CITY OF ALBUQUERQUE

December 7, 2016
Nevin Harwick, P.E.
Harwick Transportation Group, Inc.
1440 Camino Cerrito SE
Albuquerque, NM 87123

Re: APS Far Northwest Education Complex
(Tierra Pintada Blvd. and Arroyo Vista Blvd.)
Traffic Impact Study
Engineer's Stamp dated 10-14-16 (J08-D003)

Dear Mr. Harwick,

The subject Traffic Impact Study received on October 18, 2016 has been reviewed and approved by the Transportation Development Section. All comments have been adequately addressed.

The final Traffic Impact Study shall be valid for a period of three years. Should significant modifications to the approved development proposal occur, the approved study shall be revised to incorporate the changes.

If you have any questions, please feel free to contact me at (505) 924-3991.

Sincerely,

Racquel M. Michel, P.E.
Traffic Engineer, Planning Dept.
Development Review Services

Via: email
C: Applicant, File

PO Box 1293
Albuquerque
New Mexico 87103
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APS Far Northwest Education Complex

Traffic Impact Analysis

October 13, 2016

Traffic Impact Study

Albuquerque Public Schools

Far Northwest Education Complex

Prepared For:

City of Albuquerque

Study Prepared By:

Harwick Transportation Group, Inc.
1440 Camino Cerrito SE
Albuquerque, NM 87123

October 13, 2016

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Acronyms

AASHTO	American Association of State Highway and Transportation Officials
AADT	Annual Average Daily Traffic
AAWDT	Annual Average Weekday Traffic
APS	Albuquerque Public Schools
g/C	Green time per signal Cycle length
HCM	Highway Capacity Manual
HTG	Harwick Transportation Group
ITE	Institute of Transportation Engineers
MRCOG	Mid-Region Council of Governments
mph	Miles per Hour
MTP	Metropolitan Transportation Plan (current document for year 2025)
MUTCD	Manual on Uniform Traffic Control Devices
NMDOT	New Mexico Department of Transportation
pcphpl	Passenger cars per hour per lane
PHF	Peak Hour Factor
v/c	Volume to Capacity ratio
vpd	Vehicles per Day
vph	Vehicles per Hour

1.0 INTRODUCTION

This traffic impact study has been prepared for the proposed Albuquerque Public Schools Far Northwest Education Complex located at Arroyo Vista Blvd and Tierra Pintada Blvd (see the Vicinity Map in Appendix A). At buildout, this development should include a K-8 (elementary and mid school), a high school, an early childhood facility, a bus storage facility for 200 buses and an APS health clinic. The K-8 school will have approximately 590 elementary students and 760 mid-schoolers. The early childhood facility will accommodate up to 400 students and the health clinic will be approximately 4,000 SF.

The high school is anticipated to have a maximum student population of 2,400 students. This school has been included in this report because a high school is still conceptual and may be developed on this property in the future, most likely beyond the time frame of this report. It was included to determine its potential impact upon the roadway network, and may need to be revisited should the development occur beyond 2021.

The purpose of the study is to identify any impacts that the development will have on the surrounding roadway network and to develop mitigation recommendations for those impacts. The study has been conducted in accordance with the City of Albuquerque Traffic Impact Study standards. A scoping meeting was held with City transportation development staff on December 17, 2015 and the scoping report was provided on March 18, 2016. A summary of the scoping report includes:

1. The trip generation for the site will use ITE Trip Generation, 9th edition.
2. The existing study area intersections to evaluate include:
    - Arroyo Vista Blvd @ Ladera Dr
    - Arroyo Vista Blvd @ Tierra Pintada Blvd
    - Tierra Pintada Blvd @ Stormcloud Ave
    - Tierra Pintada Blvd @ Unser Blvd
3. All site driveways will be evaluated.
4. The trip distribution boundaries will be estimated based upon school sizes and estimated school boundaries.
5. Additional developments to include are:
    - Pulte @ Mirehaven
    - Del Webb @ Mirehaven,
    - Storm Cloud Development

    [These developments appear to have traffic impact studies under previous names. The Mirehaven developments also included the subject APS property in its master plan, thus residential trip generation and distribution was performed for vacant parcels along Tierra Pintada rather than inclusion of previous study results.]
6. Traffic analyses will be conducted for the existing condition (2015), year 2021 Baseline condition, and a year 2021 Build condition. All analyses will be conducted using Synchro 9.0.

7. The background traffic growth was to be based upon 10-year trend line growth from MRCOG traffic flow maps. The primary study area roads were developed within the last 10 years, resulting in high growth rates for the area roads except Unser Blvd. For that reason, the minimum 2% background growth rate was used. Note, the vacant areas are included as additional developments; therefore, the background rate should be minimal when added to the existing development.
8. No planed or programmed improvements are included in this assessment. The scoping report indicates that Ladera Dr improvements from Gavin Rd to Ouray Rd should be included, but no intersections within that corridor are included in the evaluation.
9. Neighborhood Impact Assessment Requirements – Identify any neighborhood impacts related to the construction of schools in the area. Identify non-motorized impacts, potential conflicts between motorized and non-motorized transportation, and other transportation related impacts.
10. A special study of the existing bus storage facility on Menaul Blvd was conducted for trip generation.

1.1 ROADWAY NETWORK

The APS Far Northwest Education Complex is located in the northwest quadrant of the Arroyo Vista Blvd/Tierra Pintada Blvd intersection (see Appendix A). The analysis assumed that driveways will be provided as follows:

- One driveway from Tierra Pintada for the K-8 school
- One driveway form Arroyo Vista Blvd to serve the Bus Depot, Health Clinic and Early Childhood Center
- One driveway to serve the proposed High School

The high school specific are currently unknown, so a conservative estimate was prepared for that land use. It is feasible that if a full high school is constructed, land uses such as the bus depot may be relocated.

Arroyo Vista Blvd is classified as a principal arterial and the school frontage is constructed with width for three (3) travel lanes and bicycle lanes in each direction within an urban cross section. This road also has a wide median and non-motorized trails paralleling both the north and south sides of the road. Arroyo Vista Blvd has a posted speed limit of 35 mph.

Tierra Pintada Blvd is classified as a collector roadway and the school frontage is constructed with two (2) travel lanes and bicycle lanes in each direction within an urban cross section. This road also has a wide median with a non-motorized trail on the east side and a sidewalk on the west. Tierra Pintada Blvd has a posted speed limit of 35 mph.

Unser Blvd, NM 345, is a regional principal arterial with three (3) travel lanes and bicycle lanes in each direction within an urban cross section. Unser also has a wide median and sidewalks for pedestrians. Unser Blvd has a posted speed limit of 45 mph.

Ladera Dr is classified as a minor arterial roadway with two (2) travel lanes and bicycle lanes in each direction within an urban cross section. This road also has a wide median with a non-

motorized trail on the north side and a sidewalk on the south. Ladera Dr has a posted speed limit of 35 mph.

1.2 ROADWAY IMPROVEMENTS

There is one near term roadway improvement anticipated, Arroyo Vista Blvd between Tierra Pintada Blvd and High Mesa Rd NW. Most of this improvement is completed. Future, near term improvements may include 250' of westbound and 1070' of eastbound road and adjoining improvements to High Mesa Rd NW. The completion of the road to Atrisco Vista Blvd has been identified as long term by the MRCOG.

1.3 TRANSIT SERVICE

The site area is not currently served by ABQ Ride. The closest service is currently located along Unser Blvd, approximately 1.8 miles from the site. Future service may serve the site.

The draft report was approved by city staff on October 10, 2016 via e-mail. This final report includes a revised site plan which shows a slight modification to the shape of the bus drop-off/pick-up area at the K-8 school. This does not affect site trips, internal circulation, or impacts upon surrounding roads.

2.0 TRAFFIC ANALYSIS METHODOLOGY

The *Highway Capacity Manual* (HCM 2010) defines operational measures of effectiveness for all types of roadways and junctions in terms of qualitative levels of service. This study is concerned with levels of service for both signalized and unsignalized intersections, and the barometer for each intersection type is measured in terms of average vehicle delay. Signalized intersections consider the average control delay for each approaching vehicle. Control delay is the sum of the deceleration, queue, stop, and acceleration delay, computed for each approach movement. The signalized intersection level of service criteria and a brief definition are contained in Table 1.

Table 1
Signalized Intersection Levels of Service

Level of Service	Average Control Delay per Vehicle	Definition
A	≤ 10.0 sec	Very low delay - Free flow
B	10.1 sec to 20.0 sec	Minimal stops, good progression
C	20.1 sec to 35.0 sec	Moderate number of stops
D	35.1 sec to 55.0 sec	Significant stops, some cycle failures
E	55.1 sec to 80.0 sec	High delay, approaching capacity
F	> 80.0 sec	Approach over saturation, excessive delay

The signalized intersection analyses were calculated using Synchro 9.0. This software calculates the level of service for each approach, and may provide optimization for each individual movement. It also provides excellent analyses for signal progression, where required. Synchro 9.0 can produce reports in either Synchro format or *Highway Capacity Manual* (HCM) format. Synchro's standard operational analyses for signalized intersections deviates slightly from the *Highway Capacity Manual* methodology, however, only for very congested intersections do the results diverge. Synchro can calculate both algorithms; and for this project the Synchro signalized level of service worksheets were used.

Unsignalized intersections also utilize control delay; however, its definition differs because of the type of traffic control. Stop controlled intersections may be two-way stop controlled, all-way stop controlled, or roundabouts (yield controlled). Each unsignalized intersection considered herein was two-way stop control, meaning that main street through-movements are not considered in the analyses because they should experience no intersection related delay. Unsignalized intersection levels of service are a function of the side street approaches and main street turning movement levels of service. For this reason, an overall intersection level of service is not calculated for unsignalized intersections. Table 2 contains brief definitions of unsignalized intersection LOS and the control delay values.

Table 2
Unsignalized Intersection Levels of Service

Level of Service	Average Control Delay per Vehicle	Definition
A	≤ 10.0 sec	Little or no delay
B	10.1 sec to 15.0 sec	Short traffic delays
C	15.1 sec to 25.0 sec	Average traffic delays
D	25.1 sec to 35.0 sec	Long traffic delays
E	35.1 sec to 50.0 sec	Very long traffic delays, approaching capacity
F	> 50.0 sec	Over capacity, excessive delay

The unsignalized intersection analyses were evaluated using Synchro 9.0. While this program is primarily a signalized intersection tool, it also performs unsignalized intersection analyses that are consistent with the *Highway Capacity Manual* methodology and the output results match those produced by the McTrans Highway Capacity Software.

Urban areas typically assign an overall level of service (LOS) D as the desirable base condition for signalized intersections. LOS E of F may be acceptable for certain low volume approaches or movements, especially where a higher level of service may significantly degrade a major movement or where the default is LOS E based upon the intersection cycle length or low approach volumes. LOS D is also the desired approach level of service for urban unsignalized intersections; however, lower service levels are frequently acceptable for low volume approaches.

A series of assumptions must be made for all level of service analyses. For this study, the following analysis assumptions were made, and they apply to existing and forecast analyses:

- Lane Width - Measured in Field (nominally 12 feet)
- Heavy Vehicle Percentage - Minimum 2% or measured in field
- Existing Peak Hour Factors - Measured in field, applied by approach average
- Forecast Peak Hour Factors:
  - App. Vol. < 200 vph 0.75
  - App. Vol. 200 to 500 vph 0.80
  - App. Vol. 500 to 1000 vph 0.85
  - App. Vol. 1000 to 1500 vph 0.90
  - App. Vol. > 1500 vph 0.95
- Saturation Flow Rate - 1900 pcphpl
- Roadway Grades - All analyses assume flat grades
- Change Intervals - 4 seconds amber, 2 second all red
- Cycle Lengths - Existing cycles, vary from 80 to 90 seconds based upon counts.
- Signalized Operations - Actuated-Coordinated is assumed along Unser Blvd
- Arrival Type - Random on each roadway
- Right-turn-on-Red - Estimated
- Conflicting Pedestrians - Minimal
- Area Type - Non CBD

3.0 TRAFFIC VOLUMES

Turning movement counts were collected in April 2016 for each of the four (4) existing study area intersections. The data were collected from 7:00 to 9:00 a.m. and from 4:00 to 6:00 p.m. The existing AM and PM peak hour turning movement volumes are contained in Table 3. The actual peak hours varied slightly from intersection to intersection. See the summary sheets in Appendix B.

Table 3
Existing (2016) AM and PM Peak Hour Turning Movement Volumes

Intersection	Eastbound			Westbound			Northbound			Southbound		
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT
AM Peak Hour												
Arroyo Vista @ Ladera				432		8	2	104	215	7	181	
Arroyo Vista @ Tierra Pintada		1		2	3	129				208		1
Tierra Pintada @ Stormcloud		105	12	3	93		78		8			
Tierra Pintada @ Unser	153	8	294	43	9	20	65	874	52	39	1305	78
PM Peak Hour												
Arroyo Vista @ Ladera				207		14	1	167	389	15	108	
Arroyo Vista @ Tierra Pintada	3	7		29	8	143		16	43	88	9	6
Tierra Pintada @ Stormcloud		101	56	4	65		25		4			
Tierra Pintada @ Unser	89	14	112	147	28	104	237	1296	91	56	759	94

Baseline forecast volumes for the year 2021 were generated using an annual background growth rate of 2.0%. A 10-year historical growth trend was reviewed for study area roadways and many of the roads in the study area were developed during the past 10 years. As a result, these roads have very high growth rates that are not indicative of future growth. Also, the addition of new roadway links has led to a reduction in volumes on roads such as Unser Blvd and Ladera Dr. Adjusted growth rates were generated based upon the completion of the area road network and the average annual growth rate over an adjusted 10-year period was +1.8% as compared to the unadjusted +7.6%. Based upon these findings, a background growth rate of 2.0% was applied to the existing volumes to determine 2021 background base volumes.

The Baseline volumes also included the new residential subdivision trips (currently undeveloped) added to the background traffic to determine the 2021 Baseline volumes. All new subdivision trips were grouped together because their intersections are located along Tierra Pintada Blvd between Stormcloud Ave and Unser Blvd. The subdivisions do not have an individual impact on any of the study area roadways. A trip distribution for these additional trips was prepared based upon existing turning movements at the Tierra Pintada/Unser Blvd intersection and the assumption that 10% of these trips are destined for westbound I-40 and the 98th St corridor south of I-40, using Tierra Pintada to the west.

The additional development referenced by the City of Albuquerque was identified differently when traffic studies were performed. The Mirehaven developments on the north side of Tierra Pintada Blvd were part of the *Inspiration and Watershed at Lower Petroglyphs* development, which originally included the subject APS property. Based upon the aerial, the Mirehaven development was reviewed and 117 of the 309 lots were developed in late 2015. These 117 lots were subtracted from the new lots; therefore, 192 Mirehaven lots were assumed. The Stormcloud development is more than 90% complete, and there are two additional

developments along the south side of Tierra Pintada. All undeveloped lots on the south side of Tierra Pintada therefore, had trips generated and distributed. The total new residential trip generation was based upon an additional 483 residential units. As stated above, these trips were distributed and assigned based upon 10% heading west and south, and the remaining 89% of traffic mirroring the turning movements at Unser Blvd. The Unser distribution was based upon all 4 hours of turning movement counts.

Site trips for the additional developments are shown in Appendix B. The 2021 Baseline (No-Build) AM and PM peak hour turning movement volumes are contained in Table 4. Note that the forecast volumes were rounded to the nearest 10 vehicles except for volumes less than 5 vehicles per hour.

Table 4
2021 AM and PM Peak Hour Baseline Turning Movement Volumes

Intersection	Eastbound			Westbound			Northbound			Southbound		
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT
AM Peak Hour												
Arroyo Vista @ Ladera				480		10		120	240	10	220	
Arroyo Vista @ Tierra Pintada		1		2	3	140			10	250		1
Tierra Pintada @ Stormcloud		120	10	3	120		90		10			
Tierra Pintada @ Unser	220	10	420	50	10	20	100	960	60	40	1440	100
PM Peak Hour												
Arroyo Vista @ Ladera				230		20		200	430	20	130	
Arroyo Vista @ Tierra Pintada	3	10		30	10	160		20	70	110	10	10
Tierra Pintada @ Stormcloud		130	60	4	80		30		4			
Tierra Pintada @ Unser	130	20	180	160	30	110	370	1430	100	60	840	160

The existing traffic volumes and turning movement count sheets are contained in Appendix B, which includes the turning movement count peak period summaries, the peak hour count/forecast summaries, and the study area volume summaries.

4.0 TRIP GENERATION, DISTRIBUTION AND ASSIGNMENT

4.1 TRIP GENERATION

Project trips were generated using the Institute of Transportation Engineers (ITE) *Trip Generation*, 9th Edition, and the trip generation data are summarized in Table 5. Trips were generated based upon a series of land use categories. The additional residential trips are also included in the table. The trip generation data worksheets are contained in Appendix C.

Table 5
Trip Generation - Proposed Land Use

LU Code	Development	Units	No.	Daily	AM In	AM Out	PM In	PM Out
520	Elementary School	Students	590	761	146	120	44	45
522	Middle School	Students	760	1231	226	226	60	62
SP	Bus Storage	Buses	200	1141	31	31	121	121
630	APS Health Clinic	SF	4000	126	0	0	9	12
560	Early Childhood Education	Students	400	1814	157	140	119	134
530	High School	Students	2400	3514	702	330	103	209
	Site Trip Total			***8587***	***1262***	***792***	***456***	***583***
210	Additional Developments	DU	483	2868	55	164	181	106

The land uses identified do not typically have pass-by trips; therefore, all trips are considered to be primary.

4.2 TRIP DISTRIBUTION

The trip distributions were prepared using APS school boundary maps. Currently, APS has not assigned tentative school boundaries for the new schools. Service areas for schools are more limited than most land uses; therefore, boundaries were estimated based upon the current maps. It is anticipated that the elementary school will focus its boundary around the Tierra Pintada corridor and the subdivisions that access it. The existing school where many of the elementary students will come from is Painted Sky Elementary south of Ladera Dr and the new boundary is estimated to be the stormwater detention facility between Ladera and Tierra Pintada. Middle school students are estimated to come primarily from Jimmy Carter Mid-School and live north of I-40. The high school, which is a long term rather than near term development, will likely be constructed once Arroyo Vista Blvd is extended to the west and residential development commences in that area. The high school will likely not be constructed within the 5 year time frame that this study focuses on. The early childhood education center is assumed to have the same distribution area as the high school though it should commence operation earlier.

In addition to the schools, a separate distribution was prepared for the remaining two facilities – the bus storage and the health clinic. Since these are regional (in terms of APS), they are assigned to a larger area. It is estimated that they will serve an area bounded by Montaño west of I-25 and I-40 east of I-25 on the north, I-25 north of I-40 and the city limit south of I-40 to the east and the west and south are the school district boundaries. The MRCOG 2040 land use

assignment was utilized to define the percentages of traffic to 6 subareas via the study area intersections.

Given that the study area is limited to a series of three primary signalized intersections, the distribution is based upon the traffic destined through those intersections. Table 6 summarizes the distribution percentages. The distributions are detailed in Appendix C.

Table 6
Trip Distribution Routing Percentages

No.	Description	Elem	Mid	HS & ECE	Bus/Clinic
1	Arroyo Vista Blvd West	45.9%	27.0%	62.0%	4.2%
2	Tierra Pintada Blvd	54.1%	35.6%	16.0%	1.4%
3	Ladera Dr		37.4%	16.8%	4.2%
4	Arroyo Vista Blvd/98th St				40.4%
5	I-40 East				47.1%
6	Unser Blvd North			5.1%	2.7%

Elem- Elementary Sch., Mid – Mid School, HS – High School, ECE – Early Childhood Ed.

Note: I-40 East uses Arroyo Vista Blvd south for access.

4.3 TRIP ASSIGNMENT

The trip assignment is listed below in Table 7 and is based upon the contributing origin-destination percentages from Table 6. The assignments are detailed in Appendix C.

Table 7
Site Trip Assignment

Intersection	Eastbound			Westbound			Northbound			Southbound		
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT
AM Peak Hour												
Arroyo Vista @ Ladera						230		27		149	16	
Arroyo Vista @ Tierra Pintada	228	96			172	85				69		287
Tierra Pintada @ Stormcloud	213	77	24		139	95	43	64		78	53	173
Tierra Pintada @ Unser	24	14			22							45
Arroyo Vista @ Bus/ECE/HC.	98	253			371	90				70		88
Arroyo Vista @ HS Access	435	226			193	266				125		205
PM Peak Hour												
Arroyo Vista @ Ladera						64		114		87	116	
Arroyo Vista @ Tierra Pintada	113	180			156	22				23		90
Tierra Pintada @ Stormcloud	59	59	18		40	27	12	18		27	19	61
Tierra Pintada @ Unser	21	8			6							15
Arroyo Vista @ Bus/ECE/HC.	79	115			77	170				178		89
Arroyo Vista @ HS Access	64	115			127	39				79		130

5.0 TRAFFIC ANALYSES

Traffic analyses were performed for the existing conditions (2016) and the project implementation year (2021) Baseline and Build scenarios. The existing level of service worksheets may be found in Appendix D, the 2021 Baseline worksheets in Appendix E and the 2021 Build worksheets in Appendix F.

Level of service analyses assess the traffic operations at an intersection in terms of vehicle throughput; however, they do not adequately assess the impacts associated with the physical dimensions of turn lanes and the blocking of accesses or upstream intersections by queued vehicles. Queuing analyses were performed for each of the movements at signalized intersections and queue lengths were determined for the 95th percentile value. The queue analyses were evaluated using Synchro 9.0 and the 95th percentile queue length was selected as the design value. Synchro uses the 95th percentile value under a normal curve assuming an infinite number of vehicles with random arrival.

Unsignalized intersections with 2-way stop control were assessed for queue length using the methodology described in the Highway Capacity Manual (HCM2010), Chapter 19. The analysis uses HCM Equation 19-68, with the methodology described on page 19-30. The Synchro program utilizes this equation to generate 95th percentile queue lengths for each unsignalized approach, and these results have been included with the level of service results.

All design queue lengths are rounded up to the nearest 25' and are in units of feet.

5.1 EXISTING CONDITIONS

Traffic analyses were performed for the existing AM and PM peak hour conditions to establish a baseline for comparison with the implementation year (2021) Baseline and Build conditions. As stated in Section 2, all analyses were conducted using Synchro 9.0 and the results produced using the *Highway Capacity Manual* methodology. Table 8 contains the signalized intersection measures of effectiveness (MOEs) including the level of service [LOS], average control delay by approach [Delay], the approach volume to capacity (v/c) ratio [Ave v/c], and the design queue [Design Queue] for each approach. The existing storage lane lengths are in parenthesis, with dual left-turn lanes designated with a – D and trap lanes (lanes that terminate at the intersection) designated as 'Trap'. Existing timing plans were supplied by the City of Albuquerque, Traffic Engineering. The existing level of service worksheets may be found in Appendix D.

Table 8
Existing Signalized Intersection Measures of Effectiveness

Intersection/Approach		AM Peak Hour				PM Peak Hour			
		LOS	Delay (sec)	Ave v/c	Design Queue	LOS	Delay (sec)	Ave v/c	Design Queue
Arroyo Vista @ Ladera		***B***	***11 s***			***A***	***7 s***		
(Trap - D)	WB LT	B	18 s	0.47	125’	B	17 s	0.24	75’
(275’)	WB RT	A	0 s	0.01	0’	A	0 s	0.01	0’
	NB Th	A	9 s	0.05	25’	A	9 s	0.07	25’
(225’)	NB RT	A	0 s	0.16	0’	A	0 s	0.26	0’
(350’- D)	SB LT	C	26 s	0.04	25’	C	26 s	0.07	25’
	SB Th	A	8 s	0.09	25’	A	7 s	0.05	25’
Arroyo Vista @ Tierra Pintada		***B***	***13 s***			***B***	***19 s***		
(350’)	EB LT	A	0 s	0.00	0’	B	13 s	0.01	25’
	EB Th-RT	A	9 s	0.00	0’	B	20 s	0.01	25’
(375’ - D)	WB LT	A	31 s	0.01	25’	D	44 s	0.12	25’
	WB Th	C	6 s	0.00	25’	B	16 s	0.00	25’
(275’)	WB RT	A	2 s	0.18	25’	A	4 s	0.19	50’
(175’)	NB LT	A	0 s	0.00	0’	A	0 s	0.00	0’
	NB Th	A	0 s	0.00	0’	D	38 s	0.12	25’
(175’)	NB RT	A	0 s	0.00	0’	B	10 s	0.29	0’
(325’ - D)	SB LT	C	21 s	0.26	75’	C	34 s	0.17	50’
	SB Th	A	0 s	0.00	0’	B	19 s	0.02	25’
(Trap)	SB RT	A	0 s	0.00	0’	A	0 s	0.01	0’
Tierra Pintada @ Unser		***B***	***18 s***			***B***	***14 s***		
(200’)	EB LT	D	52 s	0.71	150’	D	48 s	0.50	125’
	EB Th	D	37 s	0.04	25’	D	48 s	0.12	50’
(Trap)	EB RT	C	31 s	0.84	125’	B	17 s	0.55	50’
(250’)	WB LT	C	33 s	0.21	50’	E	56 s	0.67	175’
	WB Th	D	37 s	0.04	25’	D	50 s	0.20	50’
(250’)	WB RT	A	1 s	0.08	0’	B	15 s	0.46	50’
(475’)	NB LT	B	11 s	0.30	50’	A	8 s	0.50	100’
	NB Th	B	13 s	0.31	200’	B	10 s	0.42	225’
(325’)	NB RT	A	0 s	0.06	25’	A	2 s	0.09	25’
(425’)	SB LT	A	9 s	0.12	50’	A	7 s	0.23	25’
	SB Th	B	15 s	0.47	350’	B	13 s	0.29	150’
(425’)	SB RT	A	2 s	0.09	25’	A	2 s	0.11	25’

Overall signalized operations are very good at the existing intersections and no queue deficiencies were identified. No mitigation is proposed for the existing condition.

Table 9 contains the MOEs for the existing unsignalized intersection within the study area. Unsignalized intersections have the critical approaches assessed for level of service [LOS], average control delay [Delay], and the estimated 95th percentile queue length [Queue]. The study area intersection has two-way stop control.

Table 9
Existing Unsignalized Intersection Levels of Service

Intersection	AM Peak			PM Peak		
	LOS	Delay (sec)	Queue (ft)	LOS	Delay (sec)	Queue (ft)
Tierra Pintada @ Stormcloud Ave						
EB Approach	A	0 s	0’	A	0 s	0’
WB Left Turn	A	8 s	0’	A	8 s	0’
NB Approach	B	10 s	25’	A	10 s	25’

The analyses indicate excellent operations at the unsignalized intersection. No mitigation is proposed.

5.2 YEAR 2021 BASELINE (NO-BUILD)

The 2021 Baseline condition is a No-Build assessment of traffic within the study area. This scenario assumes no modifications to the existing roadway network (discussed in Section 1.2). Baseline forecast volumes for the year 2021 were generated using an annual background growth rate of 2.0% and included the proposed Tierra Pintada corridor subdivisions (see Section 3.0). The signalized intersection level of service analyses assumed no network or approach changes and timings were optimized as needed to provide good operations by 2021. The Unser Blvd corridor cycle length was not modified based upon existing coordination. The measures of effectiveness for signalized intersections are the same as those described in Section 5.1. The 2021 Baseline MOEs are contained in Tables 10 and 11 and the level of service worksheets may be found in Appendix E.

Table 10
2021 Baseline Signalized Intersection Measures of Effectiveness

Intersection/Approach		AM Peak Hour				PM Peak Hour			
		LOS	Delay (sec)	Ave v/c	Design Queue	LOS	Delay (sec)	Ave v/c	Design Queue
Arroyo Vista @ Ladera		***B***	***13 s***			***A***	***8 s***		
(Trap - D)	WB LT	C	22 s	0.57	150’	C	22 s	0.31	75’
(275’)	WB RT	A	0 s	0.01	0’	A	0 s	0.01	0’
	NB Th	A	9 s	0.05	25’	A	8 s	0.07	50’
(225’)	NB RT	A	0 s	0.17	0’	A	0 s	0.28	0’
(350’- D)	SB LT	C	29 s	0.06	25’	C	28 s	0.10	25’
	SB Th	A	7 s	0.10	50’	A	6 s	0.05	25’

Table 10 (Continued)
2021 Baseline Signalized Intersection Measures of Effectiveness

Intersection/Approach		AM Peak Hour				PM Peak Hour			
		LOS	Delay (sec)	Ave v/c	Design Queue	LOS	Delay (sec)	Ave v/c	Design Queue
Arroyo Vista @ Tierra Pintada		***B***	***18 s***			***B***	***18 s***		
(350')	EB LT	A	0 s	0.00	0'	A	9 s	0.01	25'
	EB Th-RT	A	9 s	0.00	0'	B	15 s	0.01	25'
(375' - D)	WB LT	C	35 s	0.06	25'	D	38 s	0.12	25'
	WB Th	A	7 s	0.00	25'	B	12 s	0.00	25'
(275')	WB RT	A	2 s	0.21	25'	A	3 s	0.20	50'
(175')	NB LT	A	0 s	0.00	0'	A	0 s	0.00	0'
	NB Th	A	0 s	0.00	0'	C	30 s	0.13	25'
(175')	NB RT	A	0 s	0.01	0'	A	8 s	0.37	0'
(325' - D)	SB LT	C	30 s	0.38	200'	D	39 s	0.40	75'
	SB Th	A	0 s	0.00	0'	B	20 s	0.02	25'
(Trap)	SB RT	A	0 s	0.00	0'	A	0 s	0.02	0'
Tierra Pintada @ Unser		***C***	***27s***			***B***	***19 s***		
(200')	EB LT	D	37 s	0.64	175'	E	58 s	0.70	150'
	EB Th	C	26 s	0.03	25'	D	49 s	0.16	50'
(Trap)	EB RT	D	40 s	0.91	250'	B	17 s	0.67	50'
(250')	WB LT	C	25 s	0.17	50'	E	58 s	0.71	175'
	WB Th	C	27 s	0.03	25'	D	49 s	0.20	50'
(250')	WB RT	A	0 s	0.06	0'	A	7 s	0.41	25'
(475')	NB LT	C	33 s	0.62	150'	B	14 s	0.60	225'
	NB Th	C	21 s	0.42	275'	B	11 s	0.47	275'
(325')	NB RT	A	1 s	0.08	25'	A	2 s	0.10	25'
(425')	SB LT	B	15 s	0.16	50'	B	14 s	0.33	50'
	SB Th	C	27 s	0.67	475'	C	25 s	0.47	225'
(425')	SB RT	A	5 s	0.14	50'	A	4 s	0.25	50'

Overall signalized operations will be good in 2021 and no queue deficiencies were identified. A few movements at the Unser Blvd-Terra Pintada Blvd intersection will degrade to LOS E, and future signal revisions may mitigate this impact. (The Unser Blvd corridor timing is being updated.) No mitigation is proposed for the Baseline 2021 scenario.

Table 11 contains the MOEs for the existing unsignalized intersection within the study area. The evaluation criteria are the same as Section 5.1 with two-way stop control.

Table 11
2021 Baseline Unsignalized Intersection Levels of Service

Intersection	AM Peak			PM Peak		
	LOS	Delay (sec)	Queue (ft)	LOS	Delay (sec)	Queue (ft)
Tierra Pintada @ Stormcloud Ave						
EB Approach	A	0 s	0'	A	0 s	0'
WB Left Turn	A	8 s	0'	A	8 s	0'
NB Approach	B	11 s	25'	B	10 s	25'

The analyses indicate excellent operations at the unsignalized intersection for the 2021 Baseline scenario. No mitigation is proposed.

5.3 YEAR 2021 WITH SITE (BUILD)

The 2021 Build condition includes site traffic from the APS Far Northwest Education Complex developments added to the study area traffic. The signalized intersection level of service analyses were optimized to determine the best operations by 2021 except at Unser Blvd where the existing cycle length was maintained. The measures of effectiveness for the signalized intersections are the same as those described in Section 5.1 and the results are contained in Table 12. The level of service worksheets for the 2021 Build scenario may be found in Appendix F.

This evaluation includes the high school that will likely not be constructed by 2021, but the desire is to identify potential impacts. This scenario also assumes that no changes are made to the study area roadways or intersections as discussed in Section 1.2, except for site improvements along the Arroyo Vista Blvd and the addition of the north leg at the Tierra Pintada Blvd-Stormcloud Ave intersection to serve the K-8 school. In addition, the bus access is anticipated to be a full access "T" intersection with Arroyo Vista Blvd and the high school/early childhood education facility will align with the existing west driveway for the stadium to form a 4-legged intersection.

Table 12
2021 Build Signalized Intersection Measures of Effectiveness

Intersection/Approach		AM Peak Hour				PM Peak Hour			
		LOS	Delay (sec)	Ave v/c	Design Queue	LOS	Delay (sec)	Ave v/c	Design Queue
Arroyo Vista @ Ladera		***B***	***14 s***			***B***	***11 s***		
(Trap - D)	WB LT	C	25 s	0.61	150'	C	23 s	0.36	75'
(275')	WB RT	A	0 s	0.18	0'	A	0 s	0.06	0'
	NB Th	B	15 s	0.11	50'	B	15 s	0.24	75'
(225')	NB RT	A	0 s	0.19	0'	A	1 s	0.32	0'
(350'- D)	SB LT	C	33 s	0.48	75'	C	27 s	0.26	50'
	SB Th	A	8 s	0.11	50'	A	6 s	0.14	50'
Arroyo Vista @ Tierra Pintada		***B***	***13 s***			***B***	***15 s***		
(350')	EB LT	A	9 s	0.39	125'	A	9 s	0.23	50'
	EB Th-RT	A	9 s	0.05	25'	B	13 s	0.15	50'
(375' - D)	WB LT	C	35 s	0.01	25'	D	39 s	0.18	25'
	WB Th	B	15 s	0.13	50'	B	14 s	0.24	50'
(275')	WB RT	A	4 s	0.35	50'	A	3 s	0.27	25'
(175')	NB LT	A	0 s	0.00	0'	A	0 s	0.00	0'
	NB Th	A	0 s	0.00	0'	C	28 s	0.07	50'
(175')	NB RT	A	0 s	0.02	0'	A	6 s	0.23	25'
(325' - D)	SB LT	C	32 s	0.50	200'	D	44 s	0.49	100'
	SB Th	A	0 s	0.00	0'	C	20 s	0.02	25'
(Trap)	SB RT	A	1 s	0.32	0'	A	5 s	0.19	25'

Table 12 (Continued)
2021 Build Signalized Intersection Measures of Effectiveness

Intersection/Approach		AM Peak Hour				PM Peak Hour			
		LOS	Delay (sec)	Ave v/c	Design Queue	LOS	Delay (sec)	Ave v/c	Design Queue
Tierra Pintada @ Unser		***C***	***25s***			***C***	***21 s***		
(200')	EB LT	D	42 s	0.73	200'	E	70 s	0.82	175'
	EB Th	C	28 s	0.06	50'	D	50 s	0.25	75'
(Trap)	EB RT	D	39 s	0.89	250'	B	16 s	0.67	50'
(250')	WB LT	C	23 s	0.17	50'	E	76 s	0.87	175'
	WB Th	C	29 s	0.10	50'	D	52 s	0.32	75'
(250')	WB RT	A	0 s	0.06	0'	B	11 s	0.50	50'
(475')	NB LT	C	26 s	0.56	125'	B	13 s	0.60	225'
	NB Th	B	19 s	0.39	275'	B	11 s	0.46	275'
(325')	NB RT	A	1 s	0.07	25'	A	2 s	0.10	25'
(425')	SB LT	B	15 s	0.14	50'	B	13 s	0.31	50'
	SB Th	C	25 s	0.61	450'	C	24 s	0.44	225'
(425')	SB RT	A	4 s	0.18	50'	A	4 s	0.26	50'

The 2021 Build scenario indicates that average delay will increase slightly during some peaks and reduce during others. Overall operations will improve at the Arroyo Vista Blvd-Tierra Pintada Blvd intersection by increasing traffic to levels that better substantiate the need for a traffic signal. Operations are good therefore no mitigation is proposed.

Table 13 contains the unsignalized intersection results, including the site access driveways.

Table 13
2021 Build Unsignalized Intersection Levels of Service

Intersection	AM Peak			PM Peak		
	LOS	Delay (sec)	Queue (ft)	LOS	Delay (sec)	Queue (ft)
Tierra Pintada @ Stormcloud Ave						
EB Left Turn	A	9 s	25'	A	8 s	25'
WB Left Turn	A	8 s	0'	A	8 s	0'
NB Approach	F	> 120 s	600'	C	18 s	25'
SB Left Turn	F	> 120 s	200'	B	14 s	25'
SB Through-Right	E	36 s	150'	B	12 s	25'
Arroyo Vista @ Bus/ECE HC Access						
EB Left Turn	B	12 s	25'	A	9 s	25'
WB Approach	A	0 s	0'	A	0 s	0'
SB Left Turn	D	27 s	50'	C	18 s	75'
SB Right Turn	B	13 s	25'	B	10 s	25'
Arroyo Vista @ HS Access						
EB Left Turn	D	34 s	225'	A	10 s	25'
WB Left Turn	A	0 s	0'	A	0 s	0'
NB Left Turn	A	0 s	0'	A	0 s	0'
NB Through-Right	A	0 s	0'	A	0 s	0'
SB Left Turn	F	> 120 s	500'	B	15 s	25'
SB Through-Right	C	16 s	75'	B	11 s	25'

Operations will be good at the Bus/Early Childhood/Health Clinic access with Arroyo Vista Blvd during each peak period. The heavy bus access activity will occur outside the AM and PM peak periods and does not affect the analyses. The analyses assumed a two-lane exit from the site.

The Tierra Pintada Blvd/Stormcloud intersection will fail during the AM peak period. Alternative traffic control should be considered at this intersection to resolve operations. The alternatives should consider either a roundabout or a traffic signal. It appears that Tierra Pintada may be overdesigned as a 5-lane principal arterial with a collector classification; though future development in the area may require more capacity than can be maintained on a 3-lane collector. This should be verified by the city of Albuquerque, and if a narrow roadway is appropriate, a road diet should be considered. If the road is reduced to 3 lanes, a roundabout (single lane) should be the primary consideration. The roundabout will provide better safety and operations than a traffic signal. If the city cannot or will not reduce the roadway width, a traffic signal should be installed. Either traffic control device will benefit safety for pedestrian activity within the area.

The high school access with Arroyo Vista Blvd will fail during the AM peak period. If the high school is constructed as anticipated herein, alternative traffic control will be required – either a roundabout or a traffic signal. Given that Arroyo Vista Blvd is a principal arterial with future access to Atrisco Vista Blvd, it is anticipated that the road may require the 7-lane section constructed. Given the multi-lane road, a traffic signal will best serve the access. In addition, it will serve the stadium on the south side of Arroyo Vista Blvd, and that access will benefit the stadium with two signalized accesses.

5.4 OPERATIONS MITIGATION

Two intersections will experience failures as unsignalized intersections. Each was reevaluated as a signalized intersection to examine operations with that traffic control. The signalized intersection evaluation parameters are the same as used in sections 5.1 through 5.3. Each was evaluated with 75 second cycles and the results are in Table 14 below.

Table 14
2021 Build-Mitigated Signalized Intersection Measures of Effectiveness

Intersection/Approach		AM Peak Hour				PM Peak Hour			
		LOS	Delay (sec)	Ave v/c	Design Queue	LOS	Delay (sec)	Ave v/c	Design Queue
Tierra Pintada @ Stormcloud		***C***	***21 s***			***B***	***13 s***		
(200')	EB LT	C	27 s	0.70	125'	B	13 s	0.15	50'
	EB Th-RT	B	15 s	0.21	75'	B	11 s	0.23	75'
(175')	WB LT	B	12 s	0.01	25'	B	12 s	0.01	25'
	WB Th-RT	C	22 s	0.50	125'	B	16 s	0.17	50'
	NB Approach	D	41 s	0.74	200'	C	23 s	0.20	75'
(150')	SB LT	B	16 s	0.19	75'	B	15 s	0.07	25'
	SB Th-RT	A	6 s	0.35	50'	A	6 s	0.16	50'

Table 14 (Continued)
2021 Build-Mitigated Signalized Intersection Measures of Effectiveness

Intersection/Approach		AM Peak Hour				PM Peak Hour			
		LOS	Delay (sec)	Ave v/c	Design Queue	LOS	Delay (sec)	Ave v/c	Design Queue
Arroyo Vista @ High School		***B***	***18 s***			***B***	***18 s***		
(350')	EB LT	C	26 s	0.79	250'	C	25 s	0.35	50'
	EB Th-RT	A	9 s	0.11	50'	C	21 s	0.15	50'
(350')	WB LT	A	0 s	0.00	0'	A	0 s	0.00	0'
	WB Th-RT	B	19 s	0.66	75'	C	27 s	0.46	50'
	NB LT	A	0 s	0.00	0'	A	0 s	0.00	0'
	NB Th-RT	A	0 s	0.00	0'	A	0 s	0.00	0'
(425')	SB LT	C	29 s	0.36	125'	A	8 s	0.13	50'
	SB Th-RT	A	1 s	0.25	0'	A	0 s	0.04	0'

Signalizing each intersection should provide good operations. The left-turn lane into the high school may require modification such as a dual left-turn lane based upon actual district boundaries and student population. Actual sizing of that intersection should occur at the time of implementation.

5.5 NON-MOTORIZED TRANSPORTATION

The study area roadways have excellent non-motorized facilities. Each of these facilities contains directional bicycle lanes with trails (minimally) paralleling one side of the road and sidewalk on the other. Arroyo Vista Blvd has trails along each side of the street. Excellent non-motorized circulation is available along each roadway and this will enhance the school land uses by providing safe walking and cycling opportunities.

Cycling is well accommodated with on-street bike lanes on the principal study area roadways and off-street trails west of Unser Blvd. The MRCOG Long Range Bikeway System Map indicates this area will connect with regional facilities as part of the AMPA bike connectivity. Given that this area of town is developing, if the existing plans are followed, cycling connectivity will continue to improve.

6.0 FINDINGS AND RECOMMENDATIONS

6.1 FINDINGS AND CONSIDERATIONS

The construction of the Albuquerque Public Schools (APS) Far Northwest Education Complex will have minimal impact on most of the study area intersections when fully constructed by 2021. All signalized intersections will operate at LOS C or better under the Build condition. Underutilized intersection operations will actually experience lower average delays based upon increased traffic.

The existing unsignalized intersection at Tierra Pintada and Stormcloud Ave will be impacted and will require mitigation to ensure safe operations for the K-8 school. Alternative traffic control to stop control will be required to accommodate the AM peak period, and while not evaluated as deficient, after school pick-up will also benefit. (Note: the PM peak evaluation conducted was for the peak hour of adjacent street traffic which does not correspond to the school PM peak. The school PM peak would result in poor operations for approximately 30 minutes as a stop controlled intersection.) The alternative traffic control could be either a roundabout (preferred) or a traffic signal. A roundabout (single lane) should be considered if Tierra Pintada is reduced to 3 lanes because it will provide better safety and operations than a traffic signal. If the city cannot or will not reduce the roadway width, a traffic signal should be installed. Either traffic control device will benefit pedestrian safety within the area.

This area is developing, and non-motorized considerations are a significant design component. All local streets have curb, gutter and sidewalk, and each of the collector and arterial roads within the study area have sidewalk and a non-motorized trail along at least one side of the street. With bike lanes on all of the collector and arterial roadways, this area has excellent non-motorized circulation and accessibility. This will enhance the school land uses and encourage students to walk or ride to school, hopefully reducing the daily motorized traffic to the schools.

The access for the bus storage, early childhood education facility and health center was evaluated as a full access intersection. The MRCOG roadway access policies (2014) were reviewed and Arroyo Vista Blvd does not have access limitations; therefore, it is assumed that driveway spacing should be limited to 300’ or more. The bus storage access will be approximately 950’ west of Tierra Pintada Blvd; therefore, full access should be acceptable. The bus facility will generate most of its trips outside of the peak periods; therefore the stop control will be adequate.

A high school is proposed for a portion of the overall site. Since long range planning for the school is not complete, it was believed that is should be identified herein and the site should be evaluated with a ‘worst case’ scenario. It is unknown if the high school will be a standard (2,400 students) or a magnet (800 students) high school, so the higher enrollment was selected for evaluation to determine the greatest impact. This ‘worst case’ should be considered when evaluating traffic for other area developments. This portion of the site may require a traffic update once a final determination concerning the high school is made.

If a standard high school is constructed, the intersection with Arroyo Vista Blvd will require traffic control other than stop control. Given that a high school will likely not be built until development commences west of the site and Arroyo Vista Blvd is significantly extended toward Atrisco Vista Blvd, traffic on Arroyo Vista Blvd will be substantially increased. This will likely yield the need for alternative traffic control during both peak periods. In addition,

the high school access should be aligned with the sports stadium access on the south side of Arroyo Vista Blvd so that the alternative traffic control benefits both developments. Arroyo Vista Blvd is a 7-lane arterial, and as such a multilane roundabout would likely be less efficient than a traffic signal. Future signalization of the high school access should be considered and turn lanes determined during school design.

6.2 RECOMMENDATIONS

No mitigation is recommended for off-site intersections or roadway segments based upon the analyses results. The project will have minimal impacts at off-site intersections and signal timing should be reviewed after buildout as part of the City of Albuquerque's standard signal timing review process. It is also noted that the Unser Blvd-Tierra Pintada Blvd intersection has dual left-turn lanes constructed on all except the Tierra Pintada Blvd approach. Each of these second lanes is striped out for future use.

Stormcloud Ave @ Tierra Pintada Blvd

The fourth leg of the intersection will serve as the primary access for the K-8 school (note buses access elsewhere). This intersection should be upgraded with alternative traffic control. The City of Albuquerque should provide guidance concerning whether a roundabout or traffic signal will be acceptable. Note: it is unlikely that the intersection will meet a traffic signal warrant based upon vehicle traffic. It may be justified based upon pedestrian school crossings, and should benefit safety for pedestrian crossings of Tierra Pintada during non-school hours.

A roundabout should only be considered if a road diet is performed on Tierra Pintada Blvd so a single lane roundabout could be constructed. Assuming that the City will not support a road diet on a new road, the intersection should be signalized prior to school opening. Both left- and right-turn deceleration lanes should be provided on Tierra Pintada Blvd per the DPM, with an eastbound left-turn lane length of 250' and a westbound right-turn lane length of at least 100'. The school egress should have two lanes, a left-turn lane and a right-through lane, and each lane should be at least 11' wide. Each lane should be at least 150' in length. All crosswalks should be stripped at the intersection, and pedestrian actuated countdown signals installed.

Tierra Pintada Blvd School Zone

A school zone should be established on Tierra Pintada Blvd, beginning at least 500' in advance of the Stormcloud Ave intersection in each travel direction. The school zone should be signed and marked in accordance with COA Standard Drawing 2900-401. Flashing Beacon assemblies should be designed and installed in accordance with City standards. The reduced school speed in this zone should be 15 mph.

Bus Access @ Arroyo Vista Blvd

The Bus Access (for the bus storage, health center and early childhood education facility) should be constructed near the midpoint between the stadium accesses. The access should have a median opening with a 200' eastbound left-turn lane and a 150' westbound right-turn lane. The egress should have two lanes, a left- and right-turn lane, and each lane should be at least 12' wide. The two lanes should extend for at least 200' into the site and should have roadway signing and markings consistent with the MUTCD and COA standards. The median opening

should be at least 50’ wide or as required for a largest APS bus to turn safely through the opening.

High School Access @ Arroyo Vista Blvd

Nothing should be constructed at this site access at this time. When the site is designed, the access should be aligned with the Stadium access on the south side of Arroyo Vista Blvd. Arroyo Vista Blvd capacity should anticipate the 1032 AM peak and 312 PM peak trips in the future for this facility, and access specifics should be identified once the school design has commenced.

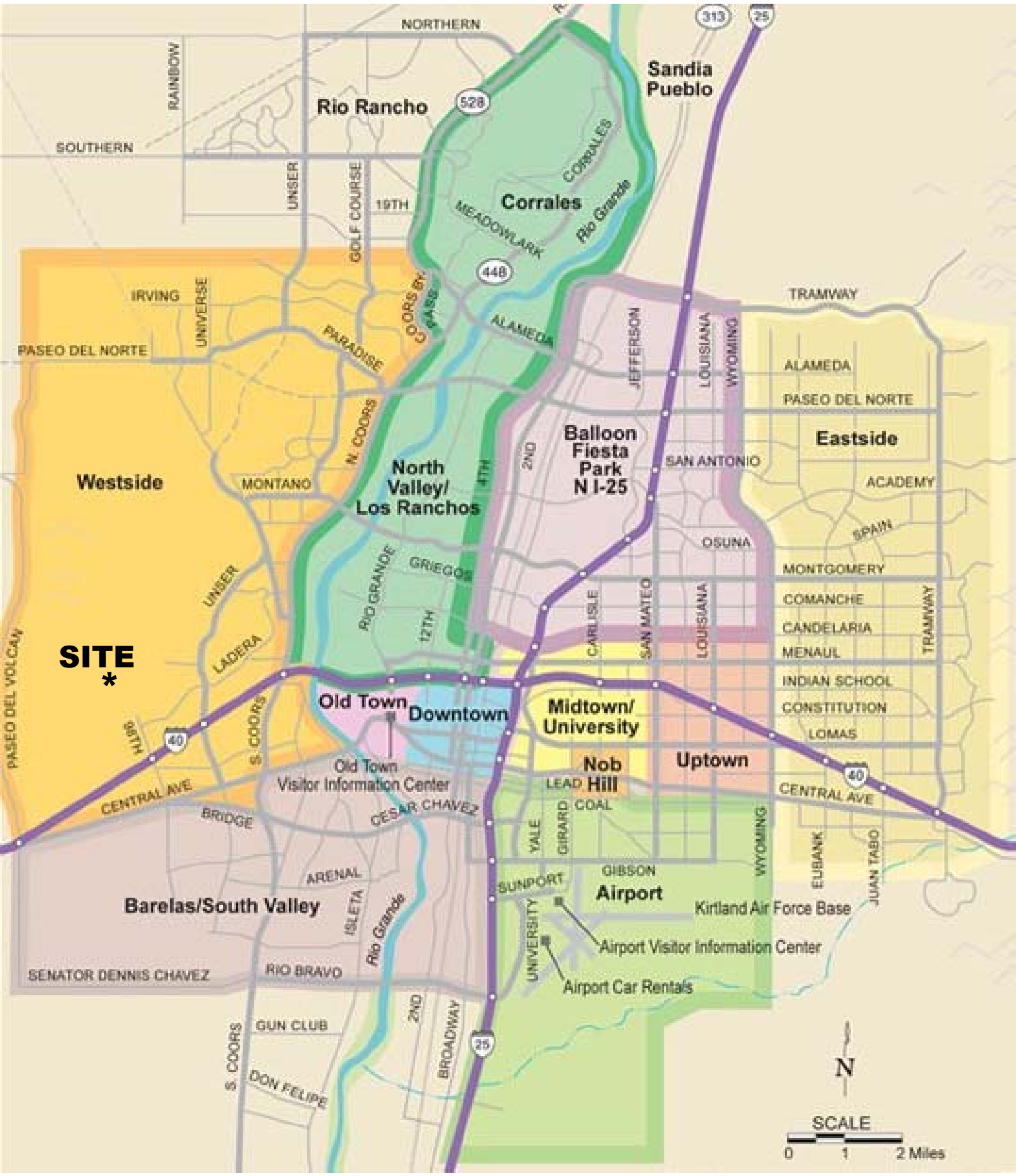
Appendices

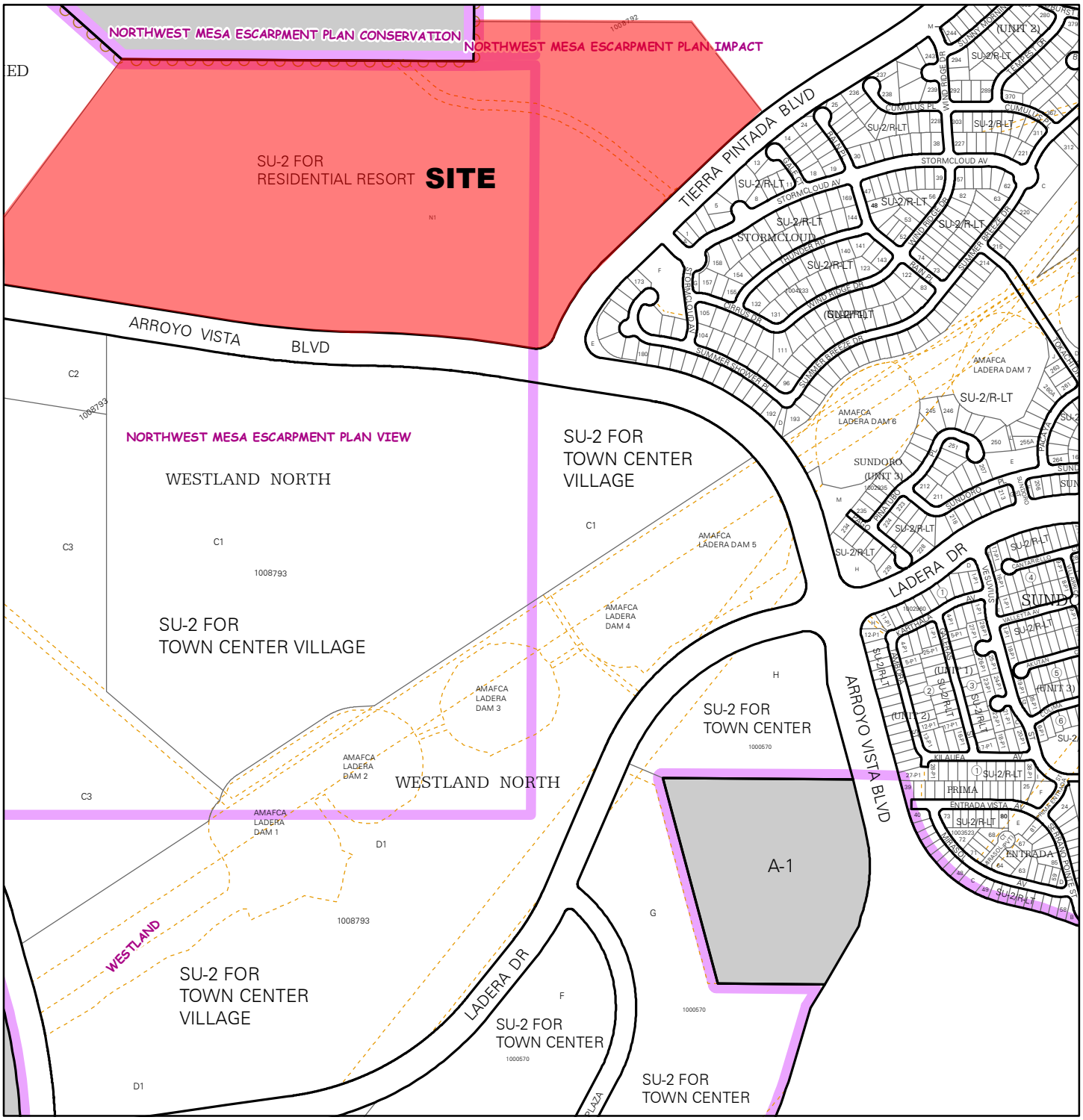
Appendix A	Vicinity Maps and Site Drawing
Appendix B	Traffic Volume Summary Sheets
Appendix C	Trip Generation, Distribution, and Assignments
Appendix D	Existing Level of Service Analyses
Appendix E	2021 Baseline Level of Service Analyses
Appendix F	2021 Build Level of Service Analyses
Appendix G	2021 Build-Mitigation Level of Service Analyses

Appendix A

Vicinity Maps and Site Drawing

Vicinity Map

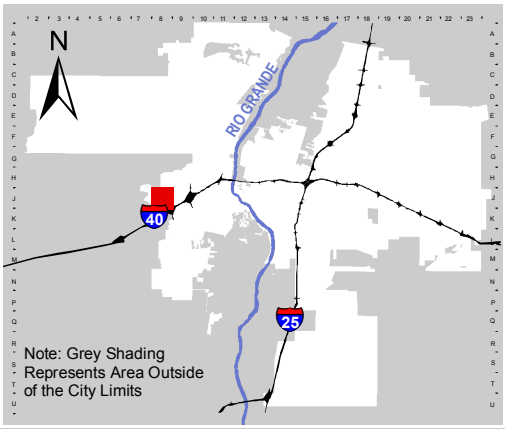




For more current information and details visit: http://www.cabq.gov/gis

Albuquerque Geographic Information System

Map amended through: 4/2/2012



Zone Atlas Page:

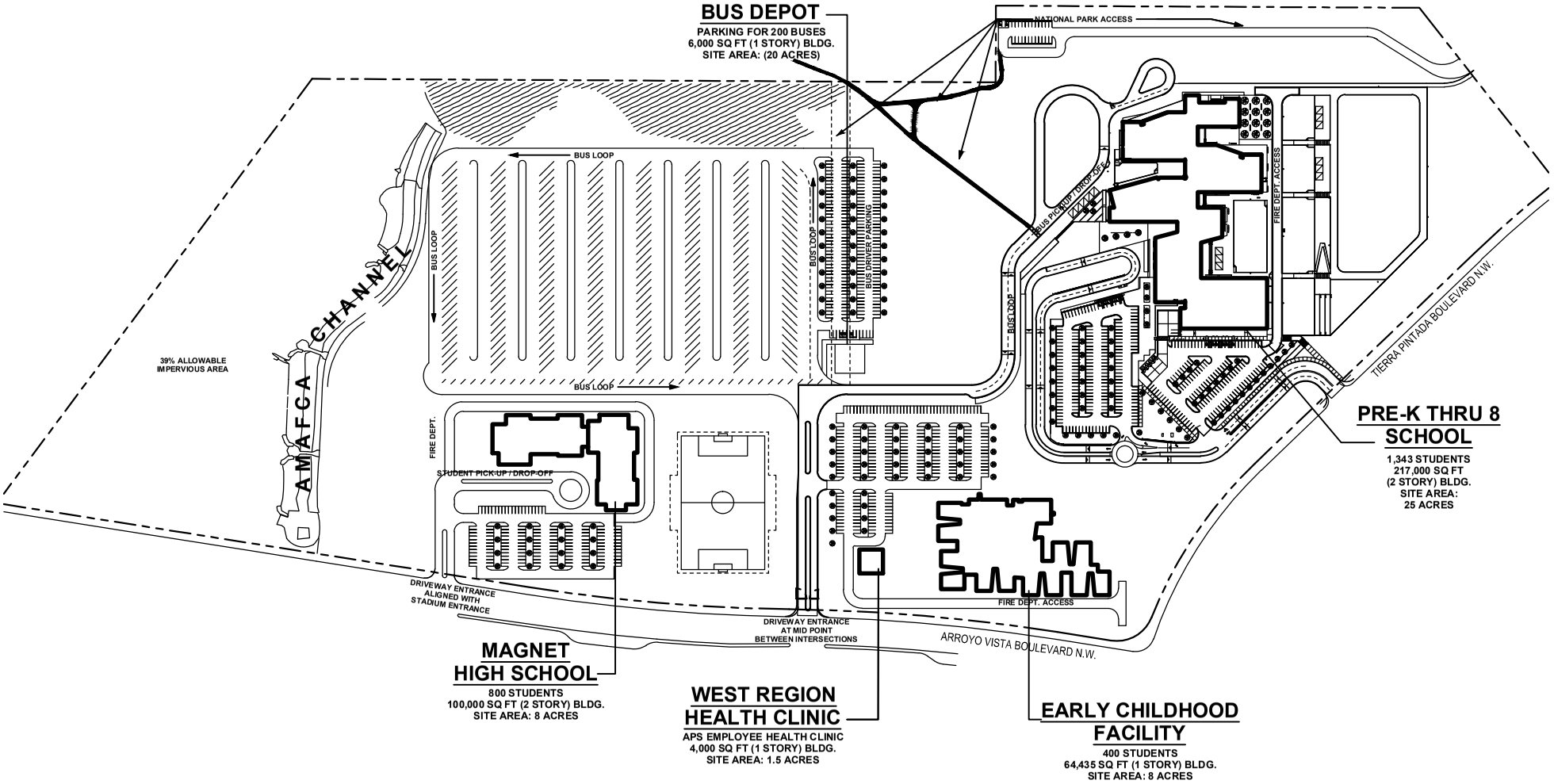
J-08-Z

Selected Symbols

- SECTOR PLANS
- Design Overlay Zones
- City Historic Zones
- H-1 Buffer Zone
- Petroglyph Mon.
- Escarpment
- 2 Mile Airport Zone
- Airport Noise Contours
- Wall Overlay Zone

0 750 1,500 Feet

Aerial with Site Plan


BUS DEPOT
PARKING FOR 200 BUSES
6,000 SQ FT (1 STORY) BLDG.
SITE AREA: (20 ACRES)
NATIONAL PARK ACCESS
BUS LOOP
BUS LOOP
BUS LOOP
BUS LOOP
BUS LOOP
BUS DRIVER PARKING
BUS PICK UP / DROP OFF
FIRE DEPT. ACCESS
AMAFCA CHANNEL
39% ALLOWABLE IMPERVIOUS AREA
FIRE DEPT.
STUDENT PICK-UP / DROP-OFF
TIERRA PINTADA BOULEVARD N.W.
PRE-K THRU 8 SCHOOL
1,343 STUDENTS
217,000 SQ FT
(2 STORY) BLDG.
SITE AREA:
25 ACRES
DRIVEWAY ENTRANCE ALIGNED WITH STADIUM ENTRANCE
DRIVEWAY ENTRANCE AT MID POINT BETWEEN INTERSECTIONS
FIRE DEPT. ACCESS
ARROYO VISTA BOULEVARD N.W.
MAGNET HIGH SCHOOL
800 STUDENTS
100,000 SQ FT (2 STORY) BLDG.
SITE AREA: 8 ACRES
WEST REGION HEALTH CLINIC
APS EMPLOYEE HEALTH CLINIC
4,000 SQ FT (1 STORY) BLDG.
SITE AREA: 1.5 ACRES
EARLY CHILDHOOD FACILITY
400 STUDENTS
64,435 SQ FT (1 STORY) BLDG.
SITE AREA: 8 ACRES

Appendix B

Traffic Volume Summary Sheets

APS Far NW Education Complex - Existing Vols

AM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera				432		8		104	215	7	181		**947**
Arroyo Vista @ Tierra Pintada		1		2	3	129				208		1	**344**
Tierra Pintada @ Stormcloud/K-8		105	12	3	93		78		8				**299**
Tierra Pintada @ Unser	153	8	294	43	9	20	65	874	52	39	1305	78	**2940**
Arroyo Vista @ Multiple Access		1			10								**11**
Arroyo Vista @ High School		1			10								**11**

PM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera				207		14		167	389	15	108		**900**
Arroyo Vista @ Tierra Pintada	3	7		29	8	143		16	43	88	9	6	**352**
Tierra Pintada @ Stormcloud/K-8		101	56	4	65		25		4				**255**
Tierra Pintada @ Unser	89	14	112	147	28	104	237	1296	91	56	759	94	**3027**
Arroyo Vista @ Multiple Access		10			34								**44**
Arroyo Vista @ High School		10			34								**44**

APS Far NW Education Complex - 2021 No Build Vols

AM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera				480		10		120	240	10	220		**1080**
Arroyo Vista @ Tierra Pintada		1		2	3	140			10	250		1	**407**
Tierra Pintada @ Stormcloud/K-8		120	10	3	120		90		10				**353**
Tierra Pintada @ Unser	220	10	420	50	10	20	100	960	60	40	1440	100	**3430**
Arroyo Vista @ Multiple Access		1			10								**11**
Arroyo Vista @ High School		1			10								**11**

PM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera				230		20		200	430	20	130		**1030**
Arroyo Vista @ Tierra Pintada	3	10		30	10	160		20	70	110	10	10	**433**
Tierra Pintada @ Stormcloud/K-8		130	60	4	80		30		4				**308**
Tierra Pintada @ Unser	130	20	180	160	30	110	370	1430	100	60	840	160	**3590**
Arroyo Vista @ Multiple Access		10			40								**50**
Arroyo Vista @ High School		10			40								**50**

Annual Growth Rate: 2.0%
Growth Years 5

APS Far NW Education Complex - 2021 Build Vols

AM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera				480		240		150	240	160	240		**1510**
Arroyo Vista @ Tierra Pintada	230	100		2	180	230			10	320		290	**1362**
Tierra Pintada @ Stormcloud/K-8	210	200	30	3	260	100	130	60	10	78	50	170	**1301**
Tierra Pintada @ Unser	240	20	420	50	30	20	100	960	60	40	1440	150	**3530**
Arroyo Vista @ Multiple Access	98	250			380	90				70		88	**976**
Arroyo Vista @ High School	440	230			200	270				130		210	**1480**

PM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera				230		80		310	430	110	250		**1410**
Arroyo Vista @ Tierra Pintada	120	190		30	170	180		20	70	130	10	100	**1020**
Tierra Pintada @ Stormcloud/K-8	60	190	80	4	120	27	40	20	4	27	20	60	**652**
Tierra Pintada @ Unser	150	30	180	160	40	110	370	1430	100	60	840	180	**3650**
Arroyo Vista @ Multiple Access	79	130			120	170				180		90	**769**
Arroyo Vista @ High School	60	130			170	40				80		130	**610**

Annual Growth Rate 2.0%

Cleland Counts

1441 Camino Cerritos S.E.
Albuquerque, New Mexico 87123
(505) 414-0465

Counter: R.C.

File Name : Arroyo Vista & Ladera
Site Code : 04072016
Start Date : 4/7/2016
Page No : 1

Groups Printed- Cars - Trucks - Buses

	Eastbound				Ladera Westbound				Arroyo Vista Northbound				Arroyo Vista Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	110	0	1	111	1	20	42	63	3	56	0	59	233
07:15 AM	0	0	0	0	119	0	4	123	0	37	49	86	2	46	0	48	257
07:30 AM	0	0	0	0	115	0	1	116	0	32	60	92	1	49	0	50	258
07:45 AM	0	0	0	0	88	0	2	90	1	15	64	80	1	30	0	31	201
Total	0	0	0	0	432	0	8	440	2	104	215	321	7	181	0	188	949
08:00 AM	0	0	0	0	64	0	3	67	0	18	42	60	2	23	0	25	152
08:15 AM	0	0	0	0	43	0	3	46	0	22	45	67	1	18	0	19	132
08:30 AM	0	0	0	0	60	0	0	60	0	18	108	126	7	28	0	35	221
08:45 AM	0	0	0	0	93	0	4	97	1	12	67	80	2	22	0	24	201
Total	0	0	0	0	260	0	10	270	1	70	262	333	12	91	0	103	706
*** BREAK ***																	
04:00 PM	0	0	0	0	63	0	8	71	0	33	75	108	2	21	0	23	202
04:15 PM	0	0	0	0	45	0	3	48	0	40	72	112	2	28	0	30	190
04:30 PM	0	0	0	0	44	0	6	50	0	45	95	140	6	23	0	29	219
04:45 PM	0	0	0	0	39	0	4	43	0	34	110	144	2	24	0	26	213
Total	0	0	0	0	191	0	21	212	0	152	352	504	12	96	0	108	824
05:00 PM	0	0	0	0	57	0	2	59	0	46	90	136	3	26	0	29	224
05:15 PM	0	0	0	0	60	0	1	61	1	39	92	132	5	25	0	30	223
05:30 PM	0	0	0	0	51	0	7	58	0	48	97	145	5	33	0	38	241
05:45 PM	0	0	0	0	43	0	2	45	0	37	89	126	4	33	0	37	208
Total	0	0	0	0	211	0	12	223	1	170	368	539	17	117	0	134	896
Grand Total	0	0	0	0	1094	0	51	1145	4	496	1197	1697	48	485	0	533	3375
Apprch %	0	0	0		95.5	0	4.5		0.2	29.2	70.5		9	91	0		
Total %	0	0	0	0	32.4	0	1.5	33.9	0.1	14.7	35.5	50.3	1.4	14.4	0	15.8	
Cars	0	0	0	0	1079	0	50	1129	3	488	1182	1673	48	477	0	525	3327
% Cars	0	0	0	0	98.6	0	98	98.6	75	98.4	98.7	98.6	100	98.4	0	98.5	98.6
Trucks	0	0	0	0	2	0	1	3	1	5	2	8	0	4	0	4	15
% Trucks	0	0	0	0	0.2	0	2	0.3	25	1	0.2	0.5	0	0.8	0	0.8	0.4
Buses	0	0	0	0	13	0	0	13	0	3	13	16	0	4	0	4	33
% Buses	0	0	0	0	1.2	0	0	1.1	0	0.6	1.1	0.9	0	0.8	0	0.8	1

Cleland Counts

1441 Camino Cerritos S.E.
Albuquerque, New Mexico 87123
(505) 414-0465

Counter: R.C.

File Name : Arroyo Vista & Ladera
Site Code : 04072016
Start Date : 4/7/2016

	Eastbound				Ladera Westbound				Arroyo Vista Northbound				Arroyo Vista Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	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	0	0	0	0	110	0	1	111	1	20	42	63	3	56	0	59	233
07:15 AM	0	0	0	0	119	0	4	123	0	37	49	86	2	46	0	48	257
07:30 AM	0	0	0	0	115	0	1	116	0	32	60	92	1	49	0	50	258
07:45 AM	0	0	0	0	88	0	2	90	1	15	64	80	1	30	0	31	201
Total Volume	0	0	0	0	432	0	8	440	2	104	215	321	7	181	0	188	949
% App. Total	0	0	0		98.2	0	1.8		0.6	32.4	67		3.7	96.3	0		
PHF	.000	.000	.000	.000	.908	.000	.500	.894	.500	.703	.840	.872	.583	.808	.000	.797	.920
Cars	0	0	0	0	431	0	8	439	1	100	213	314	7	180	0	187	940
% Cars	0	0	0	0	99.8	0	100	99.8	50.0	96.2	99.1	97.8	100	99.4	0	99.5	99.1
Trucks	0	0	0	0	0	0	0	0	1	3	0	4	0	0	0	0	4
% Trucks	0	0	0	0	0	0	0	0	50.0	2.9	0	1.2	0	0	0	0	0.4
Buses	0	0	0	0	1	0	0	1	0	1	2	3	0	1	0	1	5
% Buses	0	0	0	0	0.2	0	0	0.2	0	1.0	0.9	0.9	0	0.6	0	0.5	0.5
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	0	0	0	0	39	0	4	43	0	34	110	144	2	24	0	26	213
05:00 PM	0	0	0	0	57	0	2	59	0	46	90	136	3	26	0	29	224
05:15 PM	0	0	0	0	60	0	1	61	1	39	92	132	5	25	0	30	223
05:30 PM	0	0	0	0	51	0	7	58	0	48	97	145	5	33	0	38	241
Total Volume	0	0	0	0	207	0	14	221	1	167	389	557	15	108	0	123	901
% App. Total	0	0	0		93.7	0	6.3		0.2	30	69.8		12.2	87.8	0		
PHF	.000	.000	.000	.000	.863	.000	.500	.906	.250	.870	.884	.960	.750	.818	.000	.809	.935
Cars	0	0	0	0	206	0	14	220	1	167	387	555	15	108	0	123	898
% Cars	0	0	0	0	99.5	0	100	99.5	100	100	99.5	99.6	100	100	0	100	99.7
Trucks	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
% Trucks	0	0	0	0	0	0	0	0	0	0	0.3	0.2	0	0	0	0	0.1
Buses	0	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0	2
% Buses	0	0	0	0	0.5	0	0	0.5	0	0	0.3	0.2	0	0	0	0	0.2

Harwick Transportation Group, Inc.
1440 Camino Cerrito SE
Albuquerque, NM 87123
505-228-9776

Counter: NH

File Name : av-tp
Site Code : 00040716
Start Date : 4/7/2016
Page No : 1

Groups Printed- Cars - Trucks - Buses

	Arroyo Vista Eastbound				Arroyo Vista Westbound				APS Stadium Access Northbound				Tierra Pintada Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:45 AM	0	0	0	0	0	0	33	33	0	0	0	0	41	0	0	41	74
Total	0	0	0	0	0	0	33	33	0	0	0	0	41	0	0	41	74
07:00 AM	0	1	0	1	0	0	20	20	0	0	0	0	65	0	0	65	86
07:15 AM	0	0	0	0	2	3	42	47	0	0	0	0	54	0	0	54	101
07:30 AM	0	0	0	0	0	0	34	34	0	0	0	0	48	0	1	49	83
07:45 AM	0	0	0	0	0	0	17	17	0	0	0	0	31	0	0	31	48
Total	0	1	0	1	2	3	113	118	0	0	0	0	198	0	1	199	318
08:00 AM	1	1	0	2	1	0	20	21	0	1	0	1	25	0	2	27	51
08:15 AM	0	0	0	0	0	0	25	25	0	0	0	0	19	0	0	19	44
08:30 AM	1	0	0	1	0	1	16	17	0	0	0	0	36	0	0	36	54
08:45 AM	0	0	0	0	0	0	16	16	0	0	0	0	23	0	1	24	40
Total	2	1	0	3	1	1	77	79	0	1	0	1	103	0	3	106	189
*** BREAK ***																	
04:00 PM	0	0	0	0	13	1	25	39	0	1	3	4	25	8	1	34	77
04:15 PM	0	3	0	3	11	3	31	45	0	0	1	1	28	4	1	33	82
04:30 PM	0	2	0	2	14	0	34	48	0	0	6	6	17	1	1	19	75
04:45 PM	0	1	0	1	6	1	31	38	0	1	5	6	21	3	0	24	69
Total	0	6	0	6	44	5	121	170	0	2	15	17	91	16	3	110	303
05:00 PM	1	0	0	1	5	0	42	47	0	1	5	6	29	4	2	35	89
05:15 PM	0	4	0	4	6	2	33	41	0	3	7	10	21	1	3	25	80
05:30 PM	2	1	0	3	8	2	39	49	0	5	4	9	28	0	0	28	89
05:45 PM	0	2	0	2	10	4	29	43	0	7	27	34	10	4	1	15	94
Total	3	7	0	10	29	8	143	180	0	16	43	59	88	9	6	103	352
Grand Total	5	15	0	20	76	17	487	580	0	19	58	77	521	25	13	559	1236
Apprch %	25	75	0		13.1	2.9	84		0	24.7	75.3		93.2	4.5	2.3		
Total %	0.4	1.2	0	1.6	6.1	1.4	39.4	46.9	0	1.5	4.7	6.2	42.2	2	1.1	45.2	
Cars	5	15	0	20	76	16	480	572	0	19	58	77	511	25	13	549	1218
% Cars	100	100	0	100	100	94.1	98.6	98.6	0	100	100	100	98.1	100	100	98.2	98.5
Trucks	0	0	0	0	0	1	6	7	0	0	0	0	6	0	0	6	13
% Trucks	0	0	0	0	0	5.9	1.2	1.2	0	0	0	0	1.2	0	0	1.1	1.1
Buses	0	0	0	0	0	0	1	1	0	0	0	0	4	0	0	4	5
% Buses	0	0	0	0	0	0	0.2	0.2	0	0	0	0	0.8	0	0	0.7	0.4

Harwick Transportation Group, Inc.
1440 Camino Cerrito SE
Albuquerque, NM 87123
505-228-9776

File Name : av-tp
Site Code : 00040716
Start Date : 4/7/2016

	Arroyo Vista Eastbound				Arroyo Vista Westbound				APS Stadium Access Northbound				Tierra Pintada Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	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	0	0	0	0	0	0	33	33	0	0	0	0	41	0	0	41	74
07:00 AM	0	1	0	1	0	0	20	20	0	0	0	0	65	0	0	65	86
07:15 AM	0	0	0	0	2	3	42	47	0	0	0	0	54	0	0	54	101
07:30 AM	0	0	0	0	0	0	34	34	0	0	0	0	48	0	1	49	83
Total Volume	0	1	0	1	2	3	129	134	0	0	0	0	208	0	1	209	344
% App. Total	0	100	0		1.5	2.2	96.3		0	0	0		99.5	0	0.5		
PHF	.000	.250	.000	.250	.250	.250	.768	.713	.000	.000	.000	.000	.800	.000	.250	.804	.851
Cars	0	1	0	1	2	2	127	131	0	0	0	0	207	0	1	208	340
% Cars	0	100	0	100	100	66.7	98.4	97.8	0	0	0	0	99.5	0	100	99.5	98.8
Trucks	0	0	0	0	0	1	2	3	0	0	0	0	1	0	0	1	4
% Trucks	0	0	0	0	0	33.3	1.6	2.2	0	0	0	0	0.5	0	0	0.5	1.2
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	1	0	0	1	5	0	42	47	0	1	5	6	29	4	2	35	89
05:15 PM	0	4	0	4	6	2	33	41	0	3	7	10	21	1	3	25	80
05:30 PM	2	1	0	3	8	2	39	49	0	5	4	9	28	0	0	28	89
05:45 PM	0	2	0	2	10	4	29	43	0	7	27	34	10	4	1	15	94
Total Volume	3	7	0	10	29	8	143	180	0	16	43	59	88	9	6	103	352
% App. Total	30	70	0		16.1	4.4	79.4		0	27.1	72.9		85.4	8.7	5.8		
PHF	.375	.438	.000	.625	.725	.500	.851	.918	.000	.571	.398	.434	.759	.563	.500	.736	.936
Cars	3	7	0	10	29	8	143	180	0	16	43	59	87	9	6	102	351
% Cars	100	100	0	100	100	100	100	100	0	100	100	100	98.9	100	100	99.0	99.7
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	1.1	0	0	1.0	0.3
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Cleland Counts

1441 Camino Cerritos S.E.
Albuquerque, New Mexico 87123
(505) 414-0465

Counter: R.C.

File Name : Tierra Pintada & Stormcloud
Site Code : 04062016
Start Date : 4/6/2016
Page No : 1

Groups Printed- Cars - Trucks - Buses

	Eastbound				Stormcloud Westbound				Tierra Pintada Northbound				Tierra Pintada Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	23	0	1	24	0	19	1	20	2	24	0	26	70
07:15 AM	0	0	0	0	21	0	1	22	0	34	2	36	0	24	0	24	82
07:30 AM	0	0	0	0	21	0	4	25	0	31	3	34	1	29	0	30	89
07:45 AM	0	0	0	0	13	0	2	15	0	21	6	27	0	16	0	16	58
Total	0	0	0	0	78	0	8	86	0	105	12	117	3	93	0	96	299
08:00 AM	0	0	0	0	17	0	1	18	0	16	7	23	1	14	0	15	56
08:15 AM	0	0	0	0	7	0	2	9	0	14	2	16	2	10	0	12	37
08:30 AM	0	0	0	0	9	0	0	9	0	12	6	18	1	12	0	13	40
08:45 AM	0	0	0	0	11	0	2	13	0	10	6	16	2	15	0	17	46
Total	0	0	0	0	44	0	5	49	0	52	21	73	6	51	0	57	179
*** BREAK ***																	
04:00 PM	0	0	0	0	1	0	0	1	0	16	9	25	5	28	0	33	59
04:15 PM	0	0	0	0	5	0	0	5	0	13	14	27	2	15	0	17	49
04:30 PM	0	0	0	0	7	0	1	8	0	29	13	42	2	12	0	14	64
04:45 PM	0	0	0	0	6	0	1	7	0	29	10	39	0	16	0	16	62
Total	0	0	0	0	19	0	2	21	0	87	46	133	9	71	0	80	234
05:00 PM	0	0	0	0	8	0	1	9	0	21	18	39	1	19	0	20	68
05:15 PM	0	0	0	0	4	0	1	5	0	22	15	37	1	18	0	19	61
05:30 PM	0	0	0	0	7	0	0	7	0	27	12	39	0	14	0	14	60
05:45 PM	0	0	0	0	5	0	2	7	0	27	10	37	3	15	0	18	62
Total	0	0	0	0	24	0	4	28	0	97	55	152	5	66	0	71	251
Grand Total	0	0	0	0	165	0	19	184	0	341	134	475	23	281	0	304	963
Apprch %	0	0	0		89.7	0	10.3		0	71.8	28.2		7.6	92.4	0		
Total %	0	0	0	0	17.1	0	2	19.1	0	35.4	13.9	49.3	2.4	29.2	0	31.6	
Cars	0	0	0	0	165	0	19	184	0	325	131	456	23	270	0	293	933
% Cars	0	0	0	0	100	0	100	100	0	95.3	97.8	96	100	96.1	0	96.4	96.9
Trucks	0	0	0	0	0	0	0	0	0	14	3	17	0	7	0	7	24
% Trucks	0	0	0	0	0	0	0	0	0	4.1	2.2	3.6	0	2.5	0	2.3	2.5
Buses	0	0	0	0	0	0	0	0	0	2	0	2	0	4	0	4	6
% Buses	0	0	0	0	0	0	0	0	0	0.6	0	0.4	0	1.4	0	1.3	0.6

Cleland Counts

1441 Camino Cerritos S.E.
Albuquerque, New Mexico 87123
(505) 414-0465

Counter: R.C.

File Name : Tierra Pintada & Stormcloud
Site Code : 04062016
Start Date : 4/6/2016

	Eastbound				Stormcloud Westbound				Tierra Pintada Northbound				Tierra Pintada Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	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	0	0	0	0	23	0	1	24	0	19	1	20	2	24	0	26	70
07:15 AM	0	0	0	0	21	0	1	22	0	34	2	36	0	24	0	24	82
07:30 AM	0	0	0	0	21	0	4	25	0	31	3	34	1	29	0	30	89
07:45 AM	0	0	0	0	13	0	2	15	0	21	6	27	0	16	0	16	58
Total Volume	0	0	0	0	78	0	8	86	0	105	12	117	3	93	0	96	299
% App. Total	0	0	0		90.7	0	9.3		0	89.7	10.3		3.1	96.9	0		
PHF	.000	.000	.000	.000	.848	.000	.500	.860	.000	.772	.500	.813	.375	.802	.000	.800	.840
Cars	0	0	0	0	78	0	8	86	0	96	12	108	3	91	0	94	288
% Cars	0	0	0	0	100	0	100	100	0	91.4	100	92.3	100	97.8	0	97.9	96.3
Trucks	0	0	0	0	0	0	0	0	0	8	0	8	0	0	0	0	8
% Trucks	0	0	0	0	0	0	0	0	0	7.6	0	6.8	0	0	0	0	2.7
Buses	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	2	3
% Buses	0	0	0	0	0	0	0	0	0	1.0	0	0.9	0	2.2	0	2.1	1.0
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	7	0	1	8	0	29	13	42	2	12	0	14	64
04:45 PM	0	0	0	0	6	0	1	7	0	29	10	39	0	16	0	16	62
05:00 PM	0	0	0	0	8	0	1	9	0	21	18	39	1	19	0	20	68
05:15 PM	0	0	0	0	4	0	1	5	0	22	15	37	1	18	0	19	61
Total Volume	0	0	0	0	25	0	4	29	0	101	56	157	4	65	0	69	255
% App. Total	0	0	0		86.2	0	13.8		0	64.3	35.7		5.8	94.2	0		
PHF	.000	.000	.000	.000	.781	.000	1.00	.806	.000	.871	.778	.935	.500	.855	.000	.863	.938
Cars	0	0	0	0	25	0	4	29	0	101	56	157	4	63	0	67	253
% Cars	0	0	0	0	100	0	100	100	0	100	100	100	100	96.9	0	97.1	99.2
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	3.1	0	2.9	0.8
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Cleland Counts

1441 Camino Cerritos S.E.
Albuquerque, New Mexico 87123
(505) 414-0465

Counter: R.C., S.R.

File Name : Unser & Tierra Pintada
Site Code : 04052016
Start Date : 4/5/2016
Page No : 1

Groups Printed- Cars - Trucks - Buses

	Tierra Pintada Eastbound				Vista Orienta Westbound				Unser Northbound				Unser Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	28	0	78	106	16	1	1	18	13	179	6	198	9	260	18	287	609
07:15 AM	33	1	87	121	6	1	4	11	9	257	11	277	7	356	26	389	798
07:30 AM	57	4	79	140	12	2	8	22	23	225	30	278	10	369	19	398	838
07:45 AM	35	3	50	88	9	5	7	21	20	213	5	238	13	320	15	348	695
Total	153	8	294	455	43	9	20	72	65	874	52	991	39	1305	78	1422	2940
08:00 AM	19	4	40	63	14	0	11	25	25	160	10	195	7	229	9	245	528
08:15 AM	18	9	42	69	25	0	3	28	16	157	5	178	13	254	14	281	556
08:30 AM	25	7	41	73	51	2	5	58	15	187	9	211	17	200	9	226	568
08:45 AM	22	4	32	58	60	11	6	77	16	148	5	169	9	197	10	216	520
Total	84	24	155	263	150	13	25	188	72	652	29	753	46	880	42	968	2172
*** BREAK ***																	
04:00 PM	17	4	27	48	33	9	20	62	48	250	16	314	8	168	18	194	618
04:15 PM	22	6	33	61	27	6	11	44	47	320	23	390	11	188	24	223	718
04:30 PM	19	4	32	55	42	6	22	70	58	322	21	401	14	192	25	231	757
04:45 PM	26	3	20	49	32	12	25	69	49	334	28	411	9	185	20	214	743
Total	84	17	112	213	134	33	78	245	202	1226	88	1516	42	733	87	862	2836
05:00 PM	28	4	34	66	42	3	26	71	68	293	15	376	18	165	25	208	721
05:15 PM	16	3	26	45	31	7	31	69	62	347	27	436	15	217	24	256	806
05:30 PM	17	5	29	51	30	6	15	51	74	314	21	409	20	184	32	236	747
05:45 PM	20	5	24	49	35	8	15	58	72	282	19	373	16	136	30	182	662
Total	81	17	113	211	138	24	87	249	276	1236	82	1594	69	702	111	882	2936
Grand Total	402	66	674	1142	465	79	210	754	615	3988	251	4854	196	3620	318	4134	10884
Apprch %	35.2	5.8	59		61.7	10.5	27.9		12.7	82.2	5.2		4.7	87.6	7.7		
Total %	3.7	0.6	6.2	10.5	4.3	0.7	1.9	6.9	5.7	36.6	2.3	44.6	1.8	33.3	2.9	38	
Cars	394	66	666	1126	462	78	210	750	612	3949	248	4809	195	3551	307	4053	10738
% Cars	98	100	98.8	98.6	99.4	98.7	100	99.5	99.5	99	98.8	99.1	99.5	98.1	96.5	98	98.7
Trucks	5	0	1	6	0	0	0	0	1	26	2	29	0	31	6	37	72
% Trucks	1.2	0	0.1	0.5	0	0	0	0	0.2	0.7	0.8	0.6	0	0.9	1.9	0.9	0.7
Buses	3	0	7	10	3	1	0	4	2	13	1	16	1	38	5	44	74
% Buses	0.7	0	1	0.9	0.6	1.3	0	0.5	0.3	0.3	0.4	0.3	0.5	1	1.6	1.1	0.7

Cleland Counts

1441 Camino Cerritos S.E.
Albuquerque, New Mexico 87123
(505) 414-0465

Counter: R.C., S.R.

File Name : Unser & Tierra Pintada
Site Code : 04052016
Start Date : 4/5/2016

	Tierra Pintada Eastbound				Vista Orienta Westbound				Unser Northbound				Unser Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 12:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	28	0	78	106	16	1	1	18	13	179	6	198	9	260	18	287	609
07:15 AM	33	1	87	121	6	1	4	11	9	257	11	277	7	356	26	389	798
07:30 AM	57	4	79	140	12	2	8	22	23	225	30	278	10	369	19	398	838
07:45 AM	35	3	50	88	9	5	7	21	20	213	5	238	13	320	15	348	695
Total Volume	153	8	294	455	43	9	20	72	65	874	52	991	39	1305	78	1422	2940
% App. Total	33.6	1.8	64.6		59.7	12.5	27.8		6.6	88.2	5.2		2.7	91.8	5.5		
PHF	.671	.500	.845	.813	.672	.450	.625	.818	.707	.850	.433	.891	.750	.884	.750	.893	.877
Cars	152	8	294	454	43	9	20	72	65	868	50	983	39	1299	75	1413	2922
% Cars	99.3	100	100	99.8	100	100	100	100	100	99.3	96.2	99.2	100	99.5	96.2	99.4	99.4
Trucks	0	0	0	0	0	0	0	0	0	5	2	7	0	3	2	5	12
% Trucks	0	0	0	0	0	0	0	0	0	0.6	3.8	0.7	0	0.2	2.6	0.4	0.4
Buses	1	0	0	1	0	0	0	0	0	1	0	1	0	3	1	4	6
% Buses	0.7	0	0	0.2	0	0	0	0	0	0.1	0	0.1	0	0.2	1.3	0.3	0.2
Peak Hour Analysis From 12:45 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	19	4	32	55	42	6	22	70	58	322	21	401	14	192	25	231	757
04:45 PM	26	3	20	49	32	12	25	69	49	334	28	411	9	185	20	214	743
05:00 PM	28	4	34	66	42	3	26	71	68	293	15	376	18	165	25	208	721
05:15 PM	16	3	26	45	31	7	31	69	62	347	27	436	15	217	24	256	806
Total Volume	89	14	112	215	147	28	104	279	237	1296	91	1624	56	759	94	909	3027
% App. Total	41.4	6.5	52.1		52.7	10	37.3		14.6	79.8	5.6		6.2	83.5	10.3		
PHF	.795	.875	.824	.814	.875	.583	.839	.982	.871	.934	.813	.931	.778	.874	.940	.888	.939
Cars	86	14	112	212	147	28	104	279	237	1289	91	1617	56	743	92	891	2999
% Cars	96.6	100	100	98.6	100	100	100	100	100	99.5	100	99.6	100	97.9	97.9	98.0	99.1
Trucks	2	0	0	2	0	0	0	0	0	3	0	3	0	12	2	14	19
% Trucks	2.2	0	0	0.9	0	0	0	0	0	0.2	0	0.2	0	1.6	2.1	1.5	0.6
Buses	1	0	0	1	0	0	0	0	0	4	0	4	0	4	0	4	9
% Buses	1.1	0	0	0.5	0	0	0	0	0	0.3	0	0.2	0	0.5	0	0.4	0.3

2005 - 2014 Growth Rates

No.	Roadway Segments	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	m	b	R2	Annual Rate	Adjusted Rate
1	Unser Blvd N of Tierra Pintada	17000	26900	27600	27900	19000	19000	19200	19000	18900	22320	-468	24256	0.11	5.6%	5.6%
2	Unser Blvd S of Ladera Dr	35400	36200	37100	28100	28200	30700	30200	33100	35000	35140	-133	33645.3	0.01	-0.1%	-0.1%
3	Ladera Dr W of Unser	1900	1900	8100	8200	8200	6500	6400	6300	6800	6830	379	4027.33	0.24	29.2%	-3.4%
4	Ladera Dr E of Arroyo Vista			2000	5700	6000	6000	6200	6500	6500	6970	482	2600.6	0.57	28.4%	4.1%
5	Arroyo Vista S of Ladera				6300	6300	6300	7000	6900	6900	6890	128	5763.21	0.68	1.8%	1.8%
	Summary	**54300**	**65000**	**74800**	**76200**	**67700**	**68500**	**69000**	**71800**	**74100**	**78150**	**1470**	**61870**	**0.42**	**7.6%**	**1.8%**

The adjusted rate should be considered for the background rate. The adjustments include:

Location 3 years 2005 and 2006 were eliminated.

Locations 4 and 5 years 2005 through 2007 were eliminated.

The final summary rate is the average rate weighted by volume.

The backgoround rate should be 1.8%, but the 2% minimum from the COA will be used in calculations.

Appendix C

Trip Generation, Distribution and Assignments

Trip Generation Summary
Trip Generation Worksheets
Trip Distribution Worksheets
Trip Assignment Worksheets

Trip Generation Summary

Tract	Land Use	Units	No.	ITE LU	Daily	Daily In	Daily Out	AM In	AM Out	PM In	PM Out
1	Elementary School (K-4)	Student	590	520	761	381	381	146	120	44	45
2	Midldle School (5-8)	Student	760	522	1231	616	616	226	184	60	62
	K-8 School Sum				1992	996	996	372	304	104	107
3	Bus Parking *	Spaces	200	SP	1141	571	571	31	18	121	121
4	Health Clinic	SF	4000	630	126	63	63	0	0	9	12
5	Early Childhood Center	Student	400	565	1814	907	907	157	140	119	134
6	High School	Student	2400	530	3514	1757	1757	702	330	103	209
	Sums				**8587**	**4294**	**4294**	**1262**	**792**	**456**	**583**

* Based upon a count at the existing bus storage facility on Menual Blvd.
All trips are primary trips.

Trip Generation Worksheet

Land Use:	**Elementary School**	**520**	
Trip Generation Units:		1	Students
	Project Units:	590	

Trip Generation Equations:

Average Vehicle Trip End on a Weekday

T = 1.29 (X)	
Enter	50%
Exit	50%

Average Vehicle Trip End on a Weekday, AM Peak Hour

T = 0.45 (X)	
Enter	55%
Exit	45%

Average Vehicle Trip End, Peak Hour of Adjacent St Traffic, 4 to 6 PM

T = 0.15 (X)	
Enter	49%
Exit	51%

Daily Trips	**761**
Enter	381
Exit	380
AM Peak Trips	**266**
Enter	146
Exit	120
PM Peak Adjacent Street Traffic Trips	**89**
Enter	44
Exit	45

Trip Generation Worksheet

Land Use:	**Mid-Junior High School**	**522**	
Trip Generation Units:		1	Students
	Project Units:	760	

Trip Generation Equations:

Average Vehicle Trip End on a Weekday

T = 1.62 (X)	
Enter	50%
Exit	50%

Average Vehicle Trip End on a Weekday, AM Peak Hour

T = 0.54 (X)	
Enter	55%
Exit	45%

Average Vehicle Trip End, Peak Hour of Adjacent St Traffic, 4 to 6 PM

T = 0.16 (X)	
Enter	49%
Exit	51%

Daily Trips	**1231**
Enter	616
Exit	615
AM Peak Trips	**410**
Enter	226
Exit	184
PM Peak Adjacent Street Traffic Trips	**122**
Enter	60
Exit	62

Trip Generation Worksheet

Land Use:	**High School**	**530**	
Trip Generation Units:		1	Students
	Project Units:	2400	

Trip Generation Equations:

Average Vehicle Trip End on a Weekday

Ln(T) = 0.81Ln(X) + 1.86	
Enter	50%
Exit	50%

Average Vehicle Trip End on a Weekday, AM Peak Hour

T = 0.43 (X)	
Enter	68%
Exit	32%

Peak Hour of Adjacent St Traffic, 4 to 6 PM

T = 0.13 (X)	
Enter	47%
Exit	53%

Daily Trips	**3514**
Enter	1757
Exit	1757
AM Peak Trips	**1032**
Enter	702
Exit	330
PM Peak Trips	**312**
Enter	103
Exit	209

Trip Generation Worksheet

Land Use:	**Daycare**	**565**	
Trip Generation Units:		1	Student
	Project Units:	400	

Trip Generation Equations:

Average Vehicle Trip End on a Weekday

T = 4.55 (X) - 5.64	
Enter	50%
Exit	50%

Average Peak Hour of Adjacent St, Traffic 7 to 9 AM

T = 0.73 (X) + 5.24	
Enter	53%
Exit	47%

Average Peak Hour of Adjacent St, Traffic 4 to 6 PM

Ln(T) = 0.87 Ln(X) + 0.32	
Enter	47%
Exit	53%

Daily Trips		**1814**
	Enter	907
	Exit	907
AM Peak Trips		**297**
	Enter	157
	Exit	140
PM Peak Trips		**253**
	Enter	119
	Exit	134

Trip Generation Worksheet

Land Use:	**Clinic**	**630**	
Trip Generation Units:		1	1000 SF GFA
	Project Units:	4	

Trip Generation Equations:

Average Vehicle Trip End on a Weekday

T = 31.45 (X)	
Enter	50%
Exit	50%

Average Vehicle Trip End on a Weekday, AM Peak Hour

Enter	
Exit	

Average Vehicle Trip End on a Weekday, PM Peak Hour

T = 5.18 (X)	
Enter	41%
Exit	59%

Daily Trips		**126**
	Enter	63
	Exit	63
AM Peak Trips		
	Enter	0
	Exit	0
PM Peak Trips		**21**
	Enter	9
	Exit	12

Trip Generation Worksheet

Land Use: **APS Bus Storage** **SP-1**

Trip Generation Units:	1	Bus
Project Units:	200	

Trip Generation Equations:

Average Vehicle Trip End on a Weekday

T = 5.705 (X)	
Enter	50%
Exit	50%

Average Peak Hour of Adjacent St, Traffic 7 to 9 AM

T = 0.246 (X)	
Enter	64%
Exit	36%

Average Peak Hour of Adjacent St, Traffic 4 to 6 PM

T = 1.208 (X)	
Enter	50%
Exit	50%

Daily Trips*	**1141**
Enter	571
Exit	570
AM Peak Trips	**49**
Enter	31
Exit	18
PM Peak Trips	**242**
Enter	121
Exit	121

Based on March 24, 2016 study of APS Menaul Bus Facility
* Estimated based on 80% of daily traffic during 7½-hour count.

The new facility will have on-site employee parking. It is estimated that 90% of the buses will generate 2 trips per day per driver.

Tract	Land Use	Units	No.	ITE LU	Daily	Daily In	Daily Out	AM In	AM Out	PM In	PM Out
	Additional Residential Trips										
1	Arkansas Rd	DU	49	210	539	270	270	11	33	35	20
2	Gunnison Rd	DU	149	210	1501	751	751	29	85	95	55
3	Mirehaven Blvd	DU	309*	210	1895	948	948	36	108	119	70
4	Watershed Rd	DU	93	210	973	487	487	19	56	62	36
	Sums				**2868**	**1434**	**1434**	**55**	**164**	**181**	**106**

All trips are primary trips.
Each development is referenced by its cross street that intersects Tierra Pintada.
* The Mirehaven development had at least 117 lots developed prior to counts. This was subtracted from 309, resulting in 192 new lots. Zero existing development assumed on the other subdivisions.

Trip Generation Worksheet

Land Use: **Single Family Detached Housing** **210**

Trip Generation Units:	1	Dwelling Unit
Project Units:	49	

Trip Generation Equations:

Average Vehicle Trip End on a Weekday

Ln(T) = 0.92 Ln(X) + 2.72	
Enter	50%
Exit	50%

Peak Hour of Adjacent St, Traffic 7 to 9 AM

T = 0.70 (X) + 9.74	
Enter	25%
Exit	75%

Peak Hour of Adjacent St Traffic, 4 to 6 PM

Ln(T) = 0.90 Ln(X) + 0.51	
Enter	63%
Exit	37%

Daily Trips	**539**
Enter	270
Exit	269
AM Peak Trips	**44**
Enter	11
Exit	33
PM Peak Trips	**55**
Enter	35
Exit	20

Trip Generation based upon ITE *Trip Generation* , 9th Edition.

Trip Generation Worksheet

Land Use: **Single Family Detached Housing** **210**

Trip Generation Units:	1	Dwelling Unit
Project Units:	149	

Trip Generation Equations:

Average Vehicle Trip End on a Weekday

Ln(T) = 0.92 Ln(X) + 2.72

Enter	50%
Exit	50%

Peak Hour of Adjacent St, Traffic 7 to 9 AM

T = 0.70 (X) + 9.74

Enter	25%
Exit	75%

Peak Hour of Adjacent St Traffic, 4 to 6 PM

Ln(T) = 0.90 Ln(X) + 0.51

Enter	63%
Exit	37%

Daily Trips	**1501**
Enter	751
Exit	750
AM Peak Trips	**114**
Enter	29
Exit	85
PM Peak Trips	**150**
Enter	95
Exit	55

Trip Generation based upon ITE *Trip Generation* , 9th Edition.

Trip Generation Worksheet

Land Use: **Single Family Detached Housing** **210**

Trip Generation Units:	1	Dwelling Unit
Project Units:	192	

Trip Generation Equations:

Average Vehicle Trip End on a Weekday

Ln(T) = 0.92 Ln(X) + 2.72

Enter	50%
Exit	50%

Peak Hour of Adjacent St, Traffic 7 to 9 AM

T = 0.70 (X) + 9.74

Enter	25%
Exit	75%

Peak Hour of Adjacent St Traffic, 4 to 6 PM

Ln(T) = 0.90 Ln(X) + 0.51

Enter	63%
Exit	37%

Daily Trips	**1895**
Enter	948
Exit	947
AM Peak Trips	**144**
Enter	36
Exit	108
PM Peak Trips	**189**
Enter	119
Exit	70

Trip Generation based upon ITE *Trip Generation* , 9th Edition.
117 Lots Developed as of 11/1/2015

Trip Generation Worksheet

Land Use: **Single Family Detached Housing** **210**

Trip Generation Units:	1	Dwelling Unit
Project Units:	93	

Trip Generation Equations:

Average Vehicle Trip End on a Weekday

Ln(T) = 0.92 Ln(X) + 2.72	
Enter	50%
Exit	50%

Peak Hour of Adjacent St, Traffic 7 to 9 AM

T = 0.70 (X) + 9.74	
Enter	25%
Exit	75%

Peak Hour of Adjacent St Traffic, 4 to 6 PM

Ln(T) = 0.90 Ln(X) + 0.51	
Enter	63%
Exit	37%

Daily Trips	**973**
Enter	487
Exit	486
AM Peak Trips	**75**
Enter	19
Exit	56
PM Peak Trips	**98**
Enter	62
Exit	36

Trip Generation based upon ITE *Trip Generation* , 9th Edition.

APS Far NW Education Complex - Trip Dist-Elem

Distribution

AM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera													
Arroyo Vista @ Tierra Pintada	**0.459**											0.459	
Tierra Pintada @ Stormcloud/K-8	**0.459**					**0.341**		**0.2**		0.341	0.2	0.459	
Tierra Pintada @ Unser													
Arroyo Vista @ Multiple Access		**0.459**			0.459								
Arroyo Vista @ High School		**0.459**			0.459								

PM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera													
Arroyo Vista @ Tierra Pintada	**0.459**											0.459	
Tierra Pintada @ Stormcloud/K-8	**0.459**					**0.341**		**0.2**		0.341	0.2	0.459	
Tierra Pintada @ Unser													
Arroyo Vista @ Multiple Access		**0.459**			0.459								
Arroyo Vista @ High School		**0.459**			0.459								

Bold values are entering percentages

Percent From:

Tierra Pintada Corridor	54.1%
Arroyo Vista Corridor West	45.9%

Trips:	**In**	**Out**
AM Peak	146	120
PM Peak	44	45

Assignment

AM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera													
Arroyo Vista @ Tierra Pintada	**67**											55	**122**
Tierra Pintada @ Stormcloud/K-8	**67**					**50**		**29**		41	24	55	**266**
Tierra Pintada @ Unser													
Arroyo Vista @ Multiple Access		**67**			55								**122**
Arroyo Vista @ High School		**67**			55								**122**

PM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera													
Arroyo Vista @ Tierra Pintada	**20**											21	**41**
Tierra Pintada @ Stormcloud	**20**					**15**		**9**		15	9	21	**89**
Tierra Pintada @ Stormcloud/K-8													
Arroyo Vista @ Multiple Access		**20**			21								**41**
Arroyo Vista @ High School		**20**			21								**41**

APS Far NW Education Complex - Trip Dist-MS

Distribution

AM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera						**0.374**				0.374			
Arroyo Vista @ Tierra Pintada	**0.27**					**0.374**				0.374		0.27	
Tierra Pintada @ Stormcloud/K-8	**0.644**					**0.2**		**0.156**		0.2	0.156	0.644	
Tierra Pintada @ Unser		0.03			**0.03**								
Arroyo Vista @ Multiple Access		**0.27**			0.27								
Arroyo Vista @ High School		**0.27**			0.27								

PM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera						**0.374**				0.374			
Arroyo Vista @ Tierra Pintada	**0.27**					**0.374**				0.374		0.27	
Tierra Pintada @ Stormcloud/K-8	**0.644**					**0.2**		**0.156**		0.2	0.156	0.644	
Tierra Pintada @ Unser		0.03			**0.03**								
Arroyo Vista @ Multiple Access		**0.27**			0.27								
Arroyo Vista @ High School		**0.27**			0.27								

Bold values are entering percentages

Percent From:

Tierra Pintada Corridor	35.6%
Arroyo Vista Corridor West	27.0%
Ladera Dr	37.4%

Trips:	**In**	**Out**
AM Peak	226	184
PM Peak	60	62

Assignment

AM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera						**85**				69			**154**
Arroyo Vista @ Tierra Pintada	**61**					**85**				69		50	**265**
Tierra Pintada @ Stormcloud/K-8	**146**					**45**		**35**		37	29	118	**410**
Tierra Pintada @ Unser		6			**7**								**13**
Arroyo Vista @ Multiple Access		**61**			50								**111**
Arroyo Vista @ High School		**61**			50								**111**

PM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera						**22**				23			**45**
Arroyo Vista @ Tierra Pintada	**16**					**22**				23		17	**78**
Tierra Pintada @ Stormcloud/K-8	**39**					**12**		**9**		12	10	40	**122**
Tierra Pintada @ Stormcloud		2			**2**								**4**
Arroyo Vista @ Multiple Access		**16**			17								**33**
Arroyo Vista @ High School		**16**			17								**33**

APS Far NW Education Complex - Trip Dist-ECE

Distribution

AM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera						**0.168**				0.168			
Arroyo Vista @ Tierra Pintada	0.211	0.168			**0.168**							**0.211**	
Tierra Pintada @ Stormcloud/K-8		0.161	0.05		**0.161**		**0.05**						
Tierra Pintada @ Unser	0.051	0.017			**0.017**							**0.051**	
Arroyo Vista @ Multiple Access	**0.62**					**0.379**				0.379		0.62	
Arroyo Vista @ High School		**0.62**			0.62								

PM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera						**0.168**				0.168			
Arroyo Vista @ Tierra Pintada	0.211	0.168			**0.168**							**0.211**	
Tierra Pintada @ Stormcloud/K-8		0.161	0.05		**0.161**		**0.05**						
Tierra Pintada @ Unser	0.051	0.017			**0.017**							**0.051**	
Arroyo Vista @ Multiple Access	**0.62**					**0.379**				0.379		0.62	
Arroyo Vista @ High School		**0.62**			0.62								

Bold values are entering percentages

Percent From:

Tierra Pintada Corridor	14.3%
Arroyo Vista Corridor West	62.0%
Unser Blvd North	5.1%
Ladera Dr	16.8%
Vista Oriente	1.7%

Trips:	**In**	**Out**
AM Peak	157	140
PM Peak	119	134

Assignment

AM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera						**26**				24			**50**
Arroyo Vista @ Tierra Pintada	30	24			**26**							**33**	**113**
Tierra Pintada @ Stormcloud/K-8		23	7		**25**		**8**						**63**
Tierra Pintada @ Unser	7	2			**3**							**8**	**20**
Arroyo Vista @ Multiple Access	**97**					**60**				53		87	**297**
Arroyo Vista @ High School		**97**			87								**184**

PM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera						**20**				23			**43**
Arroyo Vista @ Tierra Pintada	28	23			**20**							**25**	**96**
Tierra Pintada @ Stormcloud/K-8		22	7		**19**		**6**						**54**
Tierra Pintada @ Stormcloud	7	2			**2**							**6**	**17**
Arroyo Vista @ Multiple Access	**74**					**45**				51		83	**253**
Arroyo Vista @ High School		**74**			83								**157**

APS Far NW Education Complex - Trip Dist-HS

Distribution

AM Peak	Eastbound			Westbound			Northbound			Southbound			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera						**0.168**				0.168			
Arroyo Vista @ Tierra Pintada	0.211	0.168			**0.168**							**0.211**	
Tierra Pintada @ Stormcloud/K-8		0.161	0.05		**0.161**		**0.05**						
Tierra Pintada @ Unser	0.051	0.017			**0.017**							**0.051**	
Arroyo Vista @ Multiple Access		0.379			**0.379**								
Arroyo Vista @ High School	**0.62**					**0.379**				0.379		0.62	

PM Peak	Eastbound			Westbound			Northbound			Southbound			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera						**0.168**				0.168			
Arroyo Vista @ Tierra Pintada	0.211	0.168			**0.168**							**0.211**	
Tierra Pintada @ Stormcloud/K-8		0.161	0.05		**0.161**		**0.05**						
Tierra Pintada @ Unser	0.051	0.017			**0.017**							**0.051**	
Arroyo Vista @ Multiple Access		0.379			**0.379**								
Arroyo Vista @ High School	**0.62**					**0.379**				0.379		0.62	

Bold values are entering percentages

Percent From:

Tierra Pintada Corridor	14.3%
Arroyo Vista Corridor West	62.0%
Unser Blvd North	5.1%
Ladera Dr	16.8%
Vista Oriente	1.7%

Trips:	**In**	**Out**
AM Peak	702	330
PM Peak	103	209

Assignment

AM Peak	Eastbound			Westbound			Northbound			Southbound			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera						**118**				55			**173**
Arroyo Vista @ Tierra Pintada	70	55			**118**							**148**	**391**
Tierra Pintada @ Stormcloud/K-8		53	17		**113**		**35**						**218**
Tierra Pintada @ Unser	17	6			**12**							**36**	**71**
Arroyo Vista @ Multiple Access		125			**266**								**391**
Arroyo Vista @ High School	**435**					**266**				125		205	**1031**

PM Peak	Eastbound			Westbound			Northbound			Southbound			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera						**17**				35			**52**
Arroyo Vista @ Tierra Pintada	44	35			**17**							**22**	**118**
Tierra Pintada @ Stormcloud/K-8		34	10		**17**		**5**						**66**
Tierra Pintada @ Stormcloud	11	4			**2**							**5**	**22**
Arroyo Vista @ Multiple Access		79			**39**								**118**
Arroyo Vista @ High School	**64**					**39**				79		130	**312**

APS Far NW Education Complex - Trip Dist-Other

Distribution

AM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera						**0.042**		**0.875**		*0.042*	0.875		
Arroyo Vista @ Tierra Pintada	*0.041*	*0.917*			**0.917**							**0.041**	
Tierra Pintada @ Stormcloud/K-8		0.031	0.01		**0.031**		**0.01**						
Tierra Pintada @ Unser	*0.027*											**0.027**	
Arroyo Vista @ Multiple Access	**0.042**					**0.958**				0.958		*0.042*	
Arroyo Vista @ High School		**0.042**			0.042								

PM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera						**0.042**		**0.875**		*0.042*	0.875		
Arroyo Vista @ Tierra Pintada	*0.041*	*0.917*			**0.917**							**0.041**	
Tierra Pintada @ Stormcloud/K-8		0.031	0.01		**0.031**		**0.01**						
Tierra Pintada @ Unser	*0.027*											**0.027**	
Arroyo Vista @ Multiple Access	**0.042**					**0.958**				0.958		*0.042*	
Arroyo Vista @ High School		**0.042**			0.042								

Bold values are entering percentages

Percent From:

Arroyo Vista Corridor West	4.2%
Tierra Pintada Corridor	1.4%
Ladera Dr	4.2%
Arroyo Vista/98th	40.4%
I-40 East	47.1%
Unser North	2.7%

Trips:	**In**	**Out**
AM Peak	31	18
PM Peak	130	133

Assignment

AM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera						**1**		**27**		1	16		**45**
Arroyo Vista @ Tierra Pintada	1	17			**28**							**1**	**47**
Tierra Pintada @ Stormcloud/K-8		1			**1**								**2**
Tierra Pintada @ Unser												**1**	**1**
Arroyo Vista @ Multiple Access	**1**					**30**				17		1	**49**
Arroyo Vista @ High School		**1**			1								**2**

PM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera						**5**		**114**		6	116		**241**
Arroyo Vista @ Tierra Pintada	5	122			**119**							**5**	**251**
Tierra Pintada @ Stormcloud/K-8		4	1		**4**		**1**						**10**
Tierra Pintada @ Stormcloud	4											**4**	**8**
Arroyo Vista @ Multiple Access	**5**					**125**				127		6	**263**
Arroyo Vista @ High School		**5**			6								**11**

APS Far NW Education Complex - Trip Assignment

AM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera						230		27		149	16		**422**
Arroyo Vista @ Tierra Pintada	229	96			172	85				69		287	**938**
Tierra Pintada @ Stormcloud/K-8	213	77	24		139	95	43	64		78	53	173	**959**
Tierra Pintada @ Unser	24	14			22							45	**105**
Arroyo Vista @ Multiple Access	98	253			371	90				70		88	**970**
Arroyo Vista @ High School	435	226			193	266				125		205	**1450**

PM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera						64		114		87	116		**381**
Arroyo Vista @ Tierra Pintada	113	180			156	22				23		90	**584**
Tierra Pintada @ Stormcloud/K-8	59	60	18		40	27	12	18		27	19	61	**341**
Tierra Pintada @ Unser	22	8			6							15	**51**
Arroyo Vista @ Multiple Access	79	115			77	170				178		89	**708**
Arroyo Vista @ High School	64	115			127	39				79		130	**554**

APS Far NW Education Complex - Additional Vols

AM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera								**6**			16		**22**
Arroyo Vista @ Tierra Pintada									**6**	16			**22**
Tierra Pintada @ Stormcloud/K-8		**6**			16								**22**
Tierra Pintada @ Unser	52		95				**32**					**18**	**197**
Arroyo Vista @ Multiple Access													**0**
Arroyo Vista @ High School													**0**

PM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera								**18**			11		**29**
Arroyo Vista @ Tierra Pintada									**18**	11			**29**
Tierra Pintada @ Stormcloud/K-8		**18**			11								**29**
Tierra Pintada @ Unser	34		61				**105**					**58**	**258**
Arroyo Vista @ Multiple Access													**0**
Arroyo Vista @ High School													**0**

Bold values are entering percentages

Trips:	**Enter**	**Exit**
AM Peak	55	164
PM Peak	181	106

APS Far NW Education Complex - Additional Vols Dist

AM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera								**0.1**			0.1		
Arroyo Vista @ Tierra Pintada									**0.1**	0.1			
Tierra Pintada @ Stormcloud/K-8		**0.1**			0.1								
Tierra Pintada @ Unser	0.32		0.58				**0.58**					**0.32**	
Arroyo Vista @ Multiple Access													
Arroyo Vista @ High School													

PM Peak	**Eastbound**			**Westbound**			**Northbound**			**Southbound**			
Intersection	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**LT**	**TH**	**RT**	**Sum**
Arroyo Vista @ Ladera								**0.1**			0.1		
Arroyo Vista @ Tierra Pintada									**0.1**	0.1			
Tierra Pintada @ Stormcloud/K-8		**0.1**			0.1								
Tierra Pintada @ Unser	0.32		0.58				**0.58**					**0.32**	
Arroyo Vista @ Multiple Access													
Arroyo Vista @ High School													

Bold values are entering percentages

Appendix D

Existing Level of Service Analyses

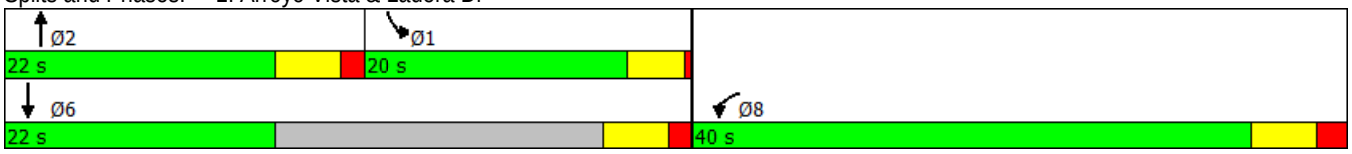
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	432	8	104	215	7	181
Future Volume (vph)	432	8	104	215	7	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	275		225	350	
Storage Lanes	2	1		1	2	
Taper Length (ft)	25				25	
Satd. Flow (prot)	3433	1583	5085	1583	3433	5085
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3433	1583	5085	1583	3433	5085
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		9		247		
Link Speed (mph)	30		30			30
Link Distance (ft)	632		711			1714
Travel Time (s)	14.4		16.2			39.0
Peak Hour Factor	0.89	0.89	0.87	0.87	0.80	0.80
Adj. Flow (vph)	485	9	120	247	9	226
Shared Lane Traffic (%)						
Lane Group Flow (vph)	485	9	120	247	9	226
Turn Type	Prot	Free	NA	Free	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		Free		Free		
Detector Phase	8		2		1	6
Switch Phase						
Minimum Initial (s)	16.0		8.0		3.0	8.0
Minimum Split (s)	40.0		22.0		11.0	22.0
Total Split (s)	40.0		22.0		20.0	22.0
Total Split (%)	48.8%		26.8%		24.4%	26.8%
Yellow Time (s)	4.0		4.0		3.5	4.0
All-Red Time (s)	2.0		1.5		0.5	1.5
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	6.0		5.5		4.0	5.5
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		Max		None	Max
Act Effct Green (s)	16.7	55.9	26.2	55.9	4.2	27.6
Actuated g/C Ratio	0.30	1.00	0.47	1.00	0.08	0.49
v/c Ratio	0.47	0.01	0.05	0.16	0.04	0.09
Control Delay	18.2	0.0	9.2	0.2	26.3	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.2	0.0	9.2	0.2	26.3	7.6
LOS	B	A	A	A	C	A
Approach Delay	17.9		3.2			8.3
Approach LOS	B		A			A
Queue Length 50th (ft)	63	0	6	0	1	12
Queue Length 95th (ft)	119	0	19	0	7	21
Internal Link Dist (ft)	552		631			1634
Turn Bay Length (ft)		275		225	350	
Base Capacity (vph)	2102	1583	2381	1583	989	3343

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.01	0.05	0.16	0.01	0.07

Intersection Summary

Area Type:	Other		
Cycle Length: 82			
Actuated Cycle Length: 55.9			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 10.9		Intersection LOS: B	
Intersection Capacity Utilization 29.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Arroyo Vista & Ladera Dr

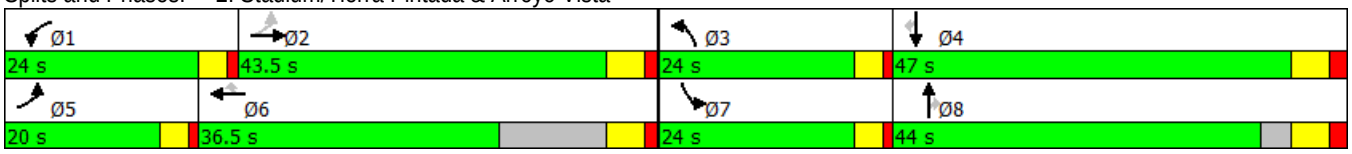


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1	0	2	3	129	0	0	0	208	0	1
Future Volume (vph)	0	1	0	2	3	129	0	0	0	208	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		0	375		275	175		175	325		0
Storage Lanes	1		0	2		1	1		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1863	5085	0	3433	5085	1583	1863	1863	1863	3433	1863	1583
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	1863	5085	0	3433	5085	1583	1863	1863	1863	3433	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						182						1082
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		956			1714			411			945	
Travel Time (s)		21.7			39.0			9.3			21.5	
Peak Hour Factor	0.25	0.25	0.25	0.71	0.71	0.71	0.75	0.75	0.75	0.80	0.80	0.80
Adj. Flow (vph)	0	4	0	3	4	182	0	0	0	260	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	3	4	182	0	0	0	260	0	1
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2					6			8			4
Detector Phase	5	2		1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0	8.0	3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	11.0	43.5		11.0	36.5	36.5	11.0	44.0	44.0	11.0	47.0	47.0
Total Split (s)	20.0	43.5		24.0	36.5	36.5	24.0	44.0	44.0	24.0	47.0	47.0
Total Split (%)	14.4%	31.4%		17.3%	26.4%	26.4%	17.3%	31.8%	31.8%	17.3%	33.9%	33.9%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.5		1.0	1.5	1.5	1.0	2.0	2.0	1.0	2.0	2.0
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)	4.0	5.5		4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max		None	Max	Max	None	None	None	Max	None	None
Act Effct Green (s)		38.2		6.6	40.1	40.1				20.1		18.1
Actuated g/C Ratio		0.55		0.09	0.58	0.58				0.29		0.26
v/c Ratio		0.00		0.01	0.00	0.18				0.26		0.00
Control Delay		9.0		30.5	6.0	1.6				20.7		0.0
Queue Delay		0.0		0.0	0.0	0.0				0.0		0.0
Total Delay		9.0		30.5	6.0	1.6				20.7		0.0
LOS		A		C	A	A				C		A
Approach Delay		9.0			2.1							
Approach LOS		A			A							
Queue Length 50th (ft)		0		0	0	0				41		0
Queue Length 95th (ft)		0		3	1	9				73		0
Internal Link Dist (ft)		876			1634			331			865	
Turn Bay Length (ft)				375		275				325		
Base Capacity (vph)		2783		989	3165	1053				989		1378

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0		0	0	0				0		0
Spillback Cap Reductn		0		0	0	0				0		0
Storage Cap Reductn		0		0	0	0				0		0
Reduced v/c Ratio		0.00		0.00	0.00	0.17				0.26		0.00

Intersection Summary			
Area Type:	Other		
Cycle Length: 138.5			
Actuated Cycle Length: 69.7			
Natural Cycle: 115			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.26			
Intersection Signal Delay: 12.8		Intersection LOS: B	
Intersection Capacity Utilization 29.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Stadium/Tierra Pintada & Arroyo Vista

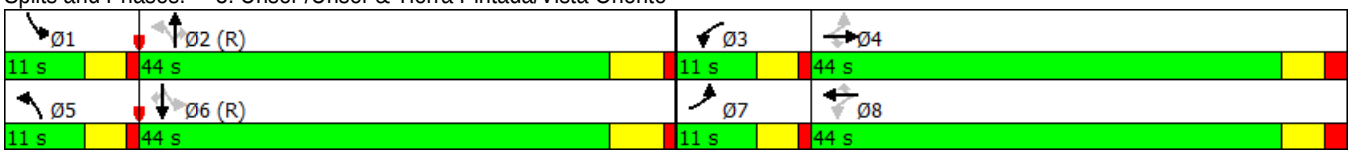


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	153	8	294	43	9	20	65	874	52	39	1305	78
Future Volume (vph)	153	8	294	43	9	20	65	874	52	39	1305	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	250		0	475		325	425		425
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.539			0.751			0.130			0.257		
Satd. Flow (perm)	1004	1863	1583	1399	1863	1583	242	5085	1583	479	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			254			114			114			114
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3973			530			828			831	
Travel Time (s)		90.3			12.0			18.8			18.9	
Peak Hour Factor	0.81	0.81	0.81	0.82	0.82	0.82	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	189	10	363	52	11	24	73	982	58	44	1466	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	189	10	363	52	11	24	73	982	58	44	1466	88
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	3.0	8.0	8.0	3.0	8.0	8.0	3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	11.0	44.0	44.0	11.0	44.0	44.0	11.0	33.5	33.5	11.0	35.5	35.5
Total Split (s)	11.0	44.0	44.0	11.0	44.0	44.0	11.0	44.0	44.0	11.0	44.0	44.0
Total Split (%)	10.0%	40.0%	40.0%	10.0%	40.0%	40.0%	10.0%	40.0%	40.0%	10.0%	40.0%	40.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.5	4.5	3.5	4.5	4.5
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	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	0.0
Total Lost Time (s)	4.5	5.5	5.5	4.5	5.5	5.5	4.5	5.5	5.5	4.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	21.8	14.8	14.8	17.9	14.7	14.7	73.6	67.7	67.7	72.3	67.1	67.1
Actuated g/C Ratio	0.20	0.13	0.13	0.16	0.13	0.13	0.67	0.62	0.62	0.66	0.61	0.61
v/c Ratio	0.71	0.04	0.84	0.21	0.04	0.08	0.30	0.31	0.06	0.12	0.47	0.09
Control Delay	52.3	36.8	31.2	33.2	36.9	0.5	11.0	12.5	0.1	8.6	14.9	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	36.8	31.2	33.2	36.9	0.5	11.0	12.5	0.1	8.6	14.9	1.9
LOS	D	D	C	C	D	A	B	B	A	A	B	A
Approach Delay		38.4			24.6			11.8			14.0	
Approach LOS		D			C			B			B	
Queue Length 50th (ft)	115	6	75	29	7	0	15	120	0	9	206	0
Queue Length 95th (ft)	140	18	125	48	19	0	41	195	1	28	326	17
Internal Link Dist (ft)		3893			450			748			751	
Turn Bay Length (ft)	200			250			475		325	425		425
Base Capacity (vph)	265	652	719	258	652	628	257	3131	1018	395	3101	1010

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.02	0.50	0.20	0.02	0.04	0.28	0.31	0.06	0.11	0.47	0.09

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 17.6		Intersection LOS: B	
Intersection Capacity Utilization 59.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 3: Unser /Unser & Tierra Pintada/Vista Oriente

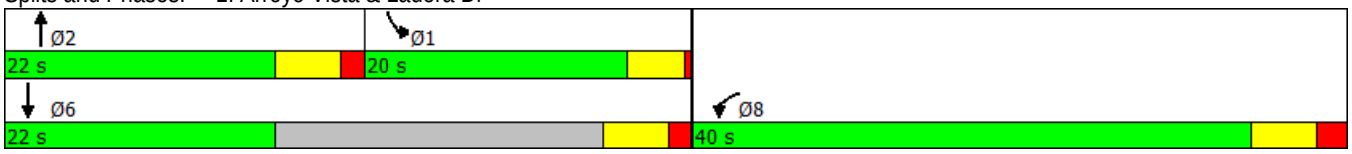


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	207	14	167	389	15	108
Future Volume (vph)	207	14	167	389	15	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	275		225	350	
Storage Lanes	2	1		1	2	
Taper Length (ft)	25				25	
Satd. Flow (prot)	3433	1583	5085	1583	3433	5085
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3433	1583	5085	1583	3433	5085
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		15		405		
Link Speed (mph)	30		30			30
Link Distance (ft)	632		711			1714
Travel Time (s)	14.4		16.2			39.0
Peak Hour Factor	0.91	0.91	0.96	0.96	0.81	0.81
Adj. Flow (vph)	227	15	174	405	19	133
Shared Lane Traffic (%)						
Lane Group Flow (vph)	227	15	174	405	19	133
Turn Type	Prot	Free	NA	Free	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		Free		Free		
Detector Phase	8		2		1	6
Switch Phase						
Minimum Initial (s)	16.0		8.0		3.0	8.0
Minimum Split (s)	40.0		22.0		11.0	22.0
Total Split (s)	40.0		22.0		20.0	22.0
Total Split (%)	48.8%		26.8%		24.4%	26.8%
Yellow Time (s)	4.0		4.0		3.5	4.0
All-Red Time (s)	2.0		1.5		0.5	1.5
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	6.0		5.5		4.0	5.5
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		Max		None	Max
Act Effct Green (s)	16.1	57.6	28.2	57.6	4.3	29.9
Actuated g/C Ratio	0.28	1.00	0.49	1.00	0.07	0.52
v/c Ratio	0.24	0.01	0.07	0.26	0.07	0.05
Control Delay	16.8	0.0	8.7	0.4	25.5	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.8	0.0	8.7	0.4	25.5	6.9
LOS	B	A	A	A	C	A
Approach Delay	15.7		2.9			9.2
Approach LOS	B		A			A
Queue Length 50th (ft)	27	0	9	0	3	7
Queue Length 95th (ft)	60	0	25	0	11	12
Internal Link Dist (ft)	552		631			1634
Turn Bay Length (ft)		275		225	350	
Base Capacity (vph)	2042	1583	2493	1583	961	3263

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.01	0.07	0.26	0.02	0.04

Intersection Summary			
Area Type:	Other		
Cycle Length: 82			
Actuated Cycle Length: 57.6			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.26			
Intersection Signal Delay: 7.1		Intersection LOS: A	
Intersection Capacity Utilization 29.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Arroyo Vista & Ladera Dr

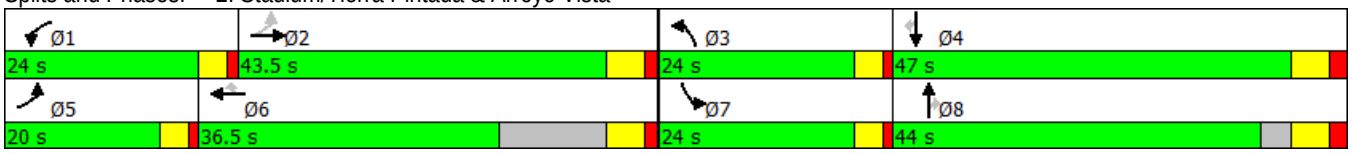


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	7	0	29	8	143	0	16	43	88	9	6
Future Volume (vph)	3	7	0	29	8	143	0	16	43	88	9	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		0	375		275	175		175	325		0
Storage Lanes	1		0	2		1	1		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	5085	0	3433	5085	1583	1863	1863	1583	3433	1863	1583
Flt Permitted	0.751			0.950						0.950		
Satd. Flow (perm)	1399	5085	0	3433	5085	1583	1863	1863	1583	3433	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						155			100			83
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		956			1714			411			945	
Travel Time (s)		21.7			39.0			9.3			21.5	
Peak Hour Factor	0.63	0.63	0.63	0.92	0.92	0.92	0.43	0.43	0.43	0.74	0.74	0.74
Adj. Flow (vph)	5	11	0	32	9	155	0	37	100	119	12	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	11	0	32	9	155	0	37	100	119	12	8
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2					6			8			4
Detector Phase	5	2		1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0	8.0	3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	11.0	43.5		11.0	36.5	36.5	11.0	44.0	44.0	11.0	47.0	47.0
Total Split (s)	20.0	43.5		24.0	36.5	36.5	24.0	44.0	44.0	24.0	47.0	47.0
Total Split (%)	14.4%	31.4%		17.3%	26.4%	26.4%	17.3%	31.8%	31.8%	17.3%	33.9%	33.9%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.5		1.0	1.5	1.5	1.0	2.0	2.0	1.0	2.0	2.0
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)	4.0	5.5		4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max		None	Max	Max	None	None	None	Max	None	None
Act Effct Green (s)	42.1	38.1		7.4	43.3	43.3		16.1	16.1	20.1	40.1	40.1
Actuated g/C Ratio	0.44	0.39		0.08	0.45	0.45		0.17	0.17	0.21	0.42	0.42
v/c Ratio	0.01	0.01		0.12	0.00	0.19		0.12	0.29	0.17	0.02	0.01
Control Delay	12.7	20.0		44.3	15.6	3.6		37.5	10.3	33.5	19.0	0.0
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	20.0		44.3	15.6	3.6		37.5	10.3	33.5	19.0	0.0
LOS	B	B		D	B	A		D	B	C	B	A
Approach Delay		17.7			10.8			17.6			30.3	
Approach LOS		B			B			B			C	
Queue Length 50th (ft)	2	1		10	1	0		21	0	32	5	0
Queue Length 95th (ft)	5	4		25	4	38		23	0	47	13	0
Internal Link Dist (ft)		876			1634			331			865	
Turn Bay Length (ft)	350			375		275			175	325		
Base Capacity (vph)	733	2007		713	2371	821		793	731	713	793	722

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0	0		0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0		0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0		0	0	0	0	0
Reduced v/c Ratio	0.01	0.01		0.04	0.00	0.19		0.05	0.14	0.17	0.02	0.01

Intersection Summary			
Area Type:	Other		
Cycle Length: 138.5			
Actuated Cycle Length: 96.6			
Natural Cycle: 115			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.29			
Intersection Signal Delay: 18.5		Intersection LOS: B	
Intersection Capacity Utilization 38.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Stadium/Tierra Pintada & Arroyo Vista

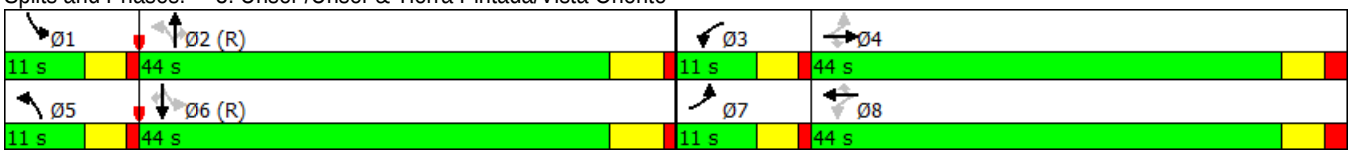


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	14	112	147	28	104	237	1296	91	56	759	94
Future Volume (vph)	89	14	112	147	28	104	237	1296	91	56	759	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	250		0	475		325	425		425
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.738			0.729			0.277			0.175		
Satd. Flow (perm)	1375	1863	1583	1358	1863	1583	516	5085	1583	326	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			138			114			114			114
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3973			530			828			831	
Travel Time (s)		90.3			12.0			18.8			18.9	
Peak Hour Factor	0.81	0.81	0.81	0.98	0.98	0.98	0.93	0.93	0.93	0.89	0.89	0.89
Adj. Flow (vph)	110	17	138	150	29	106	255	1394	98	63	853	106
Shared Lane Traffic (%)												
Lane Group Flow (vph)	110	17	138	150	29	106	255	1394	98	63	853	106
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	3.0	8.0	8.0	3.0	8.0	8.0	3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	11.0	44.0	44.0	11.0	44.0	44.0	11.0	33.5	33.5	11.0	35.5	35.5
Total Split (s)	11.0	44.0	44.0	11.0	44.0	44.0	11.0	44.0	44.0	11.0	44.0	44.0
Total Split (%)	10.0%	40.0%	40.0%	10.0%	40.0%	40.0%	10.0%	40.0%	40.0%	10.0%	40.0%	40.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.5	4.5	3.5	4.5	4.5
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	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	0.0
Total Lost Time (s)	4.5	5.5	5.5	4.5	5.5	5.5	4.5	5.5	5.5	4.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	15.9	8.6	8.6	16.3	8.8	8.8	80.4	71.4	71.4	68.9	62.7	62.7
Actuated g/C Ratio	0.14	0.08	0.08	0.15	0.08	0.08	0.73	0.65	0.65	0.63	0.57	0.57
v/c Ratio	0.50	0.12	0.55	0.67	0.20	0.46	0.50	0.42	0.09	0.23	0.29	0.11
Control Delay	47.6	48.4	16.8	56.4	50.2	14.6	8.2	10.3	1.5	7.1	12.7	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.6	48.4	16.8	56.4	50.2	14.6	8.2	10.3	1.5	7.1	12.7	2.2
LOS	D	D	B	E	D	B	A	B	A	A	B	A
Approach Delay		31.6			40.2			9.5			11.2	
Approach LOS		C			D			A			B	
Queue Length 50th (ft)	68	11	0	96	20	0	48	164	0	10	106	0
Queue Length 95th (ft)	105	30	43	155	48	47	83	222	16	24	139	21
Internal Link Dist (ft)		3893			450			748			751	
Turn Bay Length (ft)	200			250			475		325	425		425
Base Capacity (vph)	224	652	643	224	652	628	515	3300	1067	295	2900	952

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.03	0.21	0.67	0.04	0.17	0.50	0.42	0.09	0.21	0.29	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 14.4		Intersection LOS: B	
Intersection Capacity Utilization 56.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 3: Unser /Unser & Tierra Pintada/Vista Oriente



Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	105	12	3	93	0	78	0	8	0	0	0
Future Vol, veh/h	0	105	12	3	93	0	78	0	8	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	175	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	80	80	80	86	86	86	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	130	15	4	116	0	91	0	9	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	116	0	0	144	0	0	203	261	72
Stage 1	-	-	-	-	-	-	137	137	-
Stage 2	-	-	-	-	-	-	66	124	-
Critical Hdwy	4.14	-	-	4.14	-	-	6.84	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32
Pot Cap-1 Maneuver	1470	-	-	1436	-	-	767	643	975
Stage 1	-	-	-	-	-	-	875	782	-
Stage 2	-	-	-	-	-	-	949	792	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1470	-	-	1436	-	-	765	0	975
Mov Cap-2 Maneuver	-	-	-	-	-	-	765	0	-
Stage 1	-	-	-	-	-	-	875	0	-
Stage 2	-	-	-	-	-	-	946	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	781	1470	-	-	1436	-	-
HCM Lane V/C Ratio	0.128	-	-	-	0.003	-	-
HCM Control Delay (s)	10.3	0	-	-	7.5	-	-
HCM Lane LOS	B	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	101	56	4	65	0	25	0	4	0	0	0
Future Vol, veh/h	0	101	56	4	65	0	25	0	4	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	175	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	86	86	86	81	81	81	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	107	60	5	76	0	31	0	5	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	76	0	0	167	0	0	184	222	84
Stage 1	-	-	-	-	-	-	137	137	-
Stage 2	-	-	-	-	-	-	47	85	-
Critical Hdwy	4.14	-	-	4.14	-	-	6.84	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32
Pot Cap-1 Maneuver	1521	-	-	1408	-	-	788	676	958
Stage 1	-	-	-	-	-	-	875	782	-
Stage 2	-	-	-	-	-	-	970	824	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1521	-	-	1408	-	-	785	0	958
Mov Cap-2 Maneuver	-	-	-	-	-	-	785	0	-
Stage 1	-	-	-	-	-	-	875	0	-
Stage 2	-	-	-	-	-	-	967	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	805	1521	-	-	1408	-	-
HCM Lane V/C Ratio	0.044	-	-	-	0.003	-	-
HCM Control Delay (s)	9.7	0	-	-	7.6	-	-
HCM Lane LOS	A	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-

Appendix E

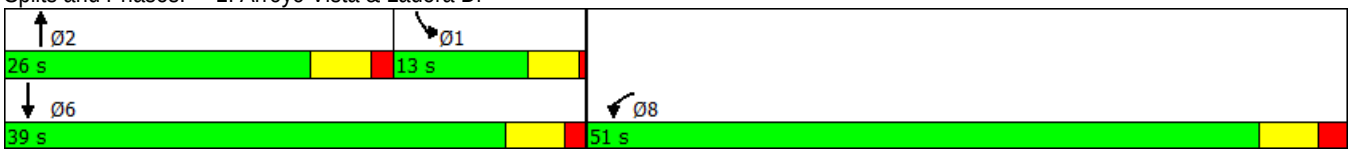
2021 Baseline Level of Service Analyses

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	480	10	120	240	10	220
Future Volume (vph)	480	10	120	240	10	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	275		225	350	
Storage Lanes	2	1		1	2	
Taper Length (ft)	25				25	
Satd. Flow (prot)	3433	1583	5085	1583	3433	5085
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3433	1583	5085	1583	3433	5085
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		11		276		
Link Speed (mph)	30		30			30
Link Distance (ft)	632		711			1714
Travel Time (s)	14.4		16.2			39.0
Peak Hour Factor	0.89	0.89	0.87	0.87	0.80	0.80
Adj. Flow (vph)	539	11	138	276	13	275
Shared Lane Traffic (%)						
Lane Group Flow (vph)	539	11	138	276	13	275
Turn Type	Prot	Free	NA	Free	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		Free		Free		
Detector Phase	8		2		1	6
Switch Phase						
Minimum Initial (s)	16.0		8.0		3.0	8.0
Minimum Split (s)	40.0		22.0		11.0	22.0
Total Split (s)	51.0		26.0		13.0	39.0
Total Split (%)	56.7%		28.9%		14.4%	43.3%
Yellow Time (s)	4.0		4.0		3.5	4.0
All-Red Time (s)	2.0		1.5		0.5	1.5
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	6.0		5.5		4.0	5.5
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		Max		None	Max
Act Effct Green (s)	17.2	62.5	32.1	62.5	4.3	33.8
Actuated g/C Ratio	0.28	1.00	0.51	1.00	0.07	0.54
v/c Ratio	0.57	0.01	0.05	0.17	0.06	0.10
Control Delay	22.1	0.0	9.0	0.2	28.7	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.1	0.0	9.0	0.2	28.7	7.4
LOS	C	A	A	A	C	A
Approach Delay	21.7		3.2			8.3
Approach LOS	C		A			A
Queue Length 50th (ft)	89	0	7	0	2	16
Queue Length 95th (ft)	132	0	22	0	9	27
Internal Link Dist (ft)	552		631			1634
Turn Bay Length (ft)		275		225	350	
Base Capacity (vph)	2473	1583	2613	1583	494	2746

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.01	0.05	0.17	0.03	0.10

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 62.5			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 12.5		Intersection LOS: B	
Intersection Capacity Utilization 29.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Arroyo Vista & Ladera Dr

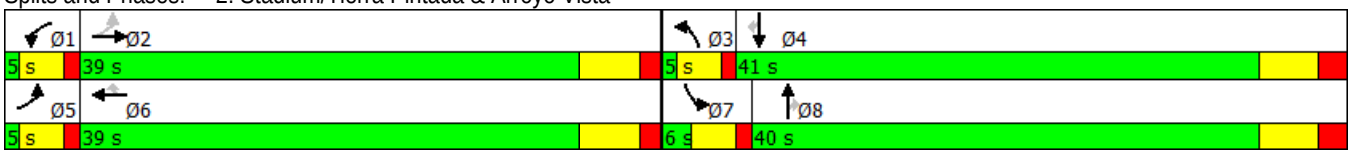


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1	0	2	3	140	0	0	10	250	0	1
Future Volume (vph)	0	1	0	2	3	140	0	0	10	250	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		0	375		275	175		175	325		0
Storage Lanes	1		0	2		1	1		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1863	5085	0	3433	5085	1583	1863	1863	1583	3433	1863	1583
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	1863	5085	0	3433	5085	1583	1863	1863	1583	3433	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						197			1046			1077
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		956			1714			411			945	
Travel Time (s)		21.7			39.0			9.3			21.5	
Peak Hour Factor	0.25	0.25	0.25	0.71	0.71	0.71	0.75	0.75	0.75	0.80	0.80	0.80
Adj. Flow (vph)	0	4	0	3	4	197	0	0	13	313	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	3	4	197	0	0	13	313	0	1
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2					6			8			4
Detector Phase	5	2		1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0	8.0	3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	11.0	43.5		11.0	36.5	36.5	11.0	44.0	44.0	11.0	47.0	47.0
Total Split (s)	5.0	39.0		5.0	39.0	39.0	5.0	40.0	40.0	6.0	41.0	41.0
Total Split (%)	5.6%	43.3%		5.6%	43.3%	43.3%	5.6%	44.4%	44.4%	6.7%	45.6%	45.6%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.5		1.0	1.5	1.5	1.0	2.0	2.0	1.0	2.0	2.0
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)	4.0	5.5		4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max		None	Max	Max	None	None	None	Max	None	None
Act Effct Green (s)		33.6		1.0	34.5	34.5			16.1	15.3		17.1
Actuated g/C Ratio		0.53		0.02	0.55	0.55			0.25	0.24		0.27
v/c Ratio		0.00		0.06	0.00	0.21			0.01	0.38		0.00
Control Delay		9.0		35.0	7.0	2.0			0.0	29.6		0.0
Queue Delay		0.0		0.0	0.0	0.0			0.0	0.0		0.0
Total Delay		9.0		35.0	7.0	2.0			0.0	29.6		0.0
LOS		A		C	A	A			A	C		A
Approach Delay		9.0			2.6							
Approach LOS		A			A							
Queue Length 50th (ft)		0		0	0	0			0	45		0
Queue Length 95th (ft)		0		3	1	12			0	#178		0
Internal Link Dist (ft)		876			1634			331			865	
Turn Bay Length (ft)				375		275			175	325		
Base Capacity (vph)		2707		54	2777	954			1336	829		1358

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0		0	0	0			0	0		0
Spillback Cap Reductn		0		0	0	0			0	0		0
Storage Cap Reductn		0		0	0	0			0	0		0
Reduced v/c Ratio		0.00		0.06	0.00	0.21			0.01	0.38		0.00

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 63.2			
Natural Cycle: 115			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.38			
Intersection Signal Delay: 18.4		Intersection LOS: B	
Intersection Capacity Utilization 40.0%		ICU Level of Service A	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: Stadium/Tierra Pintada & Arroyo Vista



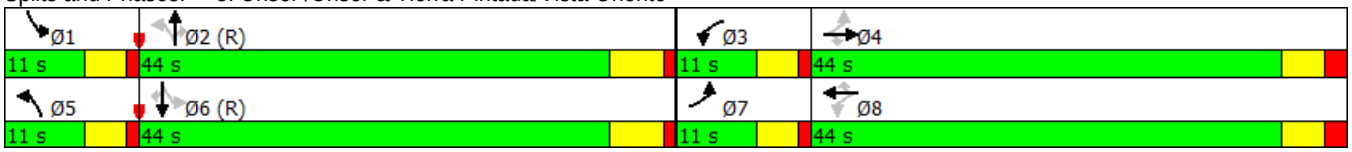
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	10	420	50	10	20	100	960	60	40	1440	100
Future Volume (vph)	220	10	420	50	10	20	100	960	60	40	1440	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	250		0	475		325	425		425
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.611			0.750			0.076			0.210		
Satd. Flow (perm)	1138	1863	1583	1397	1863	1583	142	5085	1583	391	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			249			114			114			114
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3973			530			828			831	
Travel Time (s)		90.3			12.0			18.8			18.9	
Peak Hour Factor	0.81	0.81	0.81	0.82	0.82	0.82	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	272	12	519	61	12	24	112	1079	67	45	1618	112
Shared Lane Traffic (%)												
Lane Group Flow (vph)	272	12	519	61	12	24	112	1079	67	45	1618	112
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	3.0	8.0	8.0	3.0	8.0	8.0	3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	11.0	44.0	44.0	11.0	44.0	44.0	11.0	33.5	33.5	11.0	35.5	35.5
Total Split (s)	11.0	44.0	44.0	11.0	44.0	44.0	11.0	44.0	44.0	11.0	44.0	44.0
Total Split (%)	10.0%	40.0%	40.0%	10.0%	40.0%	40.0%	10.0%	40.0%	40.0%	10.0%	40.0%	40.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.5	4.5	3.5	4.5	4.5
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	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	0.0
Total Lost Time (s)	4.5	5.5	5.5	4.5	5.5	5.5	4.5	5.5	5.5	4.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	33.7	26.6	26.6	26.4	23.0	23.0	62.4	55.5	55.5	58.6	52.3	52.3
Actuated g/C Ratio	0.31	0.24	0.24	0.24	0.21	0.21	0.57	0.50	0.50	0.53	0.48	0.48
v/c Ratio	0.64	0.03	0.91	0.17	0.03	0.06	0.62	0.42	0.08	0.16	0.67	0.14
Control Delay	36.6	26.4	40.4	24.9	26.8	0.2	33.4	21.0	1.1	15.4	26.9	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.6	26.4	40.4	24.9	26.8	0.2	33.4	21.0	1.1	15.4	26.9	4.8
LOS	D	C	D	C	C	A	C	C	A	B	C	A
Approach Delay		38.9			19.1			21.1			25.2	
Approach LOS		D			B			C			C	
Queue Length 50th (ft)	145	6	199	29	6	0	35	183	0	14	332	0
Queue Length 95th (ft)	160	17	235	44	17	0	#126	271	6	38	455	36
Internal Link Dist (ft)		3893			450			748			751	
Turn Bay Length (ft)	200			250			475		325	425		425
Base Capacity (vph)	425	652	715	363	652	628	187	2567	855	293	2418	812

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.02	0.73	0.17	0.02	0.04	0.60	0.42	0.08	0.15	0.67	0.14

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 26.5 Intersection LOS: C
Intersection Capacity Utilization 70.1% 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: 3: Unser /Unser & Tierra Pintada/Vista Oriente

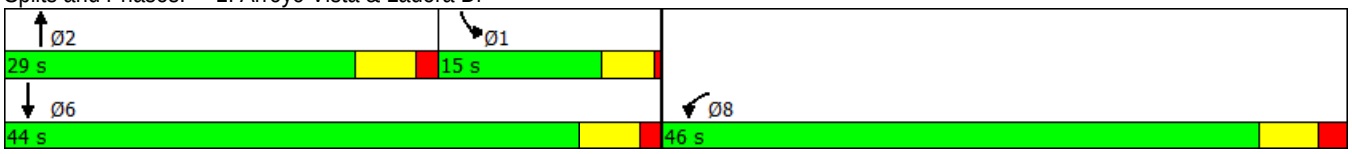


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	230	20	200	430	20	130
Future Volume (vph)	230	20	200	430	20	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	275		225	350	
Storage Lanes	2	1		1	2	
Taper Length (ft)	25				25	
Satd. Flow (prot)	3433	1583	5085	1583	3433	5085
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3433	1583	5085	1583	3433	5085
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		22		448		
Link Speed (mph)	30		30			30
Link Distance (ft)	632		711			1714
Travel Time (s)	14.4		16.2			39.0
Peak Hour Factor	0.91	0.91	0.96	0.96	0.81	0.81
Adj. Flow (vph)	253	22	208	448	25	160
Shared Lane Traffic (%)						
Lane Group Flow (vph)	253	22	208	448	25	160
Turn Type	Prot	Free	NA	Free	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		Free		Free		
Detector Phase	8		2		1	6
Switch Phase						
Minimum Initial (s)	16.0		8.0		3.0	8.0
Minimum Split (s)	40.0		22.0		11.0	22.0
Total Split (s)	46.0		29.0		15.0	44.0
Total Split (%)	51.1%		32.2%		16.7%	48.9%
Yellow Time (s)	4.0		4.0		3.5	4.0
All-Red Time (s)	2.0		1.5		0.5	1.5
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	6.0		5.5		4.0	5.5
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		Max		None	Max
Act Effct Green (s)	16.0	67.3	37.2	67.3	5.2	39.8
Actuated g/C Ratio	0.24	1.00	0.55	1.00	0.08	0.59
v/c Ratio	0.31	0.01	0.07	0.28	0.10	0.05
Control Delay	22.0	0.0	8.3	0.4	27.9	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.0	0.0	8.3	0.4	27.9	6.0
LOS	C	A	A	A	C	A
Approach Delay	20.2		2.9			8.9
Approach LOS	C		A			A
Queue Length 50th (ft)	42	0	11	0	5	9
Queue Length 95th (ft)	71	0	32	0	13	14
Internal Link Dist (ft)	552		631			1634
Turn Bay Length (ft)		275		225	350	
Base Capacity (vph)	2043	1583	2811	1583	562	3004

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.01	0.07	0.28	0.04	0.05

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 67.3			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.31			
Intersection Signal Delay: 8.2		Intersection LOS: A	
Intersection Capacity Utilization 31.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Arroyo Vista & Ladera Dr

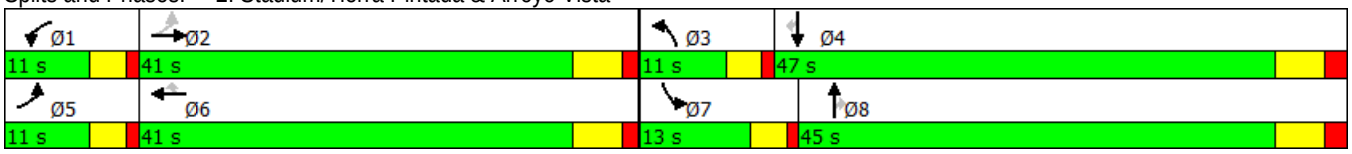


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	10	0	30	10	160	0	20	70	110	10	10
Future Volume (vph)	3	10	0	30	10	160	0	20	70	110	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		0	375		275	175		175	325		0
Storage Lanes	1		0	2		1	1		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	5085	0	3433	5085	1583	1863	1863	1583	3433	1863	1583
Flt Permitted	0.750			0.950						0.950		
Satd. Flow (perm)	1397	5085	0	3433	5085	1583	1863	1863	1583	3433	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						174			163			104
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		956			1714			411			945	
Travel Time (s)		21.7			39.0			9.3			21.5	
Peak Hour Factor	0.63	0.63	0.63	0.92	0.92	0.92	0.43	0.43	0.43	0.74	0.74	0.74
Adj. Flow (vph)	5	16	0	33	11	174	0	47	163	149	14	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	16	0	33	11	174	0	47	163	149	14	14
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2					6			8			4
Detector Phase	5	2		1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0	8.0	3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	11.0	43.5		11.0	36.5	36.5	11.0	44.0	44.0	11.0	47.0	47.0
Total Split (s)	11.0	41.0		11.0	41.0	41.0	11.0	45.0	45.0	13.0	47.0	47.0
Total Split (%)	10.0%	37.3%		10.0%	37.3%	37.3%	10.0%	40.9%	40.9%	11.8%	42.7%	42.7%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.5		1.0	1.5	1.5	1.0	2.0	2.0	1.0	2.0	2.0
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)	4.0	5.5		4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max		None	Max	Max	None	None	None	Max	None	None
Act Effct Green (s)	39.6	35.7		6.9	40.3	40.3		16.1	16.1	9.0	29.1	29.1
Actuated g/C Ratio	0.48	0.43		0.08	0.49	0.49		0.19	0.19	0.11	0.35	0.35
v/c Ratio	0.01	0.01		0.12	0.00	0.20		0.13	0.37	0.40	0.02	0.02
Control Delay	9.0	15.3		37.9	11.8	2.9		30.4	8.1	38.9	19.7	0.1
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	9.0	15.3		37.9	11.8	2.9		30.4	8.1	38.9	19.7	0.1
LOS	A	B		D	B	A		C	A	D	B	A
Approach Delay		13.8			8.7			13.1			34.3	
Approach LOS		B			A			B			C	
Queue Length 50th (ft)	1	1		8	1	0		22	0	40	5	0
Queue Length 95th (ft)	4	4		23	4	35		24	0	56	15	0
Internal Link Dist (ft)		876			1634			331			865	
Turn Bay Length (ft)	350			375		275			175	325		
Base Capacity (vph)	727	2194		292	2482	862		883	836	375	928	841

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0	0		0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0		0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0		0	0	0	0	0
Reduced v/c Ratio	0.01	0.01		0.11	0.00	0.20		0.05	0.19	0.40	0.02	0.02

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 82.6			
Natural Cycle: 115			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.40			
Intersection Signal Delay: 17.6		Intersection LOS: B	
Intersection Capacity Utilization 39.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Stadium/Tierra Pintada & Arroyo Vista

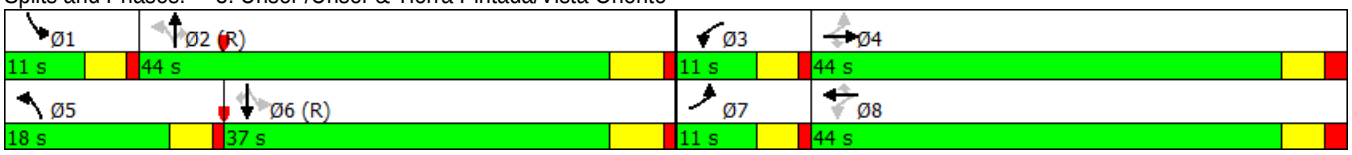


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	20	180	160	30	110	370	1430	100	60	840	160
Future Volume (vph)	130	20	180	160	30	110	370	1430	100	60	840	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	250		0	475		325	425		425
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.737			0.741			0.201			0.156		
Satd. Flow (perm)	1373	1863	1583	1380	1863	1583	374	5085	1583	291	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			222			159			114			180
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3973			530			828			831	
Travel Time (s)		90.3			12.0			18.8			18.9	
Peak Hour Factor	0.81	0.81	0.81	0.98	0.98	0.98	0.93	0.93	0.93	0.89	0.89	0.89
Adj. Flow (vph)	160	25	222	163	31	112	398	1538	108	67	944	180
Shared Lane Traffic (%)												
Lane Group Flow (vph)	160	25	222	163	31	112	398	1538	108	67	944	180
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	3.0	8.0	8.0	3.0	8.0	8.0	3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	11.0	44.0	44.0	11.0	44.0	44.0	11.0	33.5	33.5	11.0	35.5	35.5
Total Split (s)	11.0	44.0	44.0	11.0	44.0	44.0	18.0	44.0	44.0	11.0	37.0	37.0
Total Split (%)	10.0%	40.0%	40.0%	10.0%	40.0%	40.0%	16.4%	40.0%	40.0%	10.0%	33.6%	33.6%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.5	4.5	3.5	4.5	4.5
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	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	0.0
Total Lost Time (s)	4.5	5.5	5.5	4.5	5.5	5.5	4.5	5.5	5.5	4.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	16.6	9.1	9.1	16.6	9.1	9.1	79.9	70.8	70.8	49.8	43.4	43.4
Actuated g/C Ratio	0.15	0.08	0.08	0.15	0.08	0.08	0.73	0.64	0.64	0.45	0.39	0.39
v/c Ratio	0.70	0.16	0.67	0.71	0.20	0.41	0.60	0.47	0.10	0.33	0.47	0.25
Control Delay	57.6	48.5	16.6	58.4	49.4	6.8	14.3	11.3	1.9	13.6	25.4	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.6	48.5	16.6	58.4	49.4	6.8	14.3	11.3	1.9	13.6	25.4	4.0
LOS	E	D	B	E	D	A	B	B	A	B	C	A
Approach Delay		34.7			38.6			11.4			21.5	
Approach LOS		C			D			B			C	
Queue Length 50th (ft)	103	17	0	105	21	0	94	188	0	11	163	0
Queue Length 95th (ft)	142	38	47	163	49	21	220	271	21	27	219	42
Internal Link Dist (ft)		3893			450			748			751	
Turn Bay Length (ft)	200			250			475		325	425		425
Base Capacity (vph)	229	652	698	230	652	657	665	3272	1059	224	2007	733

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.04	0.32	0.71	0.05	0.17	0.60	0.47	0.10	0.30	0.47	0.25

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 18.9	Intersection LOS: B
Intersection Capacity Utilization 65.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Unser /Unser & Tierra Pintada/Vista Oriente



Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	120	10	3	120	0	90	0	10	0	0	0
Future Vol, veh/h	0	120	10	3	120	0	90	0	10	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	175	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	80	80	80	86	86	86	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	148	12	4	150	0	105	0	12	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	150	0	0	160	0	0	237	312	80
Stage 1	-	-	-	-	-	-	154	154	-
Stage 2	-	-	-	-	-	-	83	158	-
Critical Hdwy	4.14	-	-	4.14	-	-	6.84	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32
Pot Cap-1 Maneuver	1429	-	-	1417	-	-	730	602	964
Stage 1	-	-	-	-	-	-	858	769	-
Stage 2	-	-	-	-	-	-	931	766	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1429	-	-	1417	-	-	728	0	964
Mov Cap-2 Maneuver	-	-	-	-	-	-	728	0	-
Stage 1	-	-	-	-	-	-	858	0	-
Stage 2	-	-	-	-	-	-	928	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	746	1429	-	-	1417	-	-
HCM Lane V/C Ratio	0.156	-	-	-	0.003	-	-
HCM Control Delay (s)	10.7	0	-	-	7.5	-	-
HCM Lane LOS	B	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	130	60	4	80	0	30	0	4	0	0	0
Future Vol, veh/h	0	130	60	4	80	0	30	0	4	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	175	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	86	86	86	81	81	81	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	138	64	5	93	0	37	0	5	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	93	0	0	202	0	0	226	272	101
Stage 1	-	-	-	-	-	-	170	170	-
Stage 2	-	-	-	-	-	-	56	102	-
Critical Hdwy	4.14	-	-	4.14	-	-	6.84	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32
Pot Cap-1 Maneuver	1499	-	-	1367	-	-	742	634	935
Stage 1	-	-	-	-	-	-	843	757	-
Stage 2	-	-	-	-	-	-	960	810	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1499	-	-	1367	-	-	739	0	935
Mov Cap-2 Maneuver	-	-	-	-	-	-	739	0	-
Stage 1	-	-	-	-	-	-	843	0	-
Stage 2	-	-	-	-	-	-	956	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	758	1499	-	-	1367	-	-
HCM Lane V/C Ratio	0.055	-	-	-	0.003	-	-
HCM Control Delay (s)	10	0	-	-	7.6	-	-
HCM Lane LOS	B	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-

Appendix F

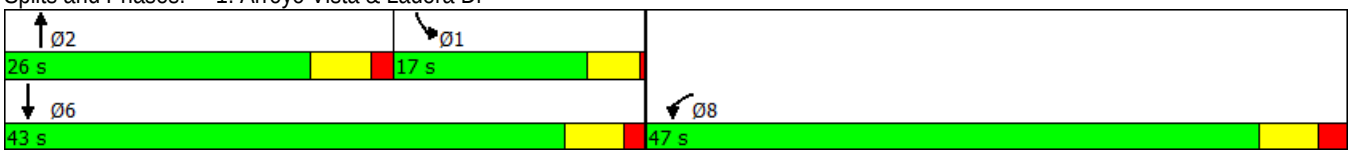
2021 Build Level of Service Analyses

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	480	240	150	240	160	240
Future Volume (vph)	480	240	150	240	160	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	275		225	350	
Storage Lanes	2	1		1	2	
Taper Length (ft)	25				25	
Satd. Flow (prot)	3433	1583	4715	1583	3433	4715
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3433	1583	4715	1583	3433	4715
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		282		300		
Link Speed (mph)	30		30			30
Link Distance (ft)	632		711			1714
Travel Time (s)	14.4		16.2			39.0
Peak Hour Factor	0.85	0.85	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	2%	2%	10%	2%	2%	10%
Adj. Flow (vph)	565	282	188	300	200	300
Shared Lane Traffic (%)						
Lane Group Flow (vph)	565	282	188	300	200	300
Turn Type	Prot	Free	NA	Free	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		Free		Free		
Detector Phase	8		2		1	6
Switch Phase						
Minimum Initial (s)	16.0		8.0		3.0	8.0
Minimum Split (s)	40.0		22.0		11.0	22.0
Total Split (s)	47.0		26.0		17.0	43.0
Total Split (%)	52.2%		28.9%		18.9%	47.8%
Yellow Time (s)	4.0		4.0		3.5	4.0
All-Red Time (s)	2.0		1.5		0.5	1.5
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	6.0		5.5		4.0	5.5
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		Max		None	Max
Act Effct Green (s)	18.7	68.8	26.1	68.8	8.4	38.6
Actuated g/C Ratio	0.27	1.00	0.38	1.00	0.12	0.56
v/c Ratio	0.61	0.18	0.11	0.19	0.48	0.11
Control Delay	24.9	0.2	15.0	0.3	32.7	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.9	0.2	15.0	0.3	32.7	7.7
LOS	C	A	B	A	C	A
Approach Delay	16.7		5.9			17.7
Approach LOS	B		A			B
Queue Length 50th (ft)	105	0	17	0	40	19
Queue Length 95th (ft)	147	0	32	0	67	32
Internal Link Dist (ft)	552		631			1634
Turn Bay Length (ft)		275		225	350	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Base Capacity (vph)	2053	1583	1788	1583	651	2642
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.18	0.11	0.19	0.31	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 68.8			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 14.1		Intersection LOS: B	
Intersection Capacity Utilization 37.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Arroyo Vista & Ladera Dr

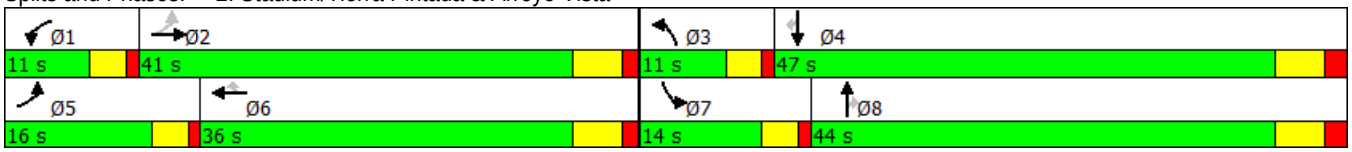


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	100	0	2	180	230	0	0	10	320	0	230
Future Volume (vph)	230	100	0	2	180	230	0	0	10	320	0	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		0	375		275	175		175	325		0
Storage Lanes	1		0	2		1	1		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	4322	0	3433	4322	1583	1863	1863	1583	3433	1863	1583
Flt Permitted	0.543			0.950						0.950		
Satd. Flow (perm)	1011	4322	0	3433	4322	1583	1863	1863	1583	3433	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						288			628			616
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		956			1714			411			945	
Travel Time (s)		21.7			39.0			9.3			21.5	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.75	0.75	0.75	0.85	0.85	0.85
Heavy Vehicles (%)	2%	20%	2%	2%	20%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	288	125	0	3	225	288	0	0	13	376	0	271
Shared Lane Traffic (%)												
Lane Group Flow (vph)	288	125	0	3	225	288	0	0	13	376	0	271
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2					6			8			4
Detector Phase	5	2		1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0	8.0	3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	11.0	43.5		11.0	36.5	36.5	11.0	44.0	44.0	11.0	47.0	47.0
Total Split (s)	16.0	41.0		11.0	36.0	36.0	11.0	44.0	44.0	14.0	47.0	47.0
Total Split (%)	14.5%	37.3%		10.0%	32.7%	32.7%	10.0%	40.0%	40.0%	12.7%	42.7%	42.7%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.5		1.0	1.5	1.5	1.0	2.0	2.0	1.0	2.0	2.0
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)	4.0	5.5		4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max		None	Max	Max	None	None	None	Max	None	None
Act Effct Green (s)	47.2	43.9		6.6	31.2	31.2			16.1	16.8		18.5
Actuated g/C Ratio	0.62	0.58		0.09	0.41	0.41			0.21	0.22		0.24
v/c Ratio	0.39	0.05		0.01	0.13	0.35			0.02	0.50		0.32
Control Delay	9.0	9.2		35.0	15.3	3.8			0.0	31.8		1.0
Queue Delay	0.0	0.0		0.0	0.0	0.0			0.0	0.0		0.0
Total Delay	9.0	9.2		35.0	15.3	3.8			0.0	31.8		1.0
LOS	A	A		C	B	A			A	C		A
Approach Delay		9.0			9.0							
Approach LOS		A			A							
Queue Length 50th (ft)	48	6		0	22	0			0	75		0
Queue Length 95th (ft)	112	23		4	43	32			0	#180		0
Internal Link Dist (ft)		876			1634			331			865	
Turn Bay Length (ft)	350			375		275			175	325		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	750	2501		319	1779	821			1110	758		1142
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	0.38	0.05		0.01	0.13	0.35			0.01	0.50		0.24

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 75.8			
Natural Cycle: 115			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 13.0		Intersection LOS: B	
Intersection Capacity Utilization 45.7%		ICU Level of Service A	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: Stadium/Tierra Pintada & Arroyo Vista



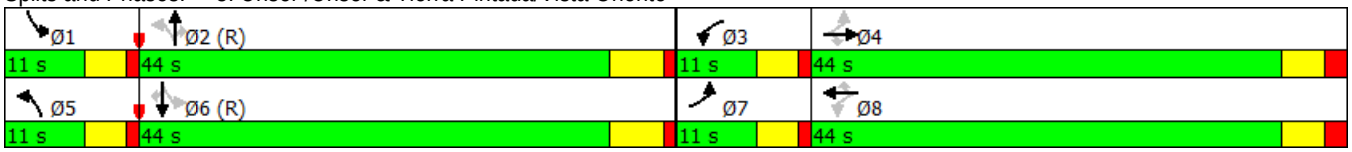
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	240	20	420	50	30	20	100	960	60	40	1440	150
Future Volume (vph)	240	20	420	50	30	20	100	960	60	40	1440	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	250		0	475		325	425		425
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.659			0.742			0.093			0.225		
Satd. Flow (perm)	1228	1863	1583	1382	1863	1583	173	5085	1583	419	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			247			114			114			158
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3973			530			828			831	
Travel Time (s)		90.3			12.0			18.8			18.9	
Peak Hour Factor	0.85	0.85	0.85	0.75	0.75	0.75	0.90	0.90	0.90	0.95	0.95	0.95
Adj. Flow (vph)	282	24	494	67	40	27	111	1067	67	42	1516	158
Shared Lane Traffic (%)												
Lane Group Flow (vph)	282	24	494	67	40	27	111	1067	67	42	1516	158
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	3.0	8.0	8.0	3.0	8.0	8.0	3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	11.0	44.0	44.0	11.0	44.0	44.0	11.0	33.5	33.5	11.0	35.5	35.5
Total Split (s)	11.0	44.0	44.0	11.0	44.0	44.0	11.0	44.0	44.0	11.0	44.0	44.0
Total Split (%)	10.0%	40.0%	40.0%	10.0%	40.0%	40.0%	10.0%	40.0%	40.0%	10.0%	40.0%	40.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.5	4.5	3.5	4.5	4.5
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	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	0.0
Total Lost Time (s)	4.5	5.5	5.5	4.5	5.5	5.5	4.5	5.5	5.5	4.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	31.4	25.2	25.2	29.8	24.5	24.5	64.4	58.8	58.8	60.1	53.8	53.8
Actuated g/C Ratio	0.29	0.23	0.23	0.27	0.22	0.22	0.59	0.53	0.53	0.55	0.49	0.49
v/c Ratio	0.73	0.06	0.89	0.17	0.10	0.06	0.56	0.39	0.07	0.14	0.61	0.18
Control Delay	42.4	28.2	38.6	23.1	29.3	0.2	26.4	19.2	1.1	14.6	24.7	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	0.0
Total Delay	42.4	28.2	38.6	23.1	29.3	0.2	26.4	19.2	1.1	14.6	24.7	4.4
LOS	D	C	D	C	C	A	C	B	A	B	C	A
Approach Delay		39.6			20.4			18.9			22.6	
Approach LOS		D			C			B			C	
Queue Length 50th (ft)	156	13	182	32	22	0	33	174	0	12	291	0
Queue Length 95th (ft)	177	28	241	43	36	0	#106	272	7	36	423	43
Internal Link Dist (ft)		3893			450			748			751	
Turn Bay Length (ft)	200			250			475		325	425		425
Base Capacity (vph)	388	652	714	402	652	628	204	2719	899	314	2488	855

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.04	0.69	0.17	0.06	0.04	0.54	0.39	0.07	0.13	0.61	0.18

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 24.8 Intersection LOS: C
Intersection Capacity Utilization 70.1% 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: 3: Unser /Unser & Tierra Pintada/Vista Oriente

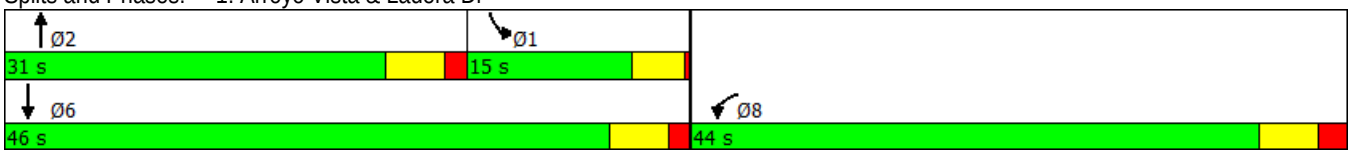


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	230	80	310	430	110	250
Future Volume (vph)	230	80	310	430	110	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	275		225	350	
Storage Lanes	2	1		1	2	
Taper Length (ft)	25				25	
Satd. Flow (prot)	3433	1583	3990	1583	3433	3705
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3433	1583	3990	1583	3433	3705
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		100		506		
Link Speed (mph)	30		30			30
Link Distance (ft)	632		711			1714
Travel Time (s)	14.4		16.2			39.0
Peak Hour Factor	0.80	0.80	0.85	0.85	0.80	0.80
Heavy Vehicles (%)	2%	2%	30%	2%	2%	40%
Adj. Flow (vph)	288	100	365	506	138	313
Shared Lane Traffic (%)						
Lane Group Flow (vph)	288	100	365	506	138	313
Turn Type	Prot	Free	NA	Free	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		Free		Free		
Detector Phase	8		2		1	6
Switch Phase						
Minimum Initial (s)	16.0		8.0		3.0	8.0
Minimum Split (s)	40.0		22.0		11.0	22.0
Total Split (s)	44.0		31.0		15.0	46.0
Total Split (%)	48.9%		34.4%		16.7%	51.1%
Yellow Time (s)	4.0		4.0		3.5	4.0
All-Red Time (s)	2.0		1.5		0.5	1.5
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	6.0		5.5		4.0	5.5
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		Max		None	Max
Act Effct Green (s)	16.0	68.0	26.0	68.0	10.5	40.5
Actuated g/C Ratio	0.24	1.00	0.38	1.00	0.15	0.60
v/c Ratio	0.36	0.06	0.24	0.32	0.26	0.14
Control Delay	23.2	0.1	14.8	0.5	26.8	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.2	0.1	14.8	0.5	26.8	6.3
LOS	C	A	B	A	C	A
Approach Delay	17.3		6.5			12.6
Approach LOS	B		A			B
Queue Length 50th (ft)	52	0	36	0	26	18
Queue Length 95th (ft)	73	0	52	0	43	26
Internal Link Dist (ft)	552		631			1634
Turn Bay Length (ft)		275		225	350	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Base Capacity (vph)	1918	1583	1525	1583	555	2206
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.06	0.24	0.32	0.25	0.14

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 68			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.36			
Intersection Signal Delay: 10.5		Intersection LOS: B	
Intersection Capacity Utilization 36.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Arroyo Vista & Ladera Dr

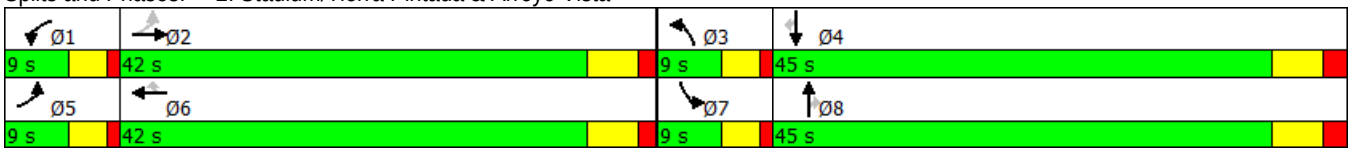


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	190	0	30	170	180	0	20	70	130	10	80
Future Volume (vph)	120	190	0	30	170	180	0	20	70	130	10	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		0	375		275	175		175	325		0
Storage Lanes	1		0	2		1	1		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3242	0	3433	3242	1583	1863	1863	1583	3433	1863	1583
Flt Permitted	0.581			0.950						0.950		
Satd. Flow (perm)	1082	3242	0	3433	3242	1583	1863	1863	1583	3433	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						225			109			109
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		956			1714			411			945	
Travel Time (s)		21.7			39.0			9.3			21.5	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.75	0.75	0.75	0.80	0.80	0.80
Heavy Vehicles (%)	2%	60%	2%	2%	60%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	150	238	0	38	213	225	0	27	93	163	13	100
Shared Lane Traffic (%)												
Lane Group Flow (vph)	150	238	0	38	213	225	0	27	93	163	13	100
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2					6			8			4
Detector Phase	5	2		1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0	8.0	3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	11.0	43.5		11.0	36.5	36.5	11.0	44.0	44.0	11.0	47.0	47.0
Total Split (s)	9.0	42.0		9.0	42.0	42.0	9.0	45.0	45.0	9.0	45.0	45.0
Total Split (%)	8.6%	40.0%		8.6%	40.0%	40.0%	8.6%	42.9%	42.9%	8.6%	42.9%	42.9%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.5		1.0	1.5	1.5	1.0	2.0	2.0	1.0	2.0	2.0
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)	4.0	5.5		4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max		None	Max	Max	None	None	None	Max	None	None
Act Effct Green (s)	44.8	40.3		5.0	36.6	36.6		16.0	16.0	7.9	23.1	23.1
Actuated g/C Ratio	0.56	0.50		0.06	0.46	0.46		0.20	0.20	0.10	0.29	0.29
v/c Ratio	0.23	0.15		0.18	0.14	0.27		0.07	0.23	0.49	0.02	0.19
Control Delay	9.2	12.6		38.6	13.6	3.0		27.7	6.4	43.7	20.2	5.0
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	9.2	12.6		38.6	13.6	3.0		27.7	6.4	43.7	20.2	5.0
LOS	A	B		D	B	A		C	A	D	C	A
Approach Delay		11.3			10.6			11.2			28.6	
Approach LOS		B			B			B			C	
Queue Length 50th (ft)	33	26		9	23	0		11	0	43	5	0
Queue Length 95th (ft)	52	36		22	32	25		27	17	#76	15	21
Internal Link Dist (ft)		876			1634			331			865	
Turn Bay Length (ft)	350			375		275			175	325		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	646	1629		214	1479	844		908	827	336	908	827
Starvation Cap Reductn	0	0		0	0	0		0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0		0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0		0	0	0	0	0
Reduced v/c Ratio	0.23	0.15		0.18	0.14	0.27		0.03	0.11	0.49	0.01	0.12

Intersection Summary			
Area Type:	Other		
Cycle Length: 105			
Actuated Cycle Length: 80.2			
Natural Cycle: 115			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 14.8		Intersection LOS: B	
Intersection Capacity Utilization 44.0%		ICU Level of Service A	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: Stadium/Tierra Pintada & Arroyo Vista

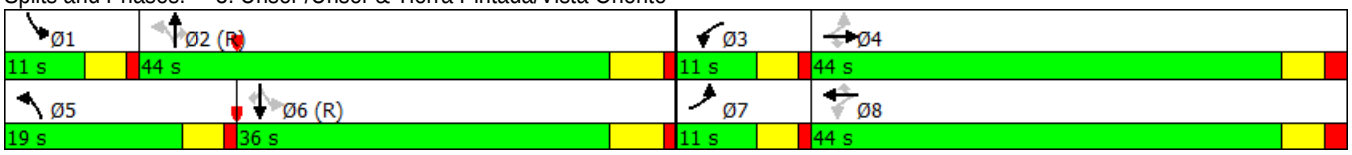


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	30	180	160	40	110	370	1430	100	60	840	180
Future Volume (vph)	150	30	180	160	40	110	370	1430	100	60	840	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	250		0	475		325	425		425
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.724			0.732			0.211			0.161		
Satd. Flow (perm)	1349	1863	1583	1364	1863	1583	393	5085	1583	300	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			225			159			114			200
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3973			530			828			831	
Travel Time (s)		90.3			12.0			18.8			18.9	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.95	0.95	0.95	0.90	0.90	0.90
Adj. Flow (vph)	188	38	225	200	50	138	389	1505	105	67	933	200
Shared Lane Traffic (%)												
Lane Group Flow (vph)	188	38	225	200	50	138	389	1505	105	67	933	200
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	3.0	8.0	8.0	3.0	8.0	8.0	3.0	16.0	16.0	3.0	16.0	16.0
Minimum Split (s)	11.0	44.0	44.0	11.0	44.0	44.0	11.0	33.5	33.5	11.0	35.5	35.5
Total Split (s)	11.0	44.0	44.0	11.0	44.0	44.0	19.0	44.0	44.0	11.0	36.0	36.0
Total Split (%)	10.0%	40.0%	40.0%	10.0%	40.0%	40.0%	17.3%	40.0%	40.0%	10.0%	32.7%	32.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.5	4.5	3.5	4.5	4.5
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	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	0.0
Total Lost Time (s)	4.5	5.5	5.5	4.5	5.5	5.5	4.5	5.5	5.5	4.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	16.7	9.2	9.2	16.7	9.2	9.2	79.8	70.6	70.6	51.8	45.5	45.5
Actuated g/C Ratio	0.15	0.08	0.08	0.15	0.08	0.08	0.73	0.64	0.64	0.47	0.41	0.41
v/c Ratio	0.82	0.25	0.67	0.87	0.32	0.50	0.60	0.46	0.10	0.31	0.44	0.26
Control Delay	69.7	50.3	16.4	76.1	52.4	11.4	13.2	11.2	1.8	12.8	23.9	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.7	50.3	16.4	76.1	52.4	11.4	13.2	11.2	1.8	12.8	23.9	3.8
LOS	E	D	B	E	D	B	B	B	A	B	C	A
Approach Delay		41.5			50.0			11.1			19.9	
Approach LOS		D			D			B			B	
Queue Length 50th (ft)	123	26	0	132	34	0	80	182	0	11	156	0
Queue Length 95th (ft)	162	51	45	171	62	26	204	264	20	28	218	45
Internal Link Dist (ft)		3893			450			748			751	
Turn Bay Length (ft)	200			250			475		325	425		425
Base Capacity (vph)	229	652	700	231	652	657	646	3265	1057	234	2101	771

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.06	0.32	0.87	0.08	0.21	0.60	0.46	0.10	0.29	0.44	0.26

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 20.9	Intersection LOS: C
Intersection Capacity Utilization 65.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Unser /Unser & Tierra Pintada/Vista Oriente



Intersection	
Int Delay, s/veh	157

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	210	200	30	3	260	100	130	60	10	78	50	170
Future Vol, veh/h	210	200	30	3	260	100	130	60	10	78	50	170
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	175	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	5	2	2	5	2	2	2	2	2	2	2
Mvmt Flow	263	250	38	4	325	125	163	75	13	98	63	213

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	450	0	0	288	0	0	995	1252	144	1083	1208	225
Stage 1	-	-	-	-	-	-	794	794	-	395	395	-
Stage 2	-	-	-	-	-	-	201	458	-	688	813	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1107	-	-	1271	-	-	199	171	877	172	182	778
Stage 1	-	-	-	-	-	-	348	398	-	602	603	-
Stage 2	-	-	-	-	-	-	782	565	-	403	390	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1107	-	-	1271	-	-	~ 77	130	877	~ 77	138	778
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 77	130	-	~ 77	138	-
Stage 1	-	-	-	-	-	-	265	303	-	459	601	-
Stage 2	-	-	-	-	-	-	508	563	-	228	297	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.4	0.1	$ 860.7	101.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	93	1107	-	-	1271	-	-	77	379
HCM Lane V/C Ratio	2.688	0.237	-	-	0.003	-	-	1.266	0.726
HCM Control Delay (s)	$ 860.7	9.3	-	-	7.8	-	-	285.5	35.9
HCM Lane LOS	F	A	-	-	A	-	-	F	E
HCM 95th %tile Q(veh)	23.6	0.9	-	-	0	-	-	7.5	5.6

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	98	250	380	90	70	88
Future Vol, veh/h	98	250	380	90	70	88
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	350	-	-	250	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	80	80	80	80	75	75
Heavy Vehicles, %	20	2	2	20	25	25
Mvmt Flow	123	313	475	113	93	117

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	475	0	-	0	845	238
Stage 1	-	-	-	-	475	-
Stage 2	-	-	-	-	370	-
Critical Hdwy	5.7	-	-	-	6.2	7.6
Critical Hdwy Stg 1	-	-	-	-	7.1	-
Critical Hdwy Stg 2	-	-	-	-	6.5	-
Follow-up Hdwy	3.3	-	-	-	4.05	4.15
Pot Cap-1 Maneuver	634	-	-	-	321	600
Stage 1	-	-	-	-	450	-
Stage 2	-	-	-	-	557	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	634	-	-	-	259	600
Mov Cap-2 Maneuver	-	-	-	-	259	-
Stage 1	-	-	-	-	450	-
Stage 2	-	-	-	-	449	-

Approach	EB	WB	SB
HCM Control Delay, s	3.4	0	18.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	634	-	-	-	259	600
HCM Lane V/C Ratio	0.193	-	-	-	0.36	0.196
HCM Control Delay (s)	12	-	-	-	26.5	12.5
HCM Lane LOS	B	-	-	-	D	B
HCM 95th %tile Q(veh)	0.7	-	-	-	1.6	0.7

Intersection	
Int Delay, s/veh	186.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	440	230	0	0	200	270	0	0	0	130	0	210
Future Vol, veh/h	440	230	0	0	200	270	0	0	0	130	0	210
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	350	-	-	350	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	80	80	80	75	75	75	80	80	80
Heavy Vehicles, %	2	10	2	2	10	2	2	2	2	2	2	2
Mvmt Flow	518	271	0	0	250	338	0	0	0	163	0	263

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	588	0	0	271	0	0	1406	1894	135	1563	1725	294
Stage 1	-	-	-	-	-	-	1306	1306	-	419	419	-
Stage 2	-	-	-	-	-	-	100	588	-	1144	1306	-
Critical Hdwy	5.34	-	-	5.34	-	-	6.44	6.54	7.14	6.44	6.54	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.34	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.74	5.54	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	3.82	4.02	3.92	3.82	4.02	3.92
Pot Cap-1 Maneuver	616	-	-	866	-	-	147	69	756	~ 118	88	599
Stage 1	-	-	-	-	-	-	121	228	-	497	588	-
Stage 2	-	-	-	-	-	-	824	494	-	191	228	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	616	-	-	866	-	-	24	11	756	~ 34	14	599
Mov Cap-2 Maneuver	-	-	-	-	-	-	24	11	-	~ 34	14	-
Stage 1	-	-	-	-	-	-	19	36	-	~ 79	588	-
Stage 2	-	-	-	-	-	-	463	494	-	~ 30	36	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.4	0	0	$ 750
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	-	616	-	-	866	-	-	34	599
HCM Lane V/C Ratio	-	-	0.84	-	-	-	-	-	4.779	0.438
HCM Control Delay (s)	0	0	34.1	-	-	0	-	-	$ 1936.4	15.6
HCM Lane LOS	A	A	D	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	-	-	9.1	-	-	0	-	-	19.2	2.2

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	60	190	80	4	120	27	40	20	4	27	20	60
Future Vol, veh/h	60	190	80	4	120	27	40	20	4	27	20	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	175	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	75	238	100	5	160	36	53	27	5	36	27	80

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	196	0	0	338	0	0	542	645	169	471	677	98
Stage 1	-	-	-	-	-	-	438	438	-	189	189	-
Stage 2	-	-	-	-	-	-	104	207	-	282	488	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1374	-	-	1218	-	-	423	389	845	476	373	939
Stage 1	-	-	-	-	-	-	567	577	-	795	743	-
Stage 2	-	-	-	-	-	-	890	729	-	701	548	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1374	-	-	1218	-	-	348	366	845	427	351	939
Mov Cap-2 Maneuver	-	-	-	-	-	-	348	366	-	427	351	-
Stage 1	-	-	-	-	-	-	536	546	-	752	740	-
Stage 2	-	-	-	-	-	-	782	726	-	626	518	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0.2	17.8	12.2
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	367	1374	-	-	1218	-	-	427	662
HCM Lane V/C Ratio	0.233	0.055	-	-	0.004	-	-	0.084	0.161
HCM Control Delay (s)	17.8	7.8	-	-	8	-	-	14.2	11.5
HCM Lane LOS	C	A	-	-	A	-	-	B	B
HCM 95th %tile Q(veh)	0.9	0.2	-	-	0	-	-	0.3	0.6

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	79	130	120	170	180	90
Future Vol, veh/h	79	130	120	170	180	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	350	-	-	250	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	80	80	75	75
Heavy Vehicles, %	20	2	2	20	10	10
Mvmt Flow	105	173	150	213	240	120

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	150	0	-	0	430	75
Stage 1	-	-	-	-	150	-
Stage 2	-	-	-	-	280	-
Critical Hdwy	5.7	-	-	-	5.9	7.3
Critical Hdwy Stg 1	-	-	-	-	6.8	-
Critical Hdwy Stg 2	-	-	-	-	6.2	-
Follow-up Hdwy	3.3	-	-	-	3.9	4
Pot Cap-1 Maneuver	921	-	-	-	571	806
Stage 1	-	-	-	-	753	-
Stage 2	-	-	-	-	661	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	921	-	-	-	506	806
Mov Cap-2 Maneuver	-	-	-	-	506	-
Stage 1	-	-	-	-	753	-
Stage 2	-	-	-	-	586	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	15.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	921	-	-	-	506	806
HCM Lane V/C Ratio	0.114	-	-	-	0.474	0.149
HCM Control Delay (s)	9.4	-	-	-	18.4	10.2
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.4	-	-	-	2.5	0.5

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	60	130	0	0	170	40	0	0	0	80	0	130
Future Vol, veh/h	60	130	0	0	170	40	0	0	0	80	0	130
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	350	-	-	350	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	80	80	80
Heavy Vehicles, %	2	10	2	2	10	2	2	2	2	2	2	2
Mvmt Flow	80	173	0	0	227	53	0	0	0	100	0	163

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	280	0	0	173	0	0	424	613	87	482	586	140
Stage 1	-	-	-	-	-	-	333	333	-	253	253	-
Stage 2	-	-	-	-	-	-	91	280	-	229	333	-
Critical Hdwy	5.34	-	-	5.34	-	-	6.44	6.54	7.14	6.44	6.54	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.34	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.74	5.54	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	3.82	4.02	3.92	3.82	4.02	3.92
Pot Cap-1 Maneuver	858	-	-	961	-	-	548	406	810	508	421	750
Stage 1	-	-	-	-	-	-	567	642	-	642	696	-
Stage 2	-	-	-	-	-	-	834	678	-	691	642	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	858	-	-	961	-	-	399	368	810	472	382	750
Mov Cap-2 Maneuver	-	-	-	-	-	-	399	368	-	472	382	-
Stage 1	-	-	-	-	-	-	514	582	-	582	696	-
Stage 2	-	-	-	-	-	-	653	678	-	627	582	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3	0	0	12.5
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	-	858	-	-	961	-	-	472	750
HCM Lane V/C Ratio	-	-	0.093	-	-	-	-	-	0.212	0.217
HCM Control Delay (s)	0	0	9.6	-	-	0	-	-	14.7	11.1
HCM Lane LOS	A	A	A	-	-	A	-	-	B	B
HCM 95th %tile Q(veh)	-	-	0.3	-	-	0	-	-	0.8	0.8

Appendix G

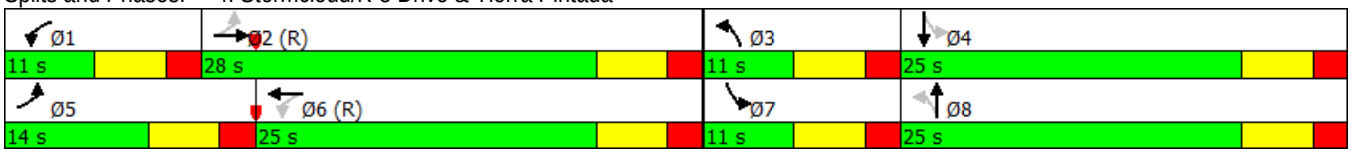
2021 Build-Mitigation Level of Service Analyses

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	200	30	3	260	100	130	60	10	78	50	170
Future Volume (vph)	210	200	30	3	260	100	130	60	10	78	50	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	175		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3382	0	1770	3320	0	0	1792	0	1770	1647	0
Flt Permitted	0.313			0.575				0.648		0.625		
Satd. Flow (perm)	583	3382	0	1071	3320	0	0	1199	0	1164	1647	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			72			4			213	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		945			3973			428			357	
Travel Time (s)		21.5			90.3			9.7			8.1	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	263	250	38	4	325	125	163	75	13	98	63	213
Shared Lane Traffic (%)												
Lane Group Flow (vph)	263	288	0	4	450	0	0	251	0	98	276	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0		11.0	24.0		11.0	24.0		11.0	24.0	
Total Split (s)	14.0	28.0		11.0	25.0		11.0	25.0		11.0	25.0	
Total Split (%)	18.7%	37.3%		14.7%	33.3%		14.7%	33.3%		14.7%	33.3%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max		None	Max		None	Max	
Act Effct Green (s)	32.4	30.8		24.0	19.0			21.2		30.0	30.0	
Actuated g/C Ratio	0.43	0.41		0.32	0.25			0.28		0.40	0.40	
v/c Ratio	0.70	0.21		0.01	0.50			0.74		0.19	0.35	
Control Delay	26.5	14.5		12.3	22.2			41.1		15.5	5.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	26.5	14.5		12.3	22.2			41.1		15.5	5.6	
LOS	C	B		B	C			D		B	A	
Approach Delay		20.2			22.1			41.1			8.2	
Approach LOS		C			C			D			A	
Queue Length 50th (ft)	77	37		1	77			108		28	18	
Queue Length 95th (ft)	112	69		6	103			#190		51	48	
Internal Link Dist (ft)		865			3893			348			277	
Turn Bay Length (ft)				175								

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	378	1402		389	894			341		506	786	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.70	0.21		0.01	0.50			0.74		0.19	0.35	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 14 (19%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 21.2		Intersection LOS: C	
Intersection Capacity Utilization 66.1%		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: 4: Stormcloud/K-8 Drive & Tierra Pintada

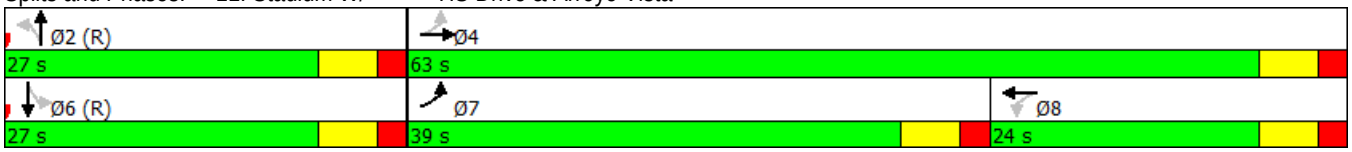


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	440	230	0	0	200	270	0	0	0	130	0	210
Future Volume (vph)	440	230	0	0	200	270	0	0	0	130	0	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		0	350		250	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	4715	0	1863	4498	0	1863	1863	0	1770	1583	0
Flt Permitted	0.222									0.757		
Satd. Flow (perm)	414	4715	0	1863	4498	0	1863	1863	0	1410	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					338						781	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		766			959			227			243	
Travel Time (s)		17.4			21.8			5.2			5.5	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.75	0.75	0.75	0.80	0.80	0.80
Heavy Vehicles (%)	2%	10%	2%	2%	10%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	550	288	0	0	250	338	0	0	0	163	0	263
Shared Lane Traffic (%)												
Lane Group Flow (vph)	550	288	0	0	588	0	0	0	0	163	263	0
Turn Type	pm+pt	NA		Perm	NA		Perm			Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	39.0	63.0		24.0	24.0		27.0	27.0		27.0	27.0	
Total Split (%)	43.3%	70.0%		26.7%	26.7%		30.0%	30.0%		30.0%	30.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	49.4	49.4			12.0					28.6	28.6	
Actuated g/C Ratio	0.55	0.55			0.13					0.32	0.32	
v/c Ratio	0.79	0.11			0.66					0.36	0.25	
Control Delay	25.7	9.1			18.6					29.1	0.6	
Queue Delay	0.0	0.0			0.0					0.0	0.0	
Total Delay	25.7	9.1			18.6					29.1	0.6	
LOS	C	A			B					C	A	
Approach Delay		20.0			18.6						11.5	
Approach LOS		B			B						B	
Queue Length 50th (ft)	209	26			48					72	0	
Queue Length 95th (ft)	246	28			61					124	0	
Internal Link Dist (ft)		686			879			147			163	
Turn Bay Length (ft)	350											

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	724	2986			1170					447	1035	
Starvation Cap Reductn	0	0			0					0	0	
Spillback Cap Reductn	0	0			0					0	0	
Storage Cap Reductn	0	0			0					0	0	
Reduced v/c Ratio	0.76	0.10			0.50					0.36	0.25	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 17.6		Intersection LOS: B	
Intersection Capacity Utilization 62.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 11: Stadium W/ HS Drive & Arroyo Vista

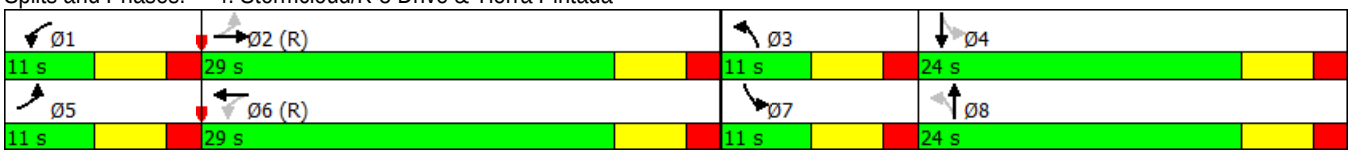


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	190	80	4	120	27	40	20	4	27	20	60
Future Volume (vph)	60	190	80	4	120	27	40	20	4	27	20	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	175		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3383	0	1770	3440	0	0	1792	0	1770	1654	0
Flt Permitted	0.552			0.548				0.781		0.693		
Satd. Flow (perm)	1028	3383	0	1021	3440	0	0	1443	0	1291	1654	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		89			36			4			80	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		945			3973			428			357	
Travel Time (s)		21.5			90.3			9.7			8.1	
Peak Hour Factor	0.80	0.80	0.80	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Adj. Flow (vph)	75	238	100	5	160	36	53	27	5	36	27	80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	338	0	5	196	0	0	85	0	36	107	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0		11.0	24.0		11.0	24.0		11.0	24.0	
Total Split (s)	11.0	29.0		11.0	29.0		11.0	24.0		11.0	24.0	
Total Split (%)	14.7%	38.7%		14.7%	38.7%		14.7%	32.0%		14.7%	32.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max		None	Max		None	Max	
Act Effct Green (s)	32.8	31.8		29.2	25.2			22.4		29.0	29.0	
Actuated g/C Ratio	0.44	0.42		0.39	0.34			0.30		0.39	0.39	
v/c Ratio	0.15	0.23		0.01	0.17			0.20		0.07	0.16	
Control Delay	12.7	11.3		11.5	15.7			22.7		14.9	6.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	12.7	11.3		11.5	15.7			22.7		14.9	6.4	
LOS	B	B		B	B			C		B	A	
Approach Delay		11.6			15.6			22.7			8.5	
Approach LOS		B			B			C			A	
Queue Length 50th (ft)	19	34		1	28			30		10	8	
Queue Length 95th (ft)	37	65		6	41			55		23	26	
Internal Link Dist (ft)		865			3893			348			277	
Turn Bay Length (ft)				175								
Base Capacity (vph)	499	1485		447	1179			433		531	688	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.15	0.23		0.01	0.17			0.20		0.07	0.16	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.23			
Intersection Signal Delay: 13.1		Intersection LOS: B	
Intersection Capacity Utilization 37.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Stormcloud/K-8 Drive & Tierra Pintada

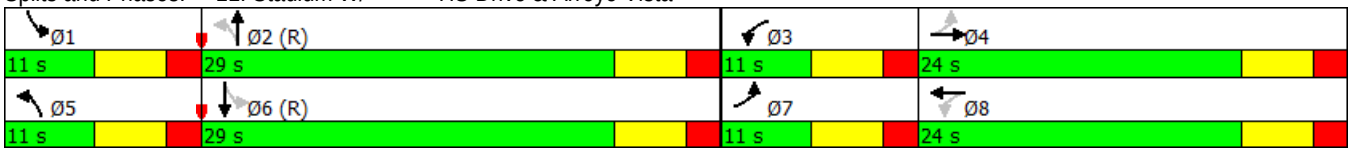


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	130	0	0	170	40	0	0	0	80	0	130
Future Volume (vph)	60	130	0	0	170	40	0	0	0	80	0	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		0	350		250	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	4715	0	1863	4647	0	1863	1863	0	1770	1583	0
Flt Permitted	0.344									0.636		
Satd. Flow (perm)	641	4715	0	1863	4647	0	1863	1863	0	1185	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					53						595	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		766			959			227			243	
Travel Time (s)		17.4			21.8			5.2			5.5	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.80	0.80	0.80
Heavy Vehicles (%)	2%	10%	2%	2%	10%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	80	173	0	0	227	53	0	0	0	100	0	163
Shared Lane Traffic (%)												
Lane Group Flow (vph)	80	173	0	0	280	0	0	0	0	100	163	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt			pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0		11.0	24.0		11.0	24.0		11.0	24.0	
Total Split (s)	11.0	24.0		11.0	24.0		11.0	29.0		11.0	29.0	
Total Split (%)	14.7%	32.0%		14.7%	32.0%		14.7%	38.7%		14.7%	38.7%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	17.8	17.8			9.0					45.2	45.2	
Actuated g/C Ratio	0.24	0.24			0.12					0.60	0.60	
v/c Ratio	0.35	0.15			0.46					0.13	0.14	
Control Delay	25.0	21.4			27.0					8.2	0.2	
Queue Delay	0.0	0.0			0.0					0.0	0.0	
Total Delay	25.0	21.4			27.0					8.2	0.2	
LOS	C	C			C					A	A	
Approach Delay		22.5			27.0						3.3	
Approach LOS		C			C						A	
Queue Length 50th (ft)	29	22			36					19	0	
Queue Length 95th (ft)	48	30			46					37	0	
Internal Link Dist (ft)		686			879			147			163	
Turn Bay Length (ft)	350											

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	227	1263			1155					772	1189	
Starvation Cap Reductn	0	0			0					0	0	
Spillback Cap Reductn	0	0			0					0	0	
Storage Cap Reductn	0	0			0					0	0	
Reduced v/c Ratio	0.35	0.14			0.24					0.13	0.14	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.46			
Intersection Signal Delay: 17.7		Intersection LOS: B	
Intersection Capacity Utilization 31.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 11: Stadium W/ HS Drive & Arroyo Vista



Traffic Impact Analysis

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