742	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.099			0.357			0.385			0.119		
Satd. Flow (perm)	184	1863	1583	665	1742	0	717	1863	1583	222	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			89		39				94			336
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		207			542			281			722	
Travel Time (s)		4.7			10.6			5.5			14.1	
Peak Hour Factor	0.73	0.81	0.62	0.80	0.91	0.95	0.75	0.85	0.81	0.79	0.81	0.95
Adj. Flow (vph)	355	394	11	220	529	404	11	489	152	232	443	336
Shared Lane Traffic (%)												
Lane Group Flow (vph)	355	394	11	220	933	0	11	489	152	232	443	336
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			19	
Link Offset(ft)		0			5			0			-10	
Crosswalk Width(ft)		40			16			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8

Lanes, Volumes, Timings

1: Universe Blvd & Paseo Del Norte Blvd

04/14/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	3.0	20.0	20.0	3.0	20.0		3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	9.5	34.5	34.5	9.5	25.5		9.5	23.0	23.0	9.5	23.0	23.0
Total Split (s)	15.0	45.0	45.0	15.0	45.0		15.0	35.0	35.0	15.0	35.0	35.0
Total Split (%)	13.6%	40.9%	40.9%	13.6%	40.9%		13.6%	31.8%	31.8%	13.6%	31.8%	31.8%
Maximum Green (s)	11.5	39.5	39.5	11.5	39.5		11.5	30.0	30.0	11.5	30.0	30.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.5	1.5	1.5	0.5	1.5		0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.5	5.5	3.5	5.5		3.5	5.0	5.0	3.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.5	3.0	3.0	1.5	3.0		1.5	2.0	2.0	1.5	2.0	2.0
Recall Mode	None	Min	Min	None	Min		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		22.0	22.0		12.0			7.0	7.0		9.0	9.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effect Green (s)	54.0	40.6	40.6	51.9	39.5		36.0	30.0	30.0	46.5	43.3	43.3
Actuated g/C Ratio	0.49	0.37	0.37	0.47	0.36		0.33	0.27	0.27	0.42	0.39	0.39
v/c Ratio	1.39	0.57	0.02	0.53	1.44		0.04	0.96	0.30	0.91	0.61	0.41
Control Delay	223.0	32.1	0.0	20.0	233.4		19.4	71.9	14.9	64.0	31.6	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	223.0	32.1	0.0	20.0	233.4		19.4	71.9	14.9	64.0	31.6	4.3
LOS	F	C	A	C	F		B	E	B	E	C	A
Approach Delay		120.8			192.7			57.7			30.0	
Approach LOS		F			F			E			C	
Queue Length 50th (ft)	~285	224	0	83	~884		4	341	31	110	238	0
Queue Length 95th (ft)	#335	282	0	114	#1131		13	#498	69	#195	338	62
Internal Link Dist (ft)		127			462			201			642	
Turn Bay Length (ft)			120	140			130		20	495		255
Base Capacity (vph)	256	687	640	435	650		390	508	500	255	732	826
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.39	0.57	0.02	0.51	1.44		0.03	0.96	0.30	0.91	0.61	0.41

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 48 (44%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.44

Intersection Signal Delay: 106.8

Intersection LOS: F

Intersection Capacity Utilization 110.6%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Lanes, Volumes, Timings

1: Universe Blvd & Paseo Del Norte Blvd

04/14/2022

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Universe Blvd & Paseo Del Norte Blvd

 Ø1	 Ø2	 Ø3	 Ø4 (R)
15 s	45 s	15 s	35 s
 Ø5	 Ø6	 Ø7	 Ø8 (R)
15 s	45 s	15 s	35 s

HCM 6th TWSC

2: Universe Blvd & School Driveway

04/14/2022

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	5	2	526	315	0
Future Vol, veh/h	3	5	2	526	315	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	200	-	-	190
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	33	25	92	93	47
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	15	8	572	339	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	927	339	339	0	-	0
Stage 1	339	-	-	-	-	-
Stage 2	588	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	298	703	1220	-	-	-
Stage 1	722	-	-	-	-	-
Stage 2	555	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	296	703	1220	-	-	-
Mov Cap-2 Maneuver	296	-	-	-	-	-
Stage 1	717	-	-	-	-	-
Stage 2	555	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12.2	0.1		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1220	-	296	703	-	-
HCM Lane V/C Ratio	0.007	-	0.02	0.022	-	-
HCM Control Delay (s)	8	-	17.4	10.2	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.1	-	-

HCM 6th TWSC
3: Universe Blvd & Rosa Parks Rd

04/14/2022

Intersection

Int Delay, s/veh 0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	528	0	0	319
Future Vol, veh/h	0	0	528	0	0	319
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	574	0	0	347

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	921	574	0
Stage 1	574	-	-
Stage 2	347	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	300	518	-
Stage 1	563	-	-
Stage 2	716	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	300	518	-
Mov Cap-2 Maneuver	300	-	-
Stage 1	563	-	-
Stage 2	716	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	999
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

HCM 6th TWSC
4: Universe Blvd & Driveway 1

04/14/2022

Intersection

Int Delay, s/veh 0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	528	0	0	319
Future Vol, veh/h	0	0	528	0	0	319
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	574	0	0	347

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	921	574	0
Stage 1	574	-	-
Stage 2	347	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	300	518	-
Stage 1	563	-	-
Stage 2	716	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	300	518	-
Mov Cap-2 Maneuver	300	-	-
Stage 1	563	-	-
Stage 2	716	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	999
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

HCM 6th TWSC
5: Universe Blvd & Driveway 2

04/14/2022

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	528	0	0	319
Future Vol, veh/h	0	0	528	0	0	319
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	574	0	0	347

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	921	574	0
Stage 1	574	-	-
Stage 2	347	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	300	518	999
Stage 1	563	-	-
Stage 2	716	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	300	518	999
Mov Cap-2 Maneuver	300	-	-
Stage 1	563	-	-
Stage 2	716	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	999	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	0	0	-
HCM Lane LOS	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	-

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	528	0	0	319
Future Vol, veh/h	0	0	528	0	0	319
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	574	0	0	347
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	921	574	0	0	574	0
Stage 1	574	-	-	-	-	-
Stage 2	347	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	300	518	-	-	999	-
Stage 1	563	-	-	-	-	-
Stage 2	716	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	300	518	-	-	999	-
Mov Cap-2 Maneuver	300	-	-	-	-	-
Stage 1	563	-	-	-	-	-
Stage 2	716	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	0	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	999	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	-	-	0	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

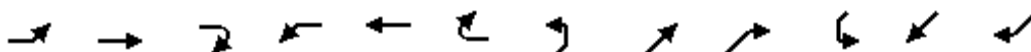
Lanes, Volumes, Timings
7: Scenic Dr/Universe Blvd & Rainbow Blvd

04/14/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	3	285	12	68	435	470	12	56	40	264	54	3
Future Volume (vph)	3	285	12	68	435	470	12	56	40	264	54	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	160		0	115		0	125		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			60			20			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.921			0.941			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3518	0	1770	3260	0	1770	1753	0	1770	1844	0
Flt Permitted	0.151			0.377			0.700			0.589		
Satd. Flow (perm)	281	3518	0	702	3260	0	1304	1753	0	1097	1844	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			288			34			4	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		529			473			218			343	
Travel Time (s)		10.3			9.2			5.0			7.8	
Peak Hour Factor	0.50	0.65	0.62	0.85	0.90	0.88	0.62	0.78	0.85	0.84	0.66	0.50
Adj. Flow (vph)	6	438	19	80	483	534	19	72	47	314	82	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	457	0	80	1017	0	19	119	0	314	88	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			22			12			12	
Link Offset(ft)		0			-5			15			-5	
Crosswalk Width(ft)		30			40			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		

Lanes, Volumes, Timings
7: Scenic Dr/Universe Blvd & Rainbow Blvd

04/14/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	3.0	16.0		3.0	16.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	9.5	23.5		9.5	23.5		9.5	36.5		9.5	36.5	
Total Split (s)	16.0	24.0		16.0	24.0		16.0	24.0		24.0	24.0	
Total Split (%)	18.2%	27.3%		18.2%	27.3%		18.2%	27.3%		27.3%	27.3%	
Maximum Green (s)	12.5	18.5		12.5	18.5		12.5	18.5		20.5	18.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	1.5		0.5	1.5		0.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	5.5		3.5	5.5		3.5	5.5		3.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		1.5	4.0		1.5	4.0	
Recall Mode	None	Min		None	Min		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		9.0			9.0			24.0			24.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	31.6	26.1		36.5	32.9		31.9	25.4		44.5	39.1	
Actuated g/C Ratio	0.36	0.30		0.41	0.37		0.36	0.29		0.51	0.44	
v/c Ratio	0.03	0.44		0.22	0.73		0.04	0.22		0.48	0.11	
Control Delay	16.0	27.4		17.4	21.0		12.6	19.8		15.9	15.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.0	27.4		17.4	21.0		12.6	19.8		15.9	15.5	
LOS	B	C		B	C		B	B		B	B	
Approach Delay		27.2			20.8			18.8			15.8	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)	2	108		26	174		5	35		99	24	
Queue Length 95th (ft)	5	110		51	#322		11	70		144	43	
Internal Link Dist (ft)		449			393			138			263	
Turn Bay Length (ft)	140			160			115			125		
Base Capacity (vph)	328	1046		442	1398		656	531		711	821	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.02	0.44		0.18	0.73		0.03	0.22		0.44	0.11	

Intersection Summary

Area Type: Other

Cycle Length: 88

Actuated Cycle Length: 88

Offset: 48 (55%), Referenced to phase 4:NETL and 8:SWTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 21.1

Intersection LOS: C

Intersection Capacity Utilization 64.3%

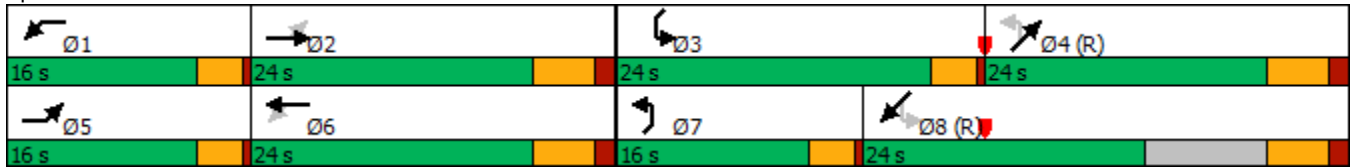
ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 7: Scenic Dr/Universe Blvd & Rainbow Blvd



HCM 6th TWSC
8: Driveway 3 & Rosa Parks Rd

04/14/2022

Intersection

Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1622
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1622
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1622	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

HCM 6th TWSC
9: Driveway 4 & Rosa Parks Rd

04/14/2022

Intersection

Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1622
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1622
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1622	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

HCM 6th TWSC
10: Driveway 5 & Rosa Parks Rd

04/14/2022

Intersection

Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	4.12	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	2.218	-
Pot Cap-1 Maneuver	-	1622	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1622	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1622	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1	0	0
Stage 1	-	-	1
Stage 2	-	-	0
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1622	-	1022
Stage 1	-	-	1022
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1622	-	1022
Mov Cap-2 Maneuver	-	-	1022
Stage 1	-	-	1022
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

APPENDIX M

Phase III 2027 - Build Synchro Reports

Build 2027 AM
1: Universe Blvd & Paseo Del Norte Blvd

Lanes, Volumes, Timings

04/14/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	458	74	117	208	159	14	242	206	334	542	290
Future Volume (vph)	193	458	74	117	208	159	14	242	206	334	542	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		120	140		0	130		20	495		255
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			90			65			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.937				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1745	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.145			0.164			0.206			0.410		
Satd. Flow (perm)	270	1863	1583	305	1745	0	384	1863	1583	764	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			124		30				164			294
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		207			542			281			722	
Travel Time (s)		4.7			10.6			5.5			14.1	
Peak Hour Factor	0.84	0.82	0.79	0.61	0.69	0.73	0.45	0.79	0.59	0.87	0.78	0.88
Adj. Flow (vph)	230	559	94	192	301	218	31	306	349	384	695	330
Shared Lane Traffic (%)												
Lane Group Flow (vph)	230	559	94	192	519	0	31	306	349	384	695	330
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			19	
Link Offset(ft)		0			5			0			-10	
Crosswalk Width(ft)		40			16			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8

Build 2027 AM
1: Universe Blvd & Paseo Del Norte Blvd

Lanes, Volumes, Timings
04/14/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	3.0	20.0	20.0	3.0	20.0		3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	9.5	34.5	34.5	9.5	25.5		9.5	23.0	23.0	9.5	23.0	23.0
Total Split (s)	17.0	32.0	32.0	13.0	29.0		13.0	45.0	45.0	19.0	51.0	51.0
Total Split (%)	15.5%	29.1%	29.1%	11.8%	26.4%		11.8%	40.9%	40.9%	17.3%	46.4%	46.4%
Maximum Green (s)	13.5	26.5	26.5	9.5	23.5		9.5	40.0	40.0	15.5	46.0	46.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.5	1.5	1.5	0.5	1.5		0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.5	5.5	3.5	5.5		3.5	5.0	5.0	3.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.5	3.0	3.0	1.5	3.0		1.5	2.0	2.0	1.5	2.0	2.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		22.0	22.0		12.0			7.0	7.0		9.0	9.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effect Green (s)	41.8	27.6	27.6	35.9	24.4		47.2	40.8	40.8	60.5	53.7	53.7
Actuated g/C Ratio	0.38	0.25	0.25	0.33	0.22		0.43	0.37	0.37	0.55	0.49	0.49
v/c Ratio	0.84	1.20	0.19	0.85	1.27		0.14	0.44	0.51	0.69	0.76	0.36
Control Delay	51.6	146.1	3.6	59.0	172.5		13.7	28.9	16.7	22.0	31.0	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.6	146.1	3.6	59.0	172.5		13.7	28.9	16.7	22.0	31.0	4.4
LOS	D	F	A	E	F		B	C	B	C	C	A
Approach Delay		106.3			141.8			22.0			22.3	
Approach LOS		F			F			C			C	
Queue Length 50th (ft)	113	~480	0	92	~458		10	163	97	148	411	14
Queue Length 95th (ft)	#195	#600	12	94	#438		11	207	72	207	461	61
Internal Link Dist (ft)		127			462			201			642	
Turn Bay Length (ft)			120	140			130		20	495		255
Base Capacity (vph)	288	466	489	226	410		300	691	691	561	909	923
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.80	1.20	0.19	0.85	1.27		0.10	0.44	0.51	0.68	0.76	0.36

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.27

Intersection Signal Delay: 65.4

Intersection LOS: E

Intersection Capacity Utilization 78.6%

ICU Level of Service D

Analysis Period (min) 15

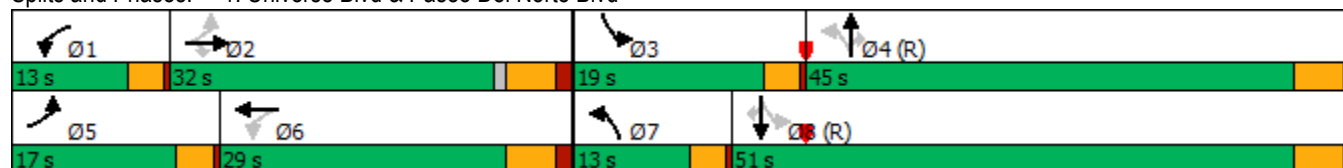
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Universe Blvd & Paseo Del Norte Blvd



Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	33	68	254	693	145
Future Vol, veh/h	13	33	68	254	693	145
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	200	-	-	190
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	39	45	49	92	92	47
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	73	139	276	753	309
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1307	753	1062	0	-	0
Stage 1	753	-	-	-	-	-
Stage 2	554	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	176	410	656	-	-	-
Stage 1	465	-	-	-	-	-
Stage 2	575	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	139	410	656	-	-	-
Mov Cap-2 Maneuver	139	-	-	-	-	-
Stage 1	366	-	-	-	-	-
Stage 2	575	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	23	4		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	656	-	139	410	-	-
HCM Lane V/C Ratio	0.212	-	0.24	0.179	-	-
HCM Control Delay (s)	12	-	38.9	15.7	-	-
HCM Lane LOS	B	-	E	C	-	-
HCM 95th %tile Q(veh)	0.8	-	0.9	0.6	-	-

Intersection						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	34	288	19	28	698
Future Vol, veh/h	15	34	288	19	28	698
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	37	313	21	30	759

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1143	324	0	0	334
Stage 1	324	-	-	-	-
Stage 2	819	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	221	717	-	-	1225
Stage 1	733	-	-	-	-
Stage 2	433	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	212	717	-	-	1225
Mov Cap-2 Maneuver	212	-	-	-	-
Stage 1	733	-	-	-	-
Stage 2	415	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.9	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	415	1225
HCM Lane V/C Ratio	-	-	0.128	0.025
HCM Control Delay (s)	-	-	14.9	8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	23	284	18	21	692
Future Vol, veh/h	19	23	284	18	21	692
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	25	309	20	23	752
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1117	319	0	0	329	0
Stage 1	319	-	-	-	-	-
Stage 2	798	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	229	722	-	-	1231	-
Stage 1	737	-	-	-	-	-
Stage 2	443	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	222	722	-	-	1231	-
Mov Cap-2 Maneuver	222	-	-	-	-	-
Stage 1	737	-	-	-	-	-
Stage 2	429	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	16.5	0		0.2		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	358	1231	-	
HCM Lane V/C Ratio	-	-	0.128	0.019	-	
HCM Control Delay (s)	-	-	16.5	8	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-	

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	26	276	11	8	703
Future Vol, veh/h	30	26	276	11	8	703
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	28	300	12	9	764
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1088	306	0	0	312	0
Stage 1	306	-	-	-	-	-
Stage 2	782	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	239	734	-	-	1248	-
Stage 1	747	-	-	-	-	-
Stage 2	451	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	236	734	-	-	1248	-
Mov Cap-2 Maneuver	236	-	-	-	-	-
Stage 1	747	-	-	-	-	-
Stage 2	445	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	17.7	0	0.1			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	345	1248	-	
HCM Lane V/C Ratio	-	-	0.176	0.007	-	
HCM Control Delay (s)	-	-	17.7	7.9	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	0.6	0	-	

Intersection

Int Delay, s/veh 0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	5	282	1	2	731
Future Vol, veh/h	4	5	282	1	2	731
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	5	307	1	2	795

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1107	308	0
Stage 1	308	-	-
Stage 2	799	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	233	732	-
Stage 1	745	-	-
Stage 2	443	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	232	732	-
Mov Cap-2 Maneuver	232	-	-
Stage 1	745	-	-
Stage 2	442	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	374	1253
HCM Lane V/C Ratio	-	-	0.026	0.002
HCM Control Delay (s)	-	-	14.9	7.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.1	0

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	7	511	17	12	407	225	62	52	55	679	36	21
Future Volume (vph)	7	511	17	12	407	225	62	52	55	679	36	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	160		0	115		0	125		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			60			20			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.955			0.924			0.923	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3380	0	1770	1721	0	1770	1719	0
Flt Permitted	0.133			0.235			0.694			0.480		
Satd. Flow (perm)	248	3514	0	438	3380	0	1293	1721	0	894	1719	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			70			45			50	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		529			473			218			343	
Travel Time (s)		10.3			9.2			5.0			7.8	
Peak Hour Factor	0.50	0.78	0.50	0.50	0.67	0.86	0.49	0.71	0.73	0.87	0.75	0.42
Adj. Flow (vph)	14	655	34	24	607	262	127	73	75	780	48	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	689	0	24	869	0	127	148	0	780	98	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			22			12			12	
Link Offset(ft)		0			-5			15			-5	
Crosswalk Width(ft)		30			40			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		

Build 2027 AM
7: Scenic Dr/Universe Blvd & Rainbow Blvd

Lanes, Volumes, Timings
04/14/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	3.0	16.0		3.0	16.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	9.5	23.5		9.5	23.5		9.5	36.5		9.5	36.5	
Total Split (s)	16.0	36.0		16.0	34.0		16.0	24.0		24.0	24.0	
Total Split (%)	16.0%	36.0%		16.0%	34.0%		16.0%	24.0%		24.0%	24.0%	
Maximum Green (s)	12.5	30.5		12.5	28.5		12.5	18.5		20.5	18.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	1.5		0.5	1.5		0.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	5.5		3.5	5.5		3.5	5.5		3.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		1.5	4.0		1.5	4.0	
Recall Mode	None	Min		None	Min		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		9.0			9.0			24.0			24.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	34.5	30.4		34.8	30.6		28.2	18.5		56.9	43.8	
Actuated g/C Ratio	0.34	0.30		0.35	0.31		0.28	0.18		0.57	0.44	
v/c Ratio	0.09	0.64		0.11	0.80		0.32	0.42		0.98	0.13	
Control Delay	17.3	32.3		17.9	35.1		18.3	28.9		49.8	12.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.3	32.3		17.9	35.1		18.3	28.9		49.8	12.9	
LOS	B	C		B	D		B	C		D	B	
Approach Delay		32.0			34.6			24.0			45.7	
Approach LOS		C			C			C			D	
Queue Length 50th (ft)	6	195		10	245		32	57		330	16	
Queue Length 95th (ft)	8	193		12	187		43	83		#841	48	
Internal Link Dist (ft)		449			393			138			263	
Turn Bay Length (ft)	140			160			115			125		
Base Capacity (vph)	279	1141		324	1147		486	355		797	780	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.05	0.60		0.07	0.76		0.26	0.42		0.98	0.13	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 60 (60%), Referenced to phase 4:NETL and 8:SWTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 36.4

Intersection LOS: D

Intersection Capacity Utilization 71.9%

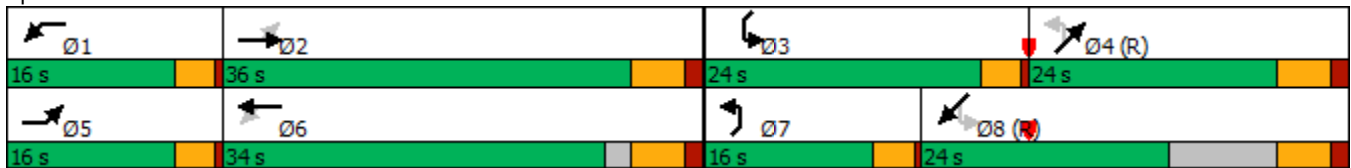
ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 7: Scenic Dr/Universe Blvd & Rainbow Blvd



Intersection

Int Delay, s/veh 2.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	14	33	0	30	19	8
Future Vol, veh/h	14	33	0	30	19	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	36	0	33	21	9

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	51
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1555
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1555
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	967	-	-	1555	-
HCM Lane V/C Ratio	0.03	-	-	-	-
HCM Control Delay (s)	8.8	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	7	7	0	15	15	0
Future Vol, veh/h	7	7	0	15	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	8	0	16	16	0

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	16	0	28	12
Stage 1	-	-	-	-	12	-
Stage 2	-	-	-	-	16	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1602	-	987	1069
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	1007	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1602	-	987	1069
Mov Cap-2 Maneuver	-	-	-	-	987	-
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	1007	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	987	-	-	1602	-
HCM Lane V/C Ratio	0.017	-	-	-	-
HCM Control Delay (s)	8.7	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection

Int Delay, s/veh 5.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	7	0	0	15	0
Future Vol, veh/h	0	7	0	0	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	8	0	0	16	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	8
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1017	-	-	1612	-
HCM Lane V/C Ratio	0.016	-	-	-	-
HCM Control Delay (s)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection

Int Delay, s/veh 7.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	0	0	0	0	9
Future Vol, veh/h	3	0	0	0	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	0	0	0	0	10

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1	0	7
Stage 1	-	-	1
Stage 2	-	-	6
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1622	-	1014
Stage 1	-	-	1022
Stage 2	-	-	1017
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1622	-	1012
Mov Cap-2 Maneuver	-	-	1012
Stage 1	-	-	1020
Stage 2	-	-	1017

Approach	EB	WB	SB
HCM Control Delay, s	7.2	0	8.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1622	-	-	-	1084
HCM Lane V/C Ratio	0.002	-	-	-	0.009
HCM Control Delay (s)	7.2	0	-	-	8.4
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	259	319	16	212	481	384	17	428	150	183	374	319
Future Volume (vph)	259	319	16	212	481	384	17	428	150	183	374	319
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		120	140		0	130		20	495		255
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			90			65			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.935				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1742	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.100			0.349			0.327			0.119		
Satd. Flow (perm)	186	1863	1583	650	1742	0	609	1863	1583	222	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			89		39				94			336
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		207			542			281			722	
Travel Time (s)		4.7			10.6			5.5			14.1	
Peak Hour Factor	0.73	0.81	0.62	0.80	0.91	0.95	0.75	0.85	0.81	0.79	0.81	0.95
Adj. Flow (vph)	355	394	26	265	529	404	23	504	185	232	462	336
Shared Lane Traffic (%)												
Lane Group Flow (vph)	355	394	26	265	933	0	23	504	185	232	462	336
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			19	
Link Offset(ft)		0			5			0			-10	
Crosswalk Width(ft)		40			16			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	3.0	20.0	20.0	3.0	20.0		3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	9.5	34.5	34.5	9.5	25.5		9.5	23.0	23.0	9.5	23.0	23.0
Total Split (s)	15.0	45.0	45.0	15.0	45.0		15.0	35.0	35.0	15.0	35.0	35.0
Total Split (%)	13.6%	40.9%	40.9%	13.6%	40.9%		13.6%	31.8%	31.8%	13.6%	31.8%	31.8%
Maximum Green (s)	11.5	39.5	39.5	11.5	39.5		11.5	30.0	30.0	11.5	30.0	30.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.5	1.5	1.5	0.5	1.5		0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.5	5.5	3.5	5.5		3.5	5.0	5.0	3.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.5	3.0	3.0	1.5	3.0		1.5	2.0	2.0	1.5	2.0	2.0
Recall Mode	None	Min	Min	None	Min		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		22.0	22.0		12.0			7.0	7.0		9.0	9.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effect Green (s)	53.6	40.1	40.1	52.4	39.5		36.4	30.0	30.0	46.5	41.3	41.3
Actuated g/C Ratio	0.49	0.36	0.36	0.48	0.36		0.33	0.27	0.27	0.42	0.38	0.38
v/c Ratio	1.39	0.58	0.04	0.63	1.44		0.09	0.99	0.37	0.91	0.66	0.42
Control Delay	223.0	32.6	0.1	23.2	233.4		19.9	78.7	18.2	64.0	35.2	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	223.0	32.6	0.1	23.2	233.4		19.9	78.7	18.2	64.0	35.2	4.7
LOS	F	C	A	C	F		B	E	B	E	D	A
Approach Delay		118.7			186.9			61.1			31.8	
Approach LOS		F			F			E			C	
Queue Length 50th (ft)	~284	224	0	103	~884		9	355	50	110	252	0
Queue Length 95th (ft)	#334	282	0	136	#1131		21	#521	93	#195	360	63
Internal Link Dist (ft)		127			462			201			642	
Turn Bay Length (ft)			120	140			130		20	495		255
Base Capacity (vph)	256	678	633	430	650		359	508	500	255	700	804
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.39	0.58	0.04	0.62	1.44		0.06	0.99	0.37	0.91	0.66	0.42

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 48 (44%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.44

Intersection Signal Delay: 105.6

Intersection LOS: F

Intersection Capacity Utilization 111.2%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Universe Blvd & Paseo Del Norte Blvd

 Ø1	 Ø2	 Ø3	 Ø4 (R)
15 s	45 s	15 s	35 s
 Ø5	 Ø6	 Ø7	 Ø8 (R)
15 s	45 s	15 s	35 s

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	11	10	586	391	0
Future Vol, veh/h	3	11	10	586	391	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	200	-	-	190
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	33	25	92	93	47
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	33	40	637	420	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1137	420	420	0	-	0
Stage 1	420	-	-	-	-	-
Stage 2	717	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	223	633	1139	-	-	-
Stage 1	663	-	-	-	-	-
Stage 2	484	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	215	633	1139	-	-	-
Mov Cap-2 Maneuver	215	-	-	-	-	-
Stage 1	640	-	-	-	-	-
Stage 2	484	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12.7	0.5		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1139	-	215	633	-	-
HCM Lane V/C Ratio	0.035	-	0.028	0.053	-	-
HCM Control Delay (s)	8.3	-	22.2	11	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0.2	-	-

Intersection

Int Delay, s/veh 1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	42	554	30	50	351
Future Vol, veh/h	26	42	554	30	50	351
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	46	602	33	54	382

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1109	619	0
Stage 1	619	-	-
Stage 2	490	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	232	489	-
Stage 1	537	-	-
Stage 2	616	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	215	489	-
Mov Cap-2 Maneuver	215	-	-
Stage 1	537	-	-
Stage 2	572	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.1	0	1.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	329	948
HCM Lane V/C Ratio	-	-	0.225	0.057
HCM Control Delay (s)	-	-	19.1	9
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.8	0.2

Intersection						
Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	31	553	30	37	340
Future Vol, veh/h	26	31	553	30	37	340
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	34	601	33	40	370
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1068	618	0	0	634	0
Stage 1	618	-	-	-	-	-
Stage 2	450	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	245	489	-	-	949	-
Stage 1	538	-	-	-	-	-
Stage 2	642	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	232	489	-	-	949	-
Mov Cap-2 Maneuver	232	-	-	-	-	-
Stage 1	538	-	-	-	-	-
Stage 2	608	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	18.7	0		0.9		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	325	949	-	
HCM Lane V/C Ratio	-	-	0.191	0.042	-	
HCM Control Delay (s)	-	-	18.7	9	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	0.7	0.1	-	

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	14	569	26	19	347
Future Vol, veh/h	19	14	569	26	19	347
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	15	618	28	21	377

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1051	632	0
Stage 1	632	-	-
Stage 2	419	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	251	480	-
Stage 1	530	-	-
Stage 2	664	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	244	480	-
Mov Cap-2 Maneuver	244	-	-
Stage 1	530	-	-
Stage 2	645	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.2	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	308	939
HCM Lane V/C Ratio	-	-	0.116	0.022
HCM Control Delay (s)	-	-	18.2	8.9
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	3	592	3	4	362
Future Vol, veh/h	1	3	592	3	4	362
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	3	643	3	4	393
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1046	645	0	0	646	0
Stage 1	645	-	-	-	-	-
Stage 2	401	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	253	472	-	-	939	-
Stage 1	522	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	252	472	-	-	939	-
Mov Cap-2 Maneuver	252	-	-	-	-	-
Stage 1	522	-	-	-	-	-
Stage 2	673	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	14.4	0		0.1		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 387		939	-	
HCM Lane V/C Ratio	-	- 0.011		0.005	-	
HCM Control Delay (s)	-	- 14.4		8.9	0	
HCM Lane LOS	-	- B		A	A	
HCM 95th %tile Q(veh)	-	- 0		0	-	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	6	285	12	68	435	528	12	62	40	302	58	5
Future Volume (vph)	6	285	12	68	435	528	12	62	40	302	58	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	160		0	115		0	125		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			60			20			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.917			0.944			0.985	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3518	0	1770	3245	0	1770	1758	0	1770	1835	0
Flt Permitted	0.142			0.377			0.694			0.580		
Satd. Flow (perm)	265	3518	0	702	3245	0	1293	1758	0	1080	1835	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			324			31			7	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		529			473			218			343	
Travel Time (s)		10.3			9.2			5.0			7.8	
Peak Hour Factor	0.50	0.65	0.62	0.85	0.90	0.88	0.62	0.78	0.85	0.84	0.66	0.50
Adj. Flow (vph)	12	438	19	80	483	600	19	79	47	360	88	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	457	0	80	1083	0	19	126	0	360	98	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			22			12			12	
Link Offset(ft)		0			-5			15			-5	
Crosswalk Width(ft)		30			40			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		

Build 2027 PM
7: Scenic Dr/Universe Blvd & Rainbow Blvd

Lanes, Volumes, Timings
04/14/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	3.0	16.0		3.0	16.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	9.5	23.5		9.5	23.5		9.5	36.5		9.5	36.5	
Total Split (s)	16.0	24.0		16.0	24.0		16.0	24.0		24.0	24.0	
Total Split (%)	18.2%	27.3%		18.2%	27.3%		18.2%	27.3%		27.3%	27.3%	
Maximum Green (s)	12.5	18.5		12.5	18.5		12.5	18.5		20.5	18.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	1.5		0.5	1.5		0.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	5.5		3.5	5.5		3.5	5.5		3.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		1.5	4.0		1.5	4.0	
Recall Mode	None	Min		None	Min		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		9.0			9.0			24.0			24.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	31.8	26.1		36.5	32.8		30.4	23.9		44.5	39.1	
Actuated g/C Ratio	0.36	0.30		0.41	0.37		0.35	0.27		0.51	0.44	
v/c Ratio	0.07	0.44		0.22	0.77		0.04	0.25		0.54	0.12	
Control Delay	16.3	27.4		17.4	21.9		12.8	22.0		17.0	15.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.3	27.4		17.4	21.9		12.8	22.0		17.0	15.2	
LOS	B	C		B	C		B	C		B	B	
Approach Delay		27.1			21.6			20.8			16.6	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)	4	108		26	187		5	41		118	26	
Queue Length 95th (ft)	8	110		51	#355		11	77		167	45	
Internal Link Dist (ft)		449			393			138			263	
Turn Bay Length (ft)	140			160			115			125		
Base Capacity (vph)	323	1046		442	1411		631	499		706	818	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.04	0.44		0.18	0.77		0.03	0.25		0.51	0.12	

Intersection Summary

Area Type: Other

Cycle Length: 88

Actuated Cycle Length: 88

Offset: 48 (55%), Referenced to phase 4:NETL and 8:SWTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 21.7

Intersection LOS: C

Intersection Capacity Utilization 68.2%

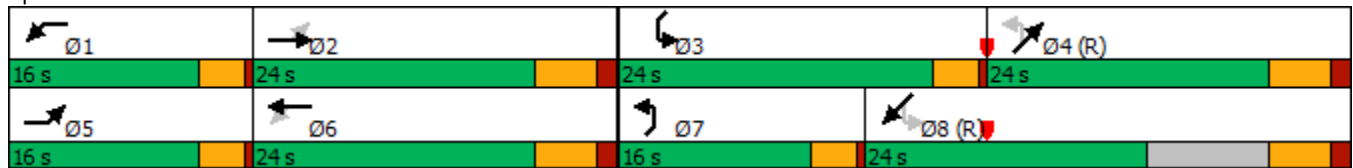
ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 7: Scenic Dr/Universe Blvd & Rainbow Blvd



Intersection						
Int Delay, s/veh	4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	28	52	21	0	47	0
Future Vol, veh/h	28	52	21	0	47	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	57	23	0	51	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	87	0	105	59
Stage 1	-	-	-	-	59	-
Stage 2	-	-	-	-	46	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1509	-	893	1007
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	976	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1509	-	880	1007
Mov Cap-2 Maneuver	-	-	-	-	880	-
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	961	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	7.4		9.3		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	880	-	-	1509	-	
HCM Lane V/C Ratio	0.058	-	-	0.015	-	
HCM Control Delay (s)	9.3	-	-	7.4	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.2	-	-	0	-	

Intersection						
Int Delay, s/veh	2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	14	14	0	10	11	0
Future Vol, veh/h	14	14	0	10	11	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	15	0	11	12	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	30	0	34	23
Stage 1	-	-	-	-	23	-
Stage 2	-	-	-	-	11	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1583	-	979	1054
Stage 1	-	-	-	-	1000	-
Stage 2	-	-	-	-	1012	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1583	-	979	1054
Mov Cap-2 Maneuver	-	-	-	-	979	-
Stage 1	-	-	-	-	1000	-
Stage 2	-	-	-	-	1012	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		8.7		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	979	-	-	1583	-	
HCM Lane V/C Ratio	0.012	-	-	-	-	
HCM Control Delay (s)	8.7	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Intersection

Int Delay, s/veh 3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	14	0	0	10	0
Future Vol, veh/h	0	14	0	0	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	15	0	0	11	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	15
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1603
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1603
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1011	-	-	1603	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection

Int Delay, s/veh 7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	0	0	0	0	4
Future Vol, veh/h	7	0	0	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	0	0	0	0	4

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1	0	0 17 1
Stage 1	-	-	- 1 -
Stage 2	-	-	- 16 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1622	-	- 1001 1084
Stage 1	-	-	- 1022 -
Stage 2	-	-	- 1007 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1622	-	- 996 1084
Mov Cap-2 Maneuver	-	-	- 996 -
Stage 1	-	-	- 1017 -
Stage 2	-	-	- 1007 -

Approach	EB	WB	SB
HCM Control Delay, s	7.2	0	8.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1622	-	-	-	1084
HCM Lane V/C Ratio	0.005	-	-	-	0.004
HCM Control Delay (s)	7.2	0	-	-	8.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

APPENDIX N

Horizon 2033 – No Build Synchro Reports

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	229	538	80	118	244	187	14	285	186	401	642	347
Future Volume (vph)	229	538	80	118	244	187	14	285	186	401	642	347
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		120	140		0	130		20	495		255
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			90			65			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.937				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1745	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.148			0.170			0.100			0.344		
Satd. Flow (perm)	276	1863	1583	317	1745	0	186	1863	1583	641	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			124		30				164			296
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		207			542			281			722	
Travel Time (s)		4.7			10.6			5.5			14.1	
Peak Hour Factor	0.84	0.82	0.79	0.61	0.69	0.73	0.45	0.79	0.59	0.87	0.78	0.88
Adj. Flow (vph)	273	656	101	193	354	256	31	361	315	461	823	394
Shared Lane Traffic (%)												
Lane Group Flow (vph)	273	656	101	193	610	0	31	361	315	461	823	394
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			19	
Link Offset(ft)		0			5			0			-10	
Crosswalk Width(ft)		40			16			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	3.0	20.0	20.0	3.0	20.0		3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	9.5	34.5	34.5	9.5	25.5		9.5	23.0	23.0	9.5	23.0	23.0
Total Split (s)	17.0	32.0	32.0	13.0	29.0		13.0	45.0	45.0	19.0	51.0	51.0
Total Split (%)	15.5%	29.1%	29.1%	11.8%	26.4%		11.8%	40.9%	40.9%	17.3%	46.4%	46.4%
Maximum Green (s)	13.5	26.5	26.5	9.5	23.5		9.5	40.0	40.0	15.5	46.0	46.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.5	1.5	1.5	0.5	1.5		0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.5	5.5	3.5	5.5		3.5	5.0	5.0	3.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.5	3.0	3.0	1.5	3.0		1.5	2.0	2.0	1.5	2.0	2.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		22.0	22.0		12.0			7.0	7.0		9.0	9.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effect Green (s)	42.5	27.5	27.5	35.0	23.5		46.4	40.0	40.0	60.5	53.7	53.7
Actuated g/C Ratio	0.39	0.25	0.25	0.32	0.21		0.42	0.36	0.36	0.55	0.49	0.49
v/c Ratio	0.94	1.41	0.21	0.86	1.54		0.21	0.53	0.46	0.90	0.91	0.43
Control Delay	68.8	229.4	4.6	59.1	286.0		15.8	31.2	14.8	40.1	42.1	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.8	229.4	4.6	59.1	286.0		15.8	31.2	14.8	40.1	42.1	6.6
LOS	E	F	A	E	F		B	C	B	D	D	A
Approach Delay		164.8			231.5			23.2			33.2	
Approach LOS		F			F			C			C	
Queue Length 50th (ft)	138	~623	0	93	~594		10	199	75	188	546	39
Queue Length 95th (ft)	#263	#741	17	95	#551		11	246	58	#324	#615	102
Internal Link Dist (ft)		127			462			201			642	
Turn Bay Length (ft)			120	140			130		20	495		255
Base Capacity (vph)	289	466	489	226	396		223	677	680	511	909	924
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.94	1.41	0.21	0.85	1.54		0.14	0.53	0.46	0.90	0.91	0.43

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.54

Intersection Signal Delay: 101.4

Intersection LOS: F

Intersection Capacity Utilization 89.6%

ICU Level of Service E

Analysis Period (min) 15

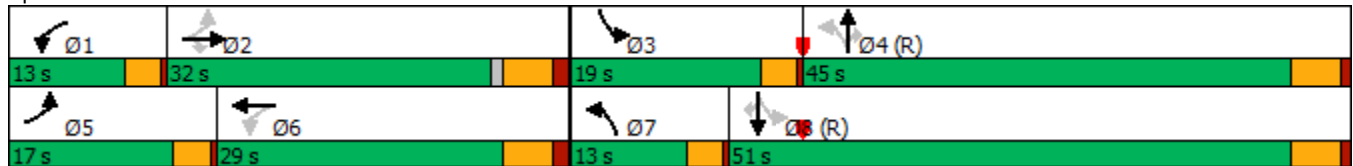
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Universe Blvd & Paseo Del Norte Blvd



Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	35	75	225	784	175
Future Vol, veh/h	16	35	75	225	784	175
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	200	-	-	190
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	39	45	49	92	92	47
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	78	153	245	852	372
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1403	852	1224	0	-	0
Stage 1	852	-	-	-	-	-
Stage 2	551	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	154	359	570	-	-	-
Stage 1	418	-	-	-	-	-
Stage 2	577	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	113	359	570	-	-	-
Mov Cap-2 Maneuver	113	-	-	-	-	-
Stage 1	306	-	-	-	-	-
Stage 2	577	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	30.3	5.2		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	570	-	113	359	-	-
HCM Lane V/C Ratio	0.269	-	0.363	0.217	-	-
HCM Control Delay (s)	13.6	-	54	17.8	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	1.1	-	1.5	0.8	-	-

Intersection

Int Delay, s/veh 0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	299	0	0	819
Future Vol, veh/h	0	0	299	0	0	819
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	325	0	0	890

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1215	325	0
Stage 1	325	-	-
Stage 2	890	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	200	716	-
Stage 1	732	-	-
Stage 2	401	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	200	716	-
Mov Cap-2 Maneuver	200	-	-
Stage 1	732	-	-
Stage 2	401	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1235
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	299	0	0	819
Future Vol, veh/h	0	0	299	0	0	819
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	325	0	0	890

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1215	325	0	0	325
Stage 1	325	-	-	-	-
Stage 2	890	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	200	716	-	-	1235
Stage 1	732	-	-	-	-
Stage 2	401	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	200	716	-	-	1235
Mov Cap-2 Maneuver	200	-	-	-	-
Stage 1	732	-	-	-	-
Stage 2	401	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1235
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	299	0	0	819
Future Vol, veh/h	0	0	299	0	0	819
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	325	0	0	890

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1215	325	0
Stage 1	325	-	-
Stage 2	890	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	200	716	-
Stage 1	732	-	-
Stage 2	401	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	200	716	-
Mov Cap-2 Maneuver	200	-	-
Stage 1	732	-	-
Stage 2	401	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1235
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	299	0	0	819
Future Vol, veh/h	0	0	299	0	0	819
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	325	0	0	890

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1215	325	0
Stage 1	325	-	-
Stage 2	890	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	200	716	-
Stage 1	732	-	-
Stage 2	401	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	200	716	-
Mov Cap-2 Maneuver	200	-	-
Stage 1	732	-	-
Stage 2	401	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1235
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	3	609	20	14	488	239	75	57	66	758	39	22
Future Volume (vph)	3	609	20	14	488	239	75	57	66	758	39	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	160		0	115		0	125		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			60			20			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.959			0.921			0.925	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3394	0	1770	1716	0	1770	1723	0
Flt Permitted	0.122			0.170			0.690			0.421		
Satd. Flow (perm)	227	3514	0	317	3394	0	1285	1716	0	784	1723	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			57			50			49	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		529			473			218			343	
Travel Time (s)		10.3			9.2			5.0			7.8	
Peak Hour Factor	0.50	0.78	0.50	0.50	0.67	0.86	0.49	0.71	0.73	0.87	0.75	0.42
Adj. Flow (vph)	6	781	40	28	728	278	153	80	90	871	52	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	821	0	28	1006	0	153	170	0	871	104	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			22			12			12	
Link Offset(ft)		0			-5			15			-5	
Crosswalk Width(ft)		30			40			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		

No Build 2033 AM
7: Scenic Dr/Universe Blvd & Rainbow Blvd

Lanes, Volumes, Timings
04/14/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	3.0	16.0		3.0	16.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	9.5	23.5		9.5	23.5		9.5	36.5		9.5	36.5	
Total Split (s)	16.0	36.0		16.0	34.0		16.0	24.0		24.0	24.0	
Total Split (%)	16.0%	36.0%		16.0%	34.0%		16.0%	24.0%		24.0%	24.0%	
Maximum Green (s)	12.5	30.5		12.5	28.5		12.5	18.5		20.5	18.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	1.5		0.5	1.5		0.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	5.5		3.5	5.5		3.5	5.5		3.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		1.5	4.0		1.5	4.0	
Recall Mode	None	Min		None	Min		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		9.0			9.0			24.0			24.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	36.6	31.9		38.8	35.6		29.1	18.5		53.7	39.7	
Actuated g/C Ratio	0.37	0.32		0.39	0.36		0.29	0.18		0.54	0.40	
v/c Ratio	0.04	0.73		0.14	0.81		0.37	0.47		1.22	0.15	
Control Delay	16.0	34.2		17.9	32.9		18.9	30.4		133.5	14.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.0	34.2		17.9	32.9		18.9	30.4		133.5	14.2	
LOS	B	C		B	C		B	C		F	B	
Approach Delay		34.1			32.5			24.9			120.8	
Approach LOS		C			C			C			F	
Queue Length 50th (ft)	2	256		11	282		46	68		~550	21	
Queue Length 95th (ft)	5	236		13	226		50	95		#863	53	
Internal Link Dist (ft)		449			393			138			263	
Turn Bay Length (ft)	140			160			115			125		
Base Capacity (vph)	281	1148		306	1251		484	358		714	712	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.02	0.72		0.09	0.80		0.32	0.47		1.22	0.15	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 60 (60%), Referenced to phase 4:NETL and 8:SWTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.22

Intersection Signal Delay: 59.4

Intersection LOS: E

Intersection Capacity Utilization 82.7%

ICU Level of Service E

Analysis Period (min) 15

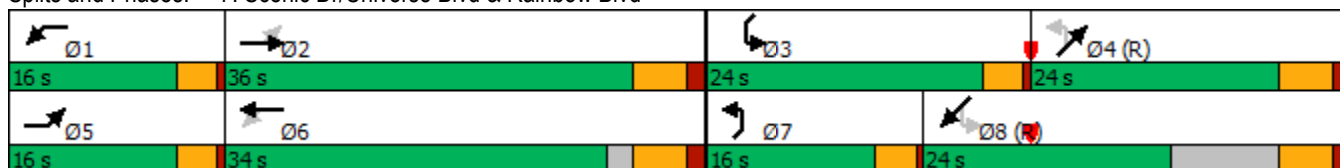
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 7: Scenic Dr/Universe Blvd & Rainbow Blvd



Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		0	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1622	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		0	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1622	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection

Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	4.12	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	2.218	-
Pot Cap-1 Maneuver	-	1622	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1622	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1622	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1	0	0
Stage 1	-	-	1
Stage 2	-	-	0
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1622	-	1022
Stage 1	-	-	1022
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1622	-	1022
Mov Cap-2 Maneuver	-	-	1022
Stage 1	-	-	1022
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	308	375	8	200	558	453	10	500	141	218	431	379
Future Volume (vph)	308	375	8	200	558	453	10	500	141	218	431	379
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		120	140		0	130		20	495		255
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			90			65			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.934				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1740	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.099			0.272			0.232			0.119		
Satd. Flow (perm)	184	1863	1583	507	1740	0	432	1863	1583	222	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			89		40				94			371
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		207			542			281			722	
Travel Time (s)		4.7			10.6			5.5			14.1	
Peak Hour Factor	0.73	0.81	0.62	0.80	0.91	0.95	0.75	0.85	0.81	0.79	0.81	0.95
Adj. Flow (vph)	422	463	13	250	613	477	13	588	174	276	532	399
Shared Lane Traffic (%)												
Lane Group Flow (vph)	422	463	13	250	1090	0	13	588	174	276	532	399
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			19	
Link Offset(ft)		0			5			0			-10	
Crosswalk Width(ft)		40			16			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	3.0	20.0	20.0	3.0	20.0		3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	9.5	34.5	34.5	9.5	25.5		9.5	23.0	23.0	9.5	23.0	23.0
Total Split (s)	15.0	45.0	45.0	15.0	45.0		15.0	35.0	35.0	15.0	35.0	35.0
Total Split (%)	13.6%	40.9%	40.9%	13.6%	40.9%		13.6%	31.8%	31.8%	13.6%	31.8%	31.8%
Maximum Green (s)	11.5	39.5	39.5	11.5	39.5		11.5	30.0	30.0	11.5	30.0	30.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.5	1.5	1.5	0.5	1.5		0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.5	5.5	3.5	5.5		3.5	5.0	5.0	3.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.5	3.0	3.0	1.5	3.0		1.5	2.0	2.0	1.5	2.0	2.0
Recall Mode	None	Min	Min	None	Min		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		22.0	22.0		12.0			7.0	7.0		9.0	9.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effect Green (s)	53.8	40.3	40.3	52.2	39.5		36.0	30.0	30.0	46.5	41.6	41.6
Actuated g/C Ratio	0.49	0.37	0.37	0.47	0.36		0.33	0.27	0.27	0.42	0.38	0.38
v/c Ratio	1.65	0.68	0.02	0.69	1.68		0.07	1.16	0.35	1.08	0.76	0.48
Control Delay	335.2	35.8	0.0	26.3	337.5		19.8	128.3	17.2	107.7	39.2	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	335.2	35.8	0.0	26.3	337.5		19.8	128.3	17.2	107.7	39.2	6.0
LOS	F	D	A	C	F		B	F	B	F	D	A
Approach Delay		176.0			279.5			101.5			43.9	
Approach LOS		F			F			F			D	
Queue Length 50th (ft)	~386	276	0	96	~1119		5	~492	43	~165	305	12
Queue Length 95th (ft)	#426	340	0	129	#1375		14	#648	84	#262	425	88
Internal Link Dist (ft)		127			462			201			642	
Turn Bay Length (ft)			120	140			130		20	495		255
Base Capacity (vph)	255	681	635	376	650		308	508	500	255	704	828
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.65	0.68	0.02	0.66	1.68		0.04	1.16	0.35	1.08	0.76	0.48

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 48 (44%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.68

Intersection Signal Delay: 157.4

Intersection LOS: F

Intersection Capacity Utilization 127.9%

ICU Level of Service H

Analysis Period (min) 15

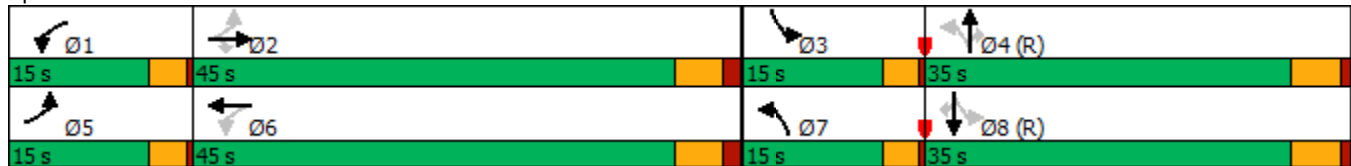
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Universe Blvd & Paseo Del Norte Blvd



Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	6	2	630	376	0
Future Vol, veh/h	3	6	2	630	376	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	200	-	-	190
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	33	25	92	93	47
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	18	8	685	404	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1105	404	404	0	-	0
Stage 1	404	-	-	-	-	-
Stage 2	701	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	233	647	1155	-	-	-
Stage 1	674	-	-	-	-	-
Stage 2	492	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	231	647	1155	-	-	-
Mov Cap-2 Maneuver	231	-	-	-	-	-
Stage 1	669	-	-	-	-	-
Stage 2	492	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	13.3	0.1		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1155	-	231	647	-	-
HCM Lane V/C Ratio	0.007	-	0.026	0.028	-	-
HCM Control Delay (s)	8.1	-	21	10.7	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.1	-	-

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	631	0	0	382
Future Vol, veh/h	0	0	631	0	0	382
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	686	0	0	415

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1101	686	0
Stage 1	686	-	-
Stage 2	415	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	235	447	-
Stage 1	500	-	-
Stage 2	666	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	235	447	-
Mov Cap-2 Maneuver	235	-	-
Stage 1	500	-	-
Stage 2	666	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	908
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	631	0	0	382
Future Vol, veh/h	0	0	631	0	0	382
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	686	0	0	415

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1101	686	0
Stage 1	686	-	-
Stage 2	415	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	235	447	-
Stage 1	500	-	-
Stage 2	666	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	235	447	-
Mov Cap-2 Maneuver	235	-	-
Stage 1	500	-	-
Stage 2	666	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	908
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	631	0	0	382
Future Vol, veh/h	0	0	631	0	0	382
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	686	0	0	415

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1101	686	0
Stage 1	686	-	-
Stage 2	415	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	235	447	-
Stage 1	500	-	-
Stage 2	666	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	235	447	-
Mov Cap-2 Maneuver	235	-	-
Stage 1	500	-	-
Stage 2	666	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	908
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	631	0	0	382
Future Vol, veh/h	0	0	631	0	0	382
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	686	0	0	415

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1101	686	0
Stage 1	686	-	-
Stage 2	415	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	235	447	-
Stage 1	500	-	-
Stage 2	666	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	235	447	-
Mov Cap-2 Maneuver	235	-	-
Stage 1	500	-	-
Stage 2	666	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	908
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	3	338	14	82	516	562	14	67	48	315	64	3
Future Volume (vph)	3	338	14	82	516	562	14	67	48	315	64	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	160		0	115		0	125		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			60			20			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.921			0.941			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3518	0	1770	3260	0	1770	1753	0	1770	1846	0
Flt Permitted	0.144			0.314			0.690			0.563		
Satd. Flow (perm)	268	3518	0	585	3260	0	1285	1753	0	1049	1846	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			290			34			4	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		529			473			218			343	
Travel Time (s)		10.3			9.2			5.0			7.8	
Peak Hour Factor	0.50	0.65	0.62	0.85	0.90	0.88	0.62	0.78	0.85	0.84	0.66	0.50
Adj. Flow (vph)	6	520	23	96	573	639	23	86	56	375	97	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	543	0	96	1212	0	23	142	0	375	103	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			22			12			12	
Link Offset(ft)		0			-5			15			-5	
Crosswalk Width(ft)		30			40			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	3.0	16.0		3.0	16.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	9.5	23.5		9.5	23.5		9.5	36.5		9.5	36.5	
Total Split (s)	16.0	24.0		16.0	24.0		16.0	24.0		24.0	24.0	
Total Split (%)	18.2%	27.3%		18.2%	27.3%		18.2%	27.3%		27.3%	27.3%	
Maximum Green (s)	12.5	18.5		12.5	18.5		12.5	18.5		20.5	18.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	1.5		0.5	1.5		0.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	5.5		3.5	5.5		3.5	5.5		3.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		1.5	4.0		1.5	4.0	
Recall Mode	None	Min		None	Min		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		9.0			9.0			24.0			24.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	31.1	25.6		36.5	32.9		30.1	23.5		44.5	39.0	
Actuated g/C Ratio	0.35	0.29		0.41	0.37		0.34	0.27		0.51	0.44	
v/c Ratio	0.04	0.53		0.29	0.87		0.05	0.29		0.57	0.13	
Control Delay	16.0	29.2		18.4	28.1		12.9	22.7		17.6	15.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.0	29.2		18.4	28.1		12.9	22.7		17.6	15.8	
LOS	B	C		B	C		B	C		B	B	
Approach Delay		29.0			27.4			21.3			17.2	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)	2	134		32	244		6	47		124	29	
Queue Length 95th (ft)	5	131		59	#448		12	86		174	49	
Internal Link Dist (ft)		449			393			138			263	
Turn Bay Length (ft)	140			160			115			125		
Base Capacity (vph)	324	1028		410	1399		623	492		698	820	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.02	0.53		0.23	0.87		0.04	0.29		0.54	0.13	

Intersection Summary

Area Type: Other

Cycle Length: 88

Actuated Cycle Length: 88

Offset: 48 (55%), Referenced to phase 4:NETL and 8:SWTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 25.4

Intersection LOS: C

Intersection Capacity Utilization 72.3%

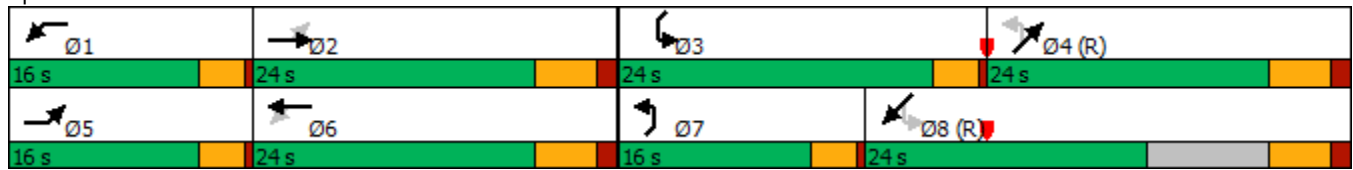
ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 7: Scenic Dr/Universe Blvd & Rainbow Blvd



Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		0		
HCM LOS				A		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1622	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		0	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1622	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection

Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1622
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1622
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1622	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1	0	0
Stage 1	-	-	1
Stage 2	-	-	0
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1622	-	1022
Stage 1	-	-	1022
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1622	-	1022
Mov Cap-2 Maneuver	-	-	1022
Stage 1	-	-	1022
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

APPENDIX O

Horizon 2033 – Build Synchro Reports

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	229	538	87	134	244	187	16	290	227	401	651	347
Future Volume (vph)	229	538	87	134	244	187	16	290	227	401	651	347
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		120	140		0	130		20	495		255
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			90			65			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.937				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1745	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.148			0.170			0.100			0.338		
Satd. Flow (perm)	276	1863	1583	317	1745	0	186	1863	1583	630	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			124		30				164			292
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		207			542			281			722	
Travel Time (s)		4.7			10.6			5.5			14.1	
Peak Hour Factor	0.84	0.82	0.79	0.61	0.69	0.73	0.45	0.79	0.59	0.87	0.78	0.88
Adj. Flow (vph)	273	656	110	220	354	256	36	367	385	461	835	394
Shared Lane Traffic (%)												
Lane Group Flow (vph)	273	656	110	220	610	0	36	367	385	461	835	394
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			19	
Link Offset(ft)		0			5			0			-10	
Crosswalk Width(ft)		40			16			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	3.0	20.0	20.0	3.0	20.0		3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	9.5	34.5	34.5	9.5	25.5		9.5	23.0	23.0	9.5	23.0	23.0
Total Split (s)	17.0	32.0	32.0	13.0	29.0		13.0	45.0	45.0	19.0	51.0	51.0
Total Split (%)	15.5%	29.1%	29.1%	11.8%	26.4%		11.8%	40.9%	40.9%	17.3%	46.4%	46.4%
Maximum Green (s)	13.5	26.5	26.5	9.5	23.5		9.5	40.0	40.0	15.5	46.0	46.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.5	1.5	1.5	0.5	1.5		0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.5	5.5	3.5	5.5		3.5	5.0	5.0	3.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.5	3.0	3.0	1.5	3.0		1.5	2.0	2.0	1.5	2.0	2.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		22.0	22.0		12.0			7.0	7.0		9.0	9.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effect Green (s)	42.5	27.5	27.5	35.0	23.5		46.6	40.0	40.0	60.5	53.5	53.5
Actuated g/C Ratio	0.39	0.25	0.25	0.32	0.21		0.42	0.36	0.36	0.55	0.49	0.49
v/c Ratio	0.94	1.41	0.23	0.97	1.54		0.24	0.54	0.57	0.91	0.92	0.43
Control Delay	68.8	230.4	5.7	82.5	286.0		16.4	31.4	19.2	41.2	44.3	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.8	230.4	5.7	82.5	286.0		16.4	31.4	19.2	41.2	44.3	6.8
LOS	E	F	A	F	F		B	C	B	D	D	A
Approach Delay		164.2			232.1			24.8			34.7	
Approach LOS		F			F			C			C	
Queue Length 50th (ft)	138	~623	0	107	~594		11	203	121	188	563	41
Queue Length 95th (ft)	#263	#741	22	107	#551		13	250	88	#329	#657	105
Internal Link Dist (ft)		127			462			201			642	
Turn Bay Length (ft)			120	140			130		20	495		255
Base Capacity (vph)	289	465	488	226	396		223	677	680	507	906	920
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.94	1.41	0.23	0.97	1.54		0.16	0.54	0.57	0.91	0.92	0.43

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.54

Intersection Signal Delay: 101.5

Intersection LOS: F

Intersection Capacity Utilization 90.0%

ICU Level of Service E

Analysis Period (min) 15

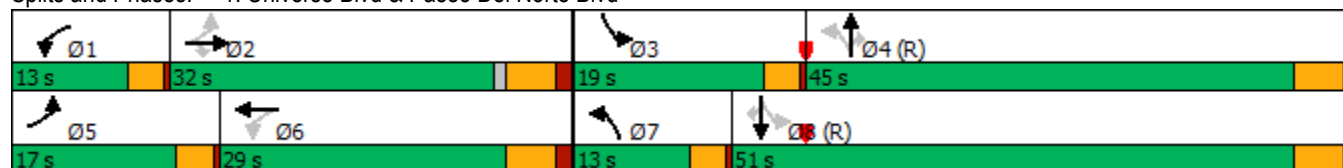
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Universe Blvd & Paseo Del Norte Blvd



Intersection						
Int Delay, s/veh	3.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	39	81	291	823	175
Future Vol, veh/h	16	39	81	291	823	175
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	200	-	-	190
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	39	45	49	92	92	47
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	87	165	316	895	372
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1541	895	1267	0	-	0
Stage 1	895	-	-	-	-	-
Stage 2	646	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	127	339	548	-	-	-
Stage 1	399	-	-	-	-	-
Stage 2	522	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	89	339	548	-	-	-
Mov Cap-2 Maneuver	89	-	-	-	-	-
Stage 1	279	-	-	-	-	-
Stage 2	522	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	37.5	4.9		0		
HCM LOS	E					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	548	-	89	339	-	-
HCM Lane V/C Ratio	0.302	-	0.461	0.256	-	-
HCM Control Delay (s)	14.4	-	76.2	19.2	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	1.3	-	1.9	1	-	-

Intersection						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	34	337	19	28	834
Future Vol, veh/h	15	34	337	19	28	834
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	37	366	21	30	907

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1344	377	0	0	387
Stage 1	377	-	-	-	-
Stage 2	967	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	167	670	-	-	1171
Stage 1	694	-	-	-	-
Stage 2	369	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	158	670	-	-	1171
Mov Cap-2 Maneuver	158	-	-	-	-
Stage 1	694	-	-	-	-
Stage 2	350	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.7	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	336	1171
HCM Lane V/C Ratio	-	-	0.159	0.026
HCM Control Delay (s)	-	-	17.7	8.2
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	23	333	18	21	828
Future Vol, veh/h	19	23	333	18	21	828
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	25	362	20	23	900
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1318	372	0	0	382	0
Stage 1	372	-	-	-	-	-
Stage 2	946	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	173	674	-	-	1176	-
Stage 1	697	-	-	-	-	-
Stage 2	377	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	166	674	-	-	1176	-
Mov Cap-2 Maneuver	166	-	-	-	-	-
Stage 1	697	-	-	-	-	-
Stage 2	362	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	20.2	0		0.2		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	283	1176	-	
HCM Lane V/C Ratio	-	-	0.161	0.019	-	
HCM Control Delay (s)	-	-	20.2	8.1	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-	

Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	26	325	11	8	839
Future Vol, veh/h	30	26	325	11	8	839
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	28	353	12	9	912
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1289	359	0	0	365	0
Stage 1	359	-	-	-	-	-
Stage 2	930	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	181	685	-	-	1194	-
Stage 1	707	-	-	-	-	-
Stage 2	384	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	178	685	-	-	1194	-
Mov Cap-2 Maneuver	178	-	-	-	-	-
Stage 1	707	-	-	-	-	-
Stage 2	378	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	22.1	0	0.1			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	271	1194	-	
HCM Lane V/C Ratio	-	-	0.225	0.007	-	
HCM Control Delay (s)	-	-	22.1	8	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	0.8	0	-	

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	5	331	1	2	867
Future Vol, veh/h	4	5	331	1	2	867
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	5	360	1	2	942

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1307	361	0
Stage 1	361	-	-
Stage 2	946	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	176	684	-
Stage 1	705	-	-
Stage 2	377	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	175	684	-
Mov Cap-2 Maneuver	175	-	-
Stage 1	705	-	-
Stage 2	375	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.5	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	298	1198
HCM Lane V/C Ratio	-	-	0.033	0.002
HCM Control Delay (s)	-	-	17.5	8
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.1	0

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	7	609	20	14	488	264	75	61	66	805	42	24
Future Volume (vph)	7	609	20	14	488	264	75	61	66	805	42	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	160		0	115		0	125		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			60			20			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.956			0.923			0.924	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3383	0	1770	1719	0	1770	1721	0
Flt Permitted	0.115			0.187			0.684			0.417		
Satd. Flow (perm)	214	3514	0	348	3383	0	1274	1719	0	777	1721	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			67			46			50	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		529			473			218			343	
Travel Time (s)		10.3			9.2			5.0			7.8	
Peak Hour Factor	0.50	0.78	0.50	0.50	0.67	0.86	0.49	0.71	0.73	0.87	0.75	0.42
Adj. Flow (vph)	14	781	40	28	728	307	153	86	90	925	56	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	821	0	28	1035	0	153	176	0	925	113	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			22			12			12	
Link Offset(ft)		0			-5			15			-5	
Crosswalk Width(ft)		30			40			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	3.0	16.0		3.0	16.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	9.5	23.5		9.5	23.5		9.5	36.5		9.5	36.5	
Total Split (s)	16.0	36.0		16.0	34.0		16.0	24.0		24.0	24.0	
Total Split (%)	16.0%	36.0%		16.0%	34.0%		16.0%	24.0%		24.0%	24.0%	
Maximum Green (s)	12.5	30.5		12.5	28.5		12.5	18.5		20.5	18.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	1.5		0.5	1.5		0.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	5.5		3.5	5.5		3.5	5.5		3.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		1.5	4.0		1.5	4.0	
Recall Mode	None	Min		None	Min		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		9.0			9.0			24.0			24.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	39.0	34.1		40.3	36.0		29.3	18.5		51.6	37.3	
Actuated g/C Ratio	0.39	0.34		0.40	0.36		0.29	0.18		0.52	0.37	
v/c Ratio	0.09	0.68		0.13	0.82		0.37	0.50		1.37	0.17	
Control Delay	15.7	31.3		16.4	33.2		19.5	32.2		199.0	15.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.7	31.3		16.4	33.2		19.5	32.2		199.0	15.7	
LOS	B	C		B	C		B	C		F	B	
Approach Delay		31.1			32.8			26.3			179.0	
Approach LOS		C			C			C			F	
Queue Length 50th (ft)	5	252		11	286		47	74		~637	25	
Queue Length 95th (ft)	8	236		13	233		50	101		#940	57	
Internal Link Dist (ft)		449			393			138			263	
Turn Bay Length (ft)	140			160			115			125		
Base Capacity (vph)	283	1210		321	1260		482	355		675	673	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.05	0.68		0.09	0.82		0.32	0.50		1.37	0.17	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 60 (60%), Referenced to phase 4:NETL and 8:SWTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.37

Intersection Signal Delay: 78.2

Intersection LOS: E

Intersection Capacity Utilization 86.3%

ICU Level of Service E

Analysis Period (min) 15

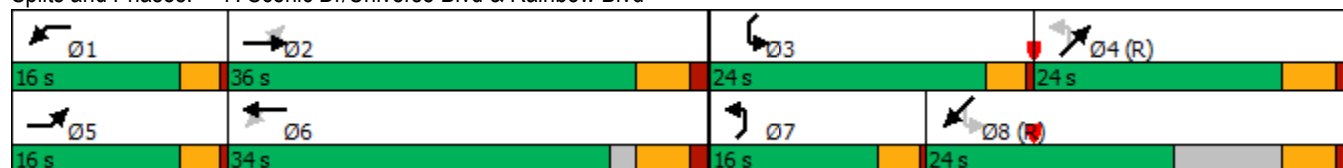
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 7: Scenic Dr/Universe Blvd & Rainbow Blvd



Intersection

Int Delay, s/veh 2.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	14	33	0	30	19	8
Future Vol, veh/h	14	33	0	30	19	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	36	0	33	21	9

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	51
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1555
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1555
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	967	-	-	1555	-
HCM Lane V/C Ratio	0.03	-	-	-	-
HCM Control Delay (s)	8.8	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection

Int Delay, s/veh 3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	7	7	0	15	15	0
Future Vol, veh/h	7	7	0	15	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	8	0	16	16	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	16
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1602
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1602
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	987	-	-	1602	-
HCM Lane V/C Ratio	0.017	-	-	-	-
HCM Control Delay (s)	8.7	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection

Int Delay, s/veh 5.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	7	0	0	15	0
Future Vol, veh/h	0	7	0	0	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	8	0	0	16	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	8
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1612
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1612
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1017	-	-	1612	-
HCM Lane V/C Ratio	0.016	-	-	-	-
HCM Control Delay (s)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection

Int Delay, s/veh 7.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	0	0	0	0	9
Future Vol, veh/h	3	0	0	0	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	0	0	0	0	10

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1	0	7
Stage 1	-	-	1
Stage 2	-	-	6
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1622	-	1014
Stage 1	-	-	1022
Stage 2	-	-	1017
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1622	-	1012
Mov Cap-2 Maneuver	-	-	1012
Stage 1	-	-	1020
Stage 2	-	-	1017

Approach	EB	WB	SB
HCM Control Delay, s	7.2	0	8.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1622	-	-	-	1084
HCM Lane V/C Ratio	0.002	-	-	-	0.009
HCM Control Delay (s)	7.2	0	-	-	8.4
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	308	375	17	236	558	453	19	512	168	218	446	379
Future Volume (vph)	308	375	17	236	558	453	19	512	168	218	446	379
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		120	140		0	130		20	495		255
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			90			65			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.934				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1740	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.101			0.262			0.176			0.119		
Satd. Flow (perm)	188	1863	1583	488	1740	0	328	1863	1583	222	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			89		40				94			358
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		207			542			281			722	
Travel Time (s)		4.7			10.6			5.5			14.1	
Peak Hour Factor	0.73	0.81	0.62	0.80	0.91	0.95	0.75	0.85	0.81	0.79	0.81	0.95
Adj. Flow (vph)	422	463	27	295	613	477	25	602	207	276	551	399
Shared Lane Traffic (%)												
Lane Group Flow (vph)	422	463	27	295	1090	0	25	602	207	276	551	399
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			19	
Link Offset(ft)		0			5			0			-10	
Crosswalk Width(ft)		40			16			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8

Build 2033 PM
1: Universe Blvd & Paseo Del Norte Blvd

Lanes, Volumes, Timings
04/14/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	3.0	20.0	20.0	3.0	20.0		3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	9.5	34.5	34.5	9.5	25.5		9.5	23.0	23.0	9.5	23.0	23.0
Total Split (s)	15.0	45.0	45.0	15.0	45.0		15.0	35.0	35.0	15.0	35.0	35.0
Total Split (%)	13.6%	40.9%	40.9%	13.6%	40.9%		13.6%	31.8%	31.8%	13.6%	31.8%	31.8%
Maximum Green (s)	11.5	39.5	39.5	11.5	39.5		11.5	30.0	30.0	11.5	30.0	30.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.5	1.5	1.5	0.5	1.5		0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.5	5.5	3.5	5.5		3.5	5.0	5.0	3.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.5	3.0	3.0	1.5	3.0		1.5	2.0	2.0	1.5	2.0	2.0
Recall Mode	None	Min	Min	None	Min		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		22.0	22.0		12.0			7.0	7.0		9.0	9.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effect Green (s)	53.2	39.7	39.7	52.8	39.5		36.5	30.0	30.0	46.5	39.6	39.6
Actuated g/C Ratio	0.48	0.36	0.36	0.48	0.36		0.33	0.27	0.27	0.42	0.36	0.36
v/c Ratio	1.65	0.69	0.04	0.81	1.68		0.14	1.19	0.41	1.08	0.82	0.50
Control Delay	334.6	36.4	0.1	35.5	337.5		21.0	138.4	20.3	107.7	45.0	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	334.6	36.4	0.1	35.5	337.5		21.0	138.4	20.3	107.7	45.0	6.9
LOS	F	D	A	D	F		C	F	C	F	D	A
Approach Delay		173.3			273.2			105.6			46.7	
Approach LOS		F			F			F			D	
Queue Length 50th (ft)	~383	276	0	117	~1119		10	~513	63	~165	366	20
Queue Length 95th (ft)	#424	340	0	152	#1375		22	#669	109	#262	#482	100
Internal Link Dist (ft)		127			462			201			642	
Turn Bay Length (ft)			120	140			130		20	495		255
Base Capacity (vph)	255	671	628	369	650		278	508	500	255	670	799
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.65	0.69	0.04	0.80	1.68		0.09	1.19	0.41	1.08	0.82	0.50

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 48 (44%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.68

Intersection Signal Delay: 156.5

Intersection LOS: F

Intersection Capacity Utilization 128.5%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Universe Blvd & Paseo Del Norte Blvd

 Ø1	 Ø2	 Ø3	 Ø4 (R)
15 s	45 s	15 s	35 s
 Ø5	 Ø6	 Ø7	 Ø8 (R)
15 s	45 s	15 s	35 s

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	12	10	690	452	0
Future Vol, veh/h	3	12	10	690	452	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	200	-	-	190
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	33	25	92	93	47
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	36	40	750	486	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1316	486	486	0	-	0
Stage 1	486	-	-	-	-	-
Stage 2	830	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	174	581	1077	-	-	-
Stage 1	618	-	-	-	-	-
Stage 2	428	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	168	581	1077	-	-	-
Mov Cap-2 Maneuver	168	-	-	-	-	-
Stage 1	595	-	-	-	-	-
Stage 2	428	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	13.8	0.4		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1077	-	168	581	-	-
HCM Lane V/C Ratio	0.037	-	0.036	0.063	-	-
HCM Control Delay (s)	8.5	-	27.2	11.6	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0.2	-	-

Intersection						
Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	42	657	30	50	414
Future Vol, veh/h	26	42	657	30	50	414
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	46	714	33	54	450
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1289	731	0	0	747	0
Stage 1	731	-	-	-	-	-
Stage 2	558	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	181	422	-	-	861	-
Stage 1	476	-	-	-	-	-
Stage 2	573	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	166	422	-	-	861	-
Mov Cap-2 Maneuver	166	-	-	-	-	-
Stage 1	476	-	-	-	-	-
Stage 2	525	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	23.8	0	1			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	265	861	-	
HCM Lane V/C Ratio	-	-	0.279	0.063	-	
HCM Control Delay (s)	-	-	23.8	9.5	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	1.1	0.2	-	

Intersection						
Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	31	656	30	37	403
Future Vol, veh/h	26	31	656	30	37	403
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	34	713	33	40	438
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1248	730	0	0	746	0
Stage 1	730	-	-	-	-	-
Stage 2	518	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	191	422	-	-	862	-
Stage 1	477	-	-	-	-	-
Stage 2	598	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	179	422	-	-	862	-
Mov Cap-2 Maneuver	179	-	-	-	-	-
Stage 1	477	-	-	-	-	-
Stage 2	562	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	23	0		0.8		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	261	862	-	
HCM Lane V/C Ratio	-	-	0.237	0.047	-	
HCM Control Delay (s)	-	-	23	9.4	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	0.9	0.1	-	

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	14	672	26	19	410
Future Vol, veh/h	19	14	672	26	19	410
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	15	730	28	21	446

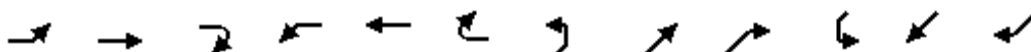
Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1232	744	0	0	758
Stage 1	744	-	-	-	-
Stage 2	488	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	196	415	-	-	853
Stage 1	470	-	-	-	-
Stage 2	617	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	190	415	-	-	853
Mov Cap-2 Maneuver	190	-	-	-	-
Stage 1	470	-	-	-	-
Stage 2	597	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	247	853
HCM Lane V/C Ratio	-	-	0.145	0.024
HCM Control Delay (s)	-	-	22	9.3
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	3	695	3	4	425
Future Vol, veh/h	1	3	695	3	4	425
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	3	755	3	4	462
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1227	757	0	0	758	0
Stage 1	757	-	-	-	-	-
Stage 2	470	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	197	408	-	-	853	-
Stage 1	463	-	-	-	-	-
Stage 2	629	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	196	408	-	-	853	-
Mov Cap-2 Maneuver	196	-	-	-	-	-
Stage 1	463	-	-	-	-	-
Stage 2	625	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	16.4	0		0.1		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	321	853	-	
HCM Lane V/C Ratio	-	-	0.014	0.005	-	
HCM Control Delay (s)	-	-	16.4	9.2	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	6	338	14	82	516	620	14	73	48	353	68	5
Future Volume (vph)	6	338	14	82	516	620	14	73	48	353	68	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	160		0	115		0	125		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			60			20			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.917			0.944			0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3518	0	1770	3245	0	1770	1758	0	1770	1839	0
Flt Permitted	0.144			0.314			0.684			0.538		
Satd. Flow (perm)	268	3518	0	585	3245	0	1274	1758	0	1002	1839	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			320			31			6	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		529			473			218			343	
Travel Time (s)		10.3			9.2			5.0			7.8	
Peak Hour Factor	0.50	0.65	0.62	0.85	0.90	0.88	0.62	0.78	0.85	0.84	0.66	0.50
Adj. Flow (vph)	12	520	23	96	573	705	23	94	56	420	103	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	543	0	96	1278	0	23	150	0	420	113	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			22			12			12	
Link Offset(ft)		0			-5			15			-5	
Crosswalk Width(ft)		30			40			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	3.0	16.0		3.0	16.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	9.5	23.5		9.5	23.5		9.5	36.5		9.5	36.5	
Total Split (s)	16.0	24.0		16.0	24.0		16.0	24.0		24.0	24.0	
Total Split (%)	18.2%	27.3%		18.2%	27.3%		18.2%	27.3%		27.3%	27.3%	
Maximum Green (s)	12.5	18.5		12.5	18.5		12.5	18.5		20.5	18.5	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	1.5		0.5	1.5		0.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	5.5		3.5	5.5		3.5	5.5		3.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		1.5	4.0		1.5	4.0	
Recall Mode	None	Min		None	Min		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		9.0			9.0			24.0			24.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	31.2	25.6		36.5	32.8		28.7	22.1		44.5	39.0	
Actuated g/C Ratio	0.35	0.29		0.41	0.37		0.33	0.25		0.51	0.44	
v/c Ratio	0.07	0.53		0.29	0.91		0.05	0.32		0.64	0.14	
Control Delay	16.5	29.2		18.4	31.0		13.1	24.8		19.3	15.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.5	29.2		18.4	31.0		13.1	24.8		19.3	15.7	
LOS	B	C		B	C		B	C		B	B	
Approach Delay		28.9			30.2			23.2			18.6	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)	4	134		32	263		6	54		144	31	
Queue Length 95th (ft)	8	131		59	#483		12	93		199	52	
Internal Link Dist (ft)		449			393			138			263	
Turn Bay Length (ft)	140			160			115			125		
Base Capacity (vph)	324	1028		410	1409		600	465		685	818	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.04	0.53		0.23	0.91		0.04	0.32		0.61	0.14	

Intersection Summary

Area Type: Other

Cycle Length: 88

Actuated Cycle Length: 88

Offset: 48 (55%), Referenced to phase 4:NETL and 8:SWTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 27.1

Intersection LOS: C

Intersection Capacity Utilization 79.7%

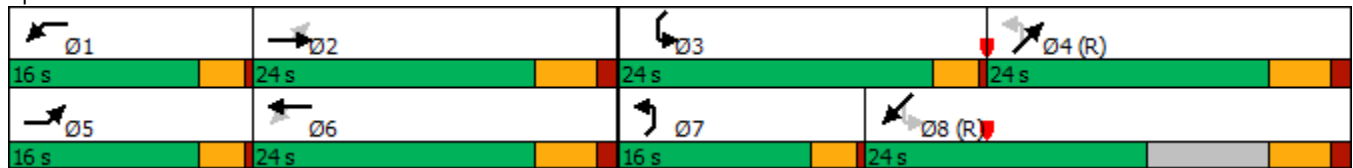
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 7: Scenic Dr/Universe Blvd & Rainbow Blvd



Intersection

Int Delay, s/veh 4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	28	52	21	0	47	0
Future Vol, veh/h	28	52	21	0	47	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	57	23	0	51	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	87
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1509
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1509
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7.4	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	880	-	-	1509	-
HCM Lane V/C Ratio	0.058	-	-	0.015	-
HCM Control Delay (s)	9.3	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection						
Int Delay, s/veh	2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	14	14	0	10	11	0
Future Vol, veh/h	14	14	0	10	11	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	15	0	11	12	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	30	0	34	23
Stage 1	-	-	-	-	23	-
Stage 2	-	-	-	-	11	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1583	-	979	1054
Stage 1	-	-	-	-	1000	-
Stage 2	-	-	-	-	1012	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1583	-	979	1054
Mov Cap-2 Maneuver	-	-	-	-	979	-
Stage 1	-	-	-	-	1000	-
Stage 2	-	-	-	-	1012	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		8.7	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	979	-	-	1583	-	
HCM Lane V/C Ratio	0.012	-	-	-	-	
HCM Control Delay (s)	8.7	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Intersection						
Int Delay, s/veh	3.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	14	0	0	10	0
Future Vol, veh/h	0	14	0	0	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	15	0	0	11	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	15	0	9	8
Stage 1	-	-	-	-	8	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1603	-	1011	1074
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1603	-	1011	1074
Mov Cap-2 Maneuver	-	-	-	-	1011	-
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	1022	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		8.6		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1011	-	-	1603	-	
HCM Lane V/C Ratio	0.011	-	-	-	-	
HCM Control Delay (s)	8.6	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Intersection

Int Delay, s/veh 7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	0	0	0	0	4
Future Vol, veh/h	7	0	0	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	0	0	0	0	4

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1	0	0 17 1
Stage 1	-	-	- 1 -
Stage 2	-	-	- 16 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1622	-	- 1001 1084
Stage 1	-	-	- 1022 -
Stage 2	-	-	- 1007 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1622	-	- 996 1084
Mov Cap-2 Maneuver	-	-	- 996 -
Stage 1	-	-	- 1017 -
Stage 2	-	-	- 1007 -

Approach	EB	WB	SB
HCM Control Delay, s	7.2	0	8.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1622	-	-	-	1084
HCM Lane V/C Ratio	0.005	-	-	-	0.004
HCM Control Delay (s)	7.2	0	-	-	8.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

APPENDIX P

Mitigation 2033 Synchro Reports

Build 2033 AM_Mitigation
1: Universe Blvd & Paseo Del Norte Blvd

Lanes, Volumes, Timings
04/15/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	229	538	87	134	244	187	16	290	227	401	651	347
Future Volume (vph)	229	538	87	134	244	187	16	290	227	401	651	347
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		120	140		0	130		20	495		255
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			90			65			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.937				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1745	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.095			0.104			0.112			0.228		
Satd. Flow (perm)	177	1863	1583	194	1745	0	209	1863	1583	425	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			105		28				138			247
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		207			542			281			722	
Travel Time (s)		4.7			10.6			5.5			14.1	
Peak Hour Factor	0.84	0.82	0.79	0.61	0.69	0.73	0.45	0.79	0.59	0.87	0.78	0.88
Adj. Flow (vph)	273	656	110	220	354	256	36	367	385	461	835	394
Shared Lane Traffic (%)												
Lane Group Flow (vph)	273	656	110	220	610	0	36	367	385	461	835	394
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			19	
Link Offset(ft)		0			5			0			-10	
Crosswalk Width(ft)		40			16			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8

Build 2033 AM_Mitigation
1: Universe Blvd & Paseo Del Norte Blvd

Lanes, Volumes, Timings
04/15/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	3.0	20.0	20.0	3.0	20.0		3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	9.5	34.5	34.5	9.5	25.5		9.5	23.0	23.0	9.5	23.0	23.0
Total Split (s)	17.0	48.0	48.0	13.0	44.0		9.5	40.6	40.6	28.4	59.5	59.5
Total Split (%)	13.1%	36.9%	36.9%	10.0%	33.8%		7.3%	31.2%	31.2%	21.8%	45.8%	45.8%
Maximum Green (s)	13.5	42.5	42.5	9.5	38.5		6.0	35.6	35.6	24.9	54.5	54.5
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.5	1.5	1.5	0.5	1.5		0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.5	5.5	3.5	5.5		3.5	5.0	5.0	3.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.5	3.0	3.0	1.5	3.0		1.5	2.0	2.0	1.5	2.0	2.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		22.0	22.0		12.0			7.0	7.0		9.0	9.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effect Green (s)	57.5	42.5	42.5	50.0	38.5		42.3	35.6	35.6	65.5	58.5	58.5
Actuated g/C Ratio	0.44	0.33	0.33	0.38	0.30		0.33	0.27	0.27	0.50	0.45	0.45
v/c Ratio	1.12	1.08	0.19	1.16	1.14		0.28	0.72	0.72	0.98	1.00	0.47
Control Delay	127.4	100.7	7.1	146.3	122.7		24.5	51.9	35.6	62.7	66.7	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	127.4	100.7	7.1	146.3	122.7		24.5	51.9	35.6	62.7	66.7	11.2
LOS	F	F	A	F	F		C	D	D	E	E	B
Approach Delay		97.8			129.0			42.7			52.7	
Approach LOS		F			F			D			D	
Queue Length 50th (ft)	~211	~615	3	~165	~583		15	281	193	267	~769	80
Queue Length 95th (ft)	#347	#727	32	#151	#510		17	334	139	#455	#797	162
Internal Link Dist (ft)		127			462			201			642	
Turn Bay Length (ft)			120	140			130		20	495		255
Base Capacity (vph)	243	609	588	189	536		141	510	533	471	838	847
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.12	1.08	0.19	1.16	1.14		0.26	0.72	0.72	0.98	1.00	0.47

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.16

Intersection Signal Delay: 76.2

Intersection LOS: E

Intersection Capacity Utilization 90.0%

ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Universe Blvd & Paseo Del Norte Blvd

 Ø1	 Ø2	 Ø3	 Ø4 (R)
13 s	48 s	28.4 s	40.6 s
 Ø5	 Ø6	 Ø7	 Ø8 (R)
17 s	44 s	9.5 s	59.5 s

Intersection						
Int Delay, s/veh	2.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	39	81	291	823	175
Future Vol, veh/h	16	39	81	291	823	175
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	200	-	-	190
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	39	45	49	92	92	47
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	87	165	316	895	372
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1541	895	1267	0	-	0
Stage 1	895	-	-	-	-	-
Stage 2	646	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	127	339	548	-	-	-
Stage 1	399	-	-	-	-	-
Stage 2	522	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	89	339	548	-	-	-
Mov Cap-2 Maneuver	202	-	-	-	-	-
Stage 1	279	-	-	-	-	-
Stage 2	522	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	21.8	4.9		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	548	-	202	339	-	-
HCM Lane V/C Ratio	0.302	-	0.203	0.256	-	-
HCM Control Delay (s)	14.4	-	27.3	19.2	-	-
HCM Lane LOS	B	-	D	C	-	-
HCM 95th %tile Q(veh)	1.3	-	0.7	1	-	-

Build 2033 AM_Mitigation
7: Scenic Dr/Universe Blvd & Rainbow Blvd

Lanes, Volumes, Timings
04/15/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	7	609	20	14	488	264	75	61	66	805	42	24
Future Volume (vph)	7	609	20	14	488	264	75	61	66	805	42	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	160		200	115		0	125		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	50			60			20			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.994	0.850		0.923			0.924	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3370	1441	1770	1719	0	1770	1721	0
Flt Permitted	0.118			0.098			0.684			0.436		
Satd. Flow (perm)	220	3514	0	183	3370	1441	1274	1719	0	812	1721	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			3	211		32			50	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		529			473			218			343	
Travel Time (s)		10.3			9.2			5.0			7.8	
Peak Hour Factor	0.50	0.78	0.50	0.50	0.67	0.86	0.49	0.71	0.73	0.87	0.75	0.42
Adj. Flow (vph)	14	781	40	28	728	307	153	86	90	925	56	57
Shared Lane Traffic (%)						10%						
Lane Group Flow (vph)	14	821	0	28	759	276	153	176	0	925	113	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			22			12			12	
Link Offset(ft)		0			-5			15			-5	
Crosswalk Width(ft)		30			40			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6	4			8		

Build 2033 AM_Mitigation
7: Scenic Dr/Universe Blvd & Rainbow Blvd

Lanes, Volumes, Timings
04/15/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6	6	7	4		3	8	
Switch Phase												
Minimum Initial (s)	3.0	16.0		3.0	16.0	16.0	3.0	8.0		3.0	8.0	
Minimum Split (s)	9.5	23.5		9.5	23.5	23.5	9.5	36.5		9.5	36.5	
Total Split (s)	9.5	45.6		9.6	45.7	45.7	13.2	37.8		57.0	81.6	
Total Split (%)	6.3%	30.4%		6.4%	30.5%	30.5%	8.8%	25.2%		38.0%	54.4%	
Maximum Green (s)	6.0	40.1		6.1	40.2	40.2	9.7	32.3		53.5	76.1	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	1.5		0.5	1.5	1.5	0.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	5.5		3.5	5.5	5.5	3.5	5.5		3.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0	3.0	1.5	4.0		1.5	4.0	
Recall Mode	None	Min		None	Min	Min	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		9.0			9.0	9.0		24.0			24.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effect Green (s)	43.9	38.7		45.2	40.7	40.7	42.7	32.3		96.6	82.7	
Actuated g/C Ratio	0.29	0.26		0.30	0.27	0.27	0.28	0.22		0.64	0.55	
v/c Ratio	0.12	0.90		0.25	0.83	0.51	0.39	0.45		1.03	0.12	
Control Delay	35.3	67.4		39.2	59.7	14.8	24.7	45.6		61.1	10.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	35.3	67.4		39.2	59.7	14.8	24.7	45.6		61.1	10.7	
LOS	D	E		D	E	B	C	D		E	B	
Approach Delay		66.9			47.5			35.9			55.6	
Approach LOS		E			D			D			E	
Queue Length 50th (ft)	9	402		18	351	49	61	123		~818	31	
Queue Length 95th (ft)	14	405		24	321	136	49	147		#1009	50	
Internal Link Dist (ft)		449			393			138			263	
Turn Bay Length (ft)	140			160		200	115			125		
Base Capacity (vph)	126	944		119	951	557	405	395		898	970	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.11	0.87		0.24	0.80	0.50	0.38	0.45		1.03	0.12	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 4:NETL and 8:SWTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.03

Intersection Signal Delay: 53.9

Intersection LOS: D

Intersection Capacity Utilization 81.8%

ICU Level of Service D

Analysis Period (min) 15

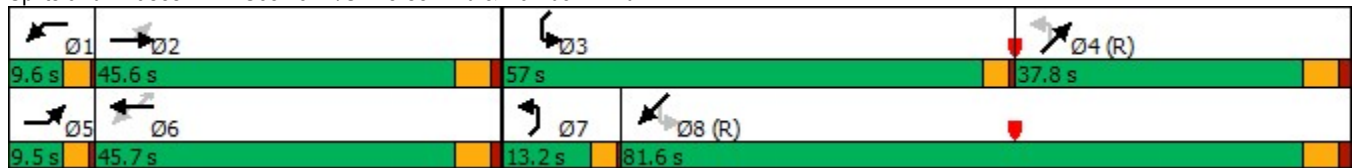
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 7: Scenic Dr/Universe Blvd & Rainbow Blvd



Build 2033 AM_Rosa Parks Extension_Mitigation
7: Scenic Dr/Universe Blvd & Rainbow Blvd

Lanes, Volumes, Timings
10/20/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	7	609	20	14	488	248	75	61	66	773	41	24
Future Volume (vph)	7	609	20	14	488	248	75	61	66	773	41	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	160		0	115		0	125		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			60			20			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.957			0.923			0.924	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3387	0	1770	1719	0	1770	1721	0
Flt Permitted	0.088			0.130			0.685			0.440		
Satd. Flow (perm)	164	3514	0	242	3387	0	1276	1719	0	820	1721	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			38			32			50	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		529			473			218			343	
Travel Time (s)		10.3			9.2			5.0			7.8	
Peak Hour Factor	0.50	0.78	0.50	0.50	0.67	0.86	0.49	0.71	0.73	0.87	0.75	0.42
Adj. Flow (vph)	14	781	40	28	728	288	153	86	90	889	55	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	821	0	28	1016	0	153	176	0	889	112	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			22			12			12	
Link Offset(ft)		0			-5			15			-5	
Crosswalk Width(ft)		30			40			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	3.0	16.0		3.0	16.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	9.5	23.5		9.5	23.5		9.5	36.5		9.5	36.5	
Total Split (s)	9.6	46.0		9.6	46.0		13.2	38.4		56.0	81.2	
Total Split (%)	6.4%	30.7%		6.4%	30.7%		8.8%	25.6%		37.3%	54.1%	
Maximum Green (s)	6.1	40.5		6.1	40.5		9.7	32.9		52.5	75.7	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	1.5		0.5	1.5		0.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	5.5		3.5	5.5		3.5	5.5		3.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		1.5	4.0		1.5	4.0	
Recall Mode	None	Min		None	Min		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		9.0			9.0			24.0			24.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	49.7	44.5		50.9	46.4		43.7	32.9		90.9	76.6	
Actuated g/C Ratio	0.33	0.30		0.34	0.31		0.29	0.22		0.61	0.51	
v/c Ratio	0.13	0.79		0.21	0.95		0.38	0.44		1.07	0.12	
Control Delay	35.0	55.2		36.2	65.3		24.1	45.0		76.2	11.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	35.0	55.2		36.2	65.3		24.1	45.0		76.2	11.2	
LOS	C	E		D	E		C	D		E	B	
Approach Delay		54.9			64.5			35.3			68.9	
Approach LOS		D			E			D			E	
Queue Length 50th (ft)	9	401		18	478		62	122		~745	30	
Queue Length 95th (ft)	14	403		24	410		49	146		#936	49	
Internal Link Dist (ft)		449			393			138			263	
Turn Bay Length (ft)	140			160			115			125		
Base Capacity (vph)	120	1043		144	1074		411	402		829	903	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.12	0.79		0.19	0.95		0.37	0.44		1.07	0.12	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 4:NETL and 8:SWTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.07

Intersection Signal Delay: 60.4

Intersection LOS: E

Intersection Capacity Utilization 84.0%

ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

7: Scenic Dr/Universe Blvd & Rainbow Blvd

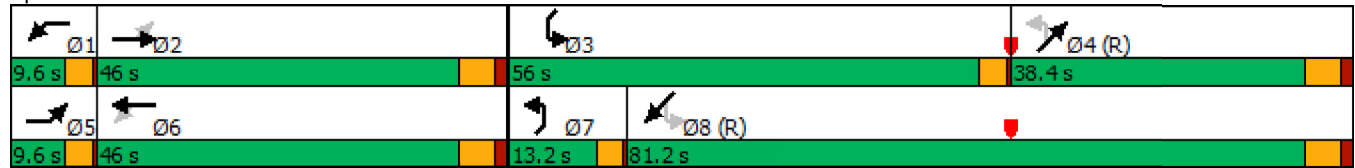
10/20/2022

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 7: Scenic Dr/Universe Blvd & Rainbow Blvd



Build 2033 PM_Mitigation
1: Universe Blvd & Paseo Del Norte Blvd

Lanes, Volumes, Timings
04/15/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	308	375	17	236	558	453	19	512	168	218	446	379
Future Volume (vph)	308	375	17	236	558	453	19	512	168	218	446	379
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		120	140		0	130		20	495		255
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			90			65			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.934				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1740	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.074			0.317			0.125			0.113		
Satd. Flow (perm)	138	1863	1583	590	1740	0	233	1863	1583	210	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			105		36				109			307
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		207			542			281			722	
Travel Time (s)		4.7			10.6			5.5			14.1	
Peak Hour Factor	0.73	0.81	0.62	0.80	0.91	0.95	0.75	0.85	0.81	0.79	0.81	0.95
Adj. Flow (vph)	422	463	27	295	613	477	25	602	207	276	551	399
Shared Lane Traffic (%)												
Lane Group Flow (vph)	422	463	27	295	1090	0	25	602	207	276	551	399
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			19	
Link Offset(ft)		0			5			0			-10	
Crosswalk Width(ft)		40			16			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8

Build 2033 PM_Mitigation
1: Universe Blvd & Paseo Del Norte Blvd

Lanes, Volumes, Timings
04/15/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	3.0	20.0	20.0	3.0	20.0		3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	9.5	34.5	34.5	9.5	25.5		9.5	23.0	23.0	9.5	23.0	23.0
Total Split (s)	20.0	56.1	56.1	21.9	58.0		10.5	37.0	37.0	15.0	41.5	41.5
Total Split (%)	15.4%	43.2%	43.2%	16.8%	44.6%		8.1%	28.5%	28.5%	11.5%	31.9%	31.9%
Maximum Green (s)	16.5	50.6	50.6	18.4	52.5		7.0	32.0	32.0	11.5	36.5	36.5
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.5	1.5	1.5	0.5	1.5		0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.5	5.5	3.5	5.5		3.5	5.0	5.0	3.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.5	3.0	3.0	1.5	3.0		1.5	2.0	2.0	1.5	2.0	2.0
Recall Mode	None	Min	Min	None	Min		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		22.0	22.0		12.0			7.0	7.0		9.0	9.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effect Green (s)	72.2	54.2	54.2	69.3	52.5		38.7	32.0	32.0	48.5	41.4	41.4
Actuated g/C Ratio	0.56	0.42	0.42	0.53	0.40		0.30	0.25	0.25	0.37	0.32	0.32
v/c Ratio	1.49	0.60	0.04	0.66	1.51		0.19	1.31	0.44	1.28	0.93	0.56
Control Delay	268.6	34.0	0.1	22.0	264.3		29.8	195.6	22.3	185.0	67.2	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	268.6	34.0	0.1	22.0	264.3		29.8	195.6	22.3	185.0	67.2	12.6
LOS	F	C	A	C	F		C	F	C	F	E	B
Approach Delay		141.6			212.7			147.6			75.9	
Approach LOS		F			F			F			E	
Queue Length 50th (ft)	~440	300	0	122	~1265		13	~653	67	~241	~466	58
Queue Length 95th (ft)	#475	374	0	153	#1528		28	#810	118	#341	#609	168
Internal Link Dist (ft)		127			462			201			642	
Turn Bay Length (ft)			120	140			130		20	495		255
Base Capacity (vph)	283	777	721	497	724		155	458	471	216	592	713
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.49	0.60	0.04	0.59	1.51		0.16	1.31	0.44	1.28	0.93	0.56

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.51

Intersection Signal Delay: 146.9

Intersection LOS: F

Intersection Capacity Utilization 128.5%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Universe Blvd & Paseo Del Norte Blvd

 Ø1	 Ø2	 Ø3	 Ø4 (R)
21.9 s	56.1 s	15 s	37 s
 Ø5	 Ø6	 Ø7	 Ø8 (R)
20 s	58 s	10.5 s	41.5 s

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	12	10	690	452	0
Future Vol, veh/h	3	12	10	690	452	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	200	-	-	190
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	33	25	92	93	47
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	36	40	750	486	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1316	486	486	0	-	0
Stage 1	486	-	-	-	-	-
Stage 2	830	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	174	581	1077	-	-	-
Stage 1	618	-	-	-	-	-
Stage 2	428	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	168	581	1077	-	-	-
Mov Cap-2 Maneuver	301	-	-	-	-	-
Stage 1	595	-	-	-	-	-
Stage 2	428	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12.4	0.4		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1077	-	301	581	-	-
HCM Lane V/C Ratio	0.037	-	0.02	0.063	-	-
HCM Control Delay (s)	8.5	-	17.2	11.6	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0.2	-	-

Build 2033 PM_Mitigation
7: Scenic Dr/Universe Blvd & Rainbow Blvd

Lanes, Volumes, Timings
04/15/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	6	338	14	82	516	620	14	73	48	353	68	5
Future Volume (vph)	6	338	14	82	516	620	14	73	48	353	68	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	160		200	115		0	125		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	50			60			20			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.947	0.850		0.944			0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3518	0	1770	3211	1441	1770	1758	0	1770	1839	0
Flt Permitted	0.201			0.314			0.684			0.538		
Satd. Flow (perm)	374	3518	0	585	3211	1441	1274	1758	0	1002	1839	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			92	395		31			6	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		529			473			218			343	
Travel Time (s)		10.3			9.2			5.0			7.8	
Peak Hour Factor	0.50	0.65	0.62	0.85	0.90	0.88	0.62	0.78	0.85	0.84	0.66	0.50
Adj. Flow (vph)	12	520	23	96	573	705	23	94	56	420	103	10
Shared Lane Traffic (%)						44%						
Lane Group Flow (vph)	12	543	0	96	883	395	23	150	0	420	113	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			22			12			12	
Link Offset(ft)		0			-5			15			-5	
Crosswalk Width(ft)		30			40			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6	4			8		

Build 2033 PM_Mitigation
7: Scenic Dr/Universe Blvd & Rainbow Blvd

Lanes, Volumes, Timings
04/15/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6	6	7	4		3	8	
Switch Phase												
Minimum Initial (s)	3.0	16.0		3.0	16.0	16.0	3.0	8.0		3.0	8.0	
Minimum Split (s)	9.5	23.5		9.5	23.5	23.5	9.5	36.5		9.5	36.5	
Total Split (s)	16.0	24.0		16.0	24.0	24.0	16.0	24.0		24.0	24.0	
Total Split (%)	18.2%	27.3%		18.2%	27.3%	27.3%	18.2%	27.3%		27.3%	27.3%	
Maximum Green (s)	12.5	18.5		12.5	18.5	18.5	12.5	18.5		20.5	18.5	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	1.5		0.5	1.5	1.5	0.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	5.5		3.5	5.5	5.5	3.5	5.5		3.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0	3.0	1.5	4.0		1.5	4.0	
Recall Mode	None	Min		None	Min	Min	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		9.0			9.0	9.0		24.0			24.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effect Green (s)	31.2	25.6		36.5	32.8	32.8	28.7	22.1		44.5	39.0	
Actuated g/C Ratio	0.35	0.29		0.41	0.37	0.37	0.33	0.25		0.51	0.44	
v/c Ratio	0.06	0.53		0.29	0.70	0.50	0.05	0.32		0.64	0.14	
Control Delay	16.2	29.2		18.4	25.6	5.0	13.1	24.8		19.3	15.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	16.2	29.2		18.4	25.6	5.0	13.1	24.8		19.3	15.7	
LOS	B	C		B	C	A	B	C		B	B	
Approach Delay		28.9			19.2			23.2			18.6	
Approach LOS		C			B			C			B	
Queue Length 50th (ft)	4	134		32	195	0	6	54		144	31	
Queue Length 95th (ft)	8	131		59	#345	64	12	93		199	52	
Internal Link Dist (ft)		449			393			138			263	
Turn Bay Length (ft)	140			160		200	115			125		
Base Capacity (vph)	352	1028		410	1253	784	600	465		685	818	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.03	0.53		0.23	0.70	0.50	0.04	0.32		0.61	0.14	

Intersection Summary

Area Type: Other

Cycle Length: 88

Actuated Cycle Length: 88

Offset: 48 (55%), Referenced to phase 4:NETL and 8:SWTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 21.4

Intersection LOS: C

Intersection Capacity Utilization 66.4%

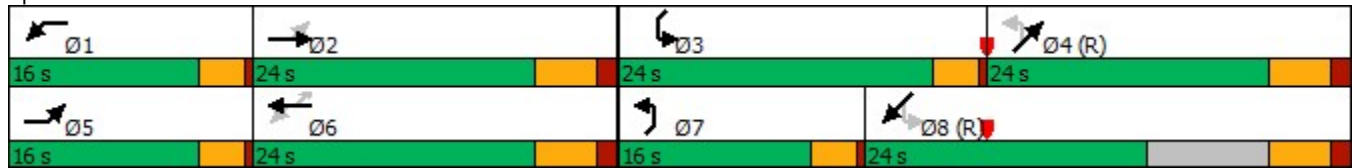
ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 7: Scenic Dr/Universe Blvd & Rainbow Blvd



Build 2033 PM_Rosa Parks Extension_Mitigation
7: Scenic Dr/Universe Blvd & Rainbow Blvd

Lanes, Volumes, Timings
10/20/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	5	338	14	82	516	582	14	74	48	328	70	5
Future Volume (vph)	5	338	14	82	516	582	14	74	48	328	70	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	160		0	115		0	125		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	50			60			20			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.920			0.944			0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3518	0	1770	3256	0	1770	1758	0	1770	1839	0
Flt Permitted	0.129			0.330			0.682			0.586		
Satd. Flow (perm)	240	3518	0	615	3256	0	1270	1758	0	1092	1839	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			336			36			6	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		529			473			218			343	
Travel Time (s)		10.3			9.2			5.0			7.8	
Peak Hour Factor	0.50	0.65	0.62	0.85	0.90	0.88	0.62	0.78	0.85	0.84	0.66	0.50
Adj. Flow (vph)	10	520	23	96	573	661	23	95	56	390	106	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	543	0	96	1234	0	23	151	0	390	116	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			22			12			12	
Link Offset(ft)		0			-5			15			-5	
Crosswalk Width(ft)		30			40			16			30	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	3.0	16.0		3.0	16.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	9.5	23.5		9.5	23.5		9.5	36.5		9.5	36.5	
Total Split (s)	9.5	33.1		9.7	33.3		9.5	36.8		10.4	37.7	
Total Split (%)	10.6%	36.8%		10.8%	37.0%		10.6%	40.9%		11.6%	41.9%	
Maximum Green (s)	6.0	27.6		6.2	27.8		6.0	31.3		6.9	32.2	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	1.5		0.5	1.5		0.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	5.5		3.5	5.5		3.5	5.5		3.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		1.5	4.0		1.5	4.0	
Recall Mode	None	Min		None	Min		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		9.0			9.0			24.0			24.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	34.6	29.0		38.2	34.9		38.0	31.3		43.6	38.8	
Actuated g/C Ratio	0.38	0.32		0.42	0.39		0.42	0.35		0.48	0.43	
v/c Ratio	0.06	0.48		0.29	0.84		0.04	0.24		0.67	0.15	
Control Delay	15.4	26.4		17.6	25.0		12.5	16.9		23.4	17.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.4	26.4		17.6	25.0		12.5	16.9		23.4	17.0	
LOS	B	C		B	C		B	B		C	B	
Approach Delay		26.2			24.5			16.3			21.9	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	3	131		32	235		7	45		140	34	
Queue Length 95th (ft)	7	121		58	#433		13	74		195	56	
Internal Link Dist (ft)		449			393			138			263	
Turn Bay Length (ft)	140			160			115			125		
Base Capacity (vph)	197	1135		340	1469		587	634		586	797	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.05	0.48		0.28	0.84		0.04	0.24		0.67	0.15	
Intersection Summary												
Area Type: Other												
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 0 (0%), Referenced to phase 4:NETL and 8:SWTL, Start of Green												
Natural Cycle: 90												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.84												
Intersection Signal Delay: 23.8 Intersection LOS: C												
Intersection Capacity Utilization 77.1% ICU Level of Service D												
Analysis Period (min) 15												
# 95th percentile volume exceeds capacity, queue may be longer.												

Queue shown is maximum after two cycles.

Splits and Phases: 7: Scenic Dr/Universe Blvd & Rainbow Blvd

 Ø1	 Ø2	 Ø3	 Ø4 (R)
9.7 s	33.1 s	10.4 s	36.8 s
 Ø5	 Ø6	 Ø7	 Ø8 (R)
9.5 s	33.3 s	9.5 s	37.7 s

APPENDIX Q

Intersection Sight Distance Analysis

