

Architectural and Aesthetic Concepts Tucson Mountain Ranch Commercial Center

Anchor Store Elements (Major)

- Major entry framing with distinctive entry feature.
- Weather and sun protection to mitigate weather and solar exposure.
- Pedestrian spaces connected to entry to enhance walkability.
- Landscaping to enhance visual aesthetic and provide climatic and solar mitigation.



Entrance Details

- Multiple materials/finishes/elements
- Southwest influenced color palette

Pedestrian Shade Devices

Entrance at Human Scale



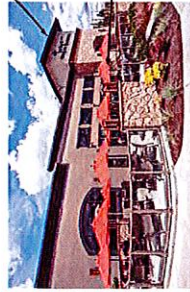
Side Elevation Details

- Southwest influenced color palette

Shade Device Architectural Detail

Free-Standing Pad Elements

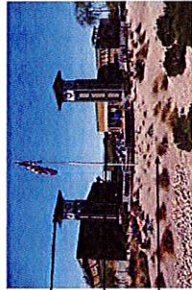
- Potential outdoor patios.
- Shading devices with visual connection to street and parking area.
- Architectural details on all four sides.
- Landscaped areas for aesthetic and climatic enhancements.



Entrance Details

- Multiple materials/finishes/elements
- Southwest influenced color palette

Shade Devices



Architectural Details

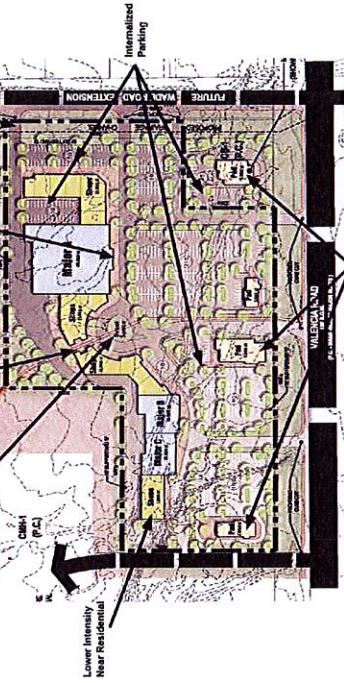
- Design elements on four sides
- Landmark elements
- Southwest influenced color palette

Shade Device Architectural Detail

Walkways w/ landscaped landscape design and materials

Pedestrian Friendly

- Pedestrian performance
- Mixed use
- Policy programs
- Public seating
- Visual connection
- Visual displays



Residential Trail System Connection

- Enhanced landscape and trail connecting the northern boundary with the cluster development trailroad system.
- Pedestrian circulation connected to Event Space, shop fronts and a centralized location.



Separated Pedestrian Walkway

- Multiple pedestrian/vehicle conflicts
- Southwest influenced color palette
- Edge of wayfinding

Walkway width suitable for ADA

Shop Space Elements

- Weather and sun protection to mitigate weather and solar exposure.
- Pedestrian spaces connected to entry to enhance walkability.
- Parking spaces adjacent to shops.



Entrance Details

- Lighting design
- Southwest influenced color and material's palette

Shade Device



Side Elevation Details

- Incorporate outdoor canals
- Southwest influenced color palette
- Multiple materials/finishes/elements

Shade Device Architectural Detail

Pedestrian Window Shopping Area

- Enhanced pedestrian paving such as decorative scored concrete, abraded concrete, exposed aggregate, integral colored or textured concrete.
- Pedestrian circulation connected to shop fronts and parking areas.
- Centralized location to seating areas.



Entrance Details

- Overhangs, awnings, and canopies
- Southwest influenced color palette

Shade Devices



Separated Pedestrian Walkway

- Multiple pedestrian/vehicle conflicts
- Material change at pedestrian crossing
- Southwest influenced color palette

Raised curb

Walkway width suitable for ADA



- SITE NOTES:**
- ALL SURROUNDING STRUCTURES ARE 1-STORY
 - TOTAL SITE AREA (NET): 687,000± S.F.
15.3± ACRES
 - EXISTING ZONING: CMH-1 (15.3± ACRES)
 - PROPOSED ZONING: CB-1 (15.3± ACRES)
 - RETAIL AREA:
MAJORS 60,000 S.F.
SHOPS 49,000 S.F.
PADS 20,000 S.F.
 - TOTAL GLA 129,000 S.F.
20.0%
 - PARKING PROVIDED: 650 (5.0/1000)
 - THE ENTIRE SITE IS CURRENTLY MAPPED WITHIN SFHA AND WILL BE REMOVED VIA A CLOMR PRIOR TO DEVELOPMENT.
 - ALL PROPOSED CURB CUTS ON WADE AND VALENCIA ARE SUBJECT TO REVIEW AND APPROVAL BY PIMA COUNTY DOT DURING THE DEVELOPMENT PLAN PHASE.
 - SEE EXH. II-D-1 FOR PROPOSED SCHEMATIC DRAINAGE CONCEPT.



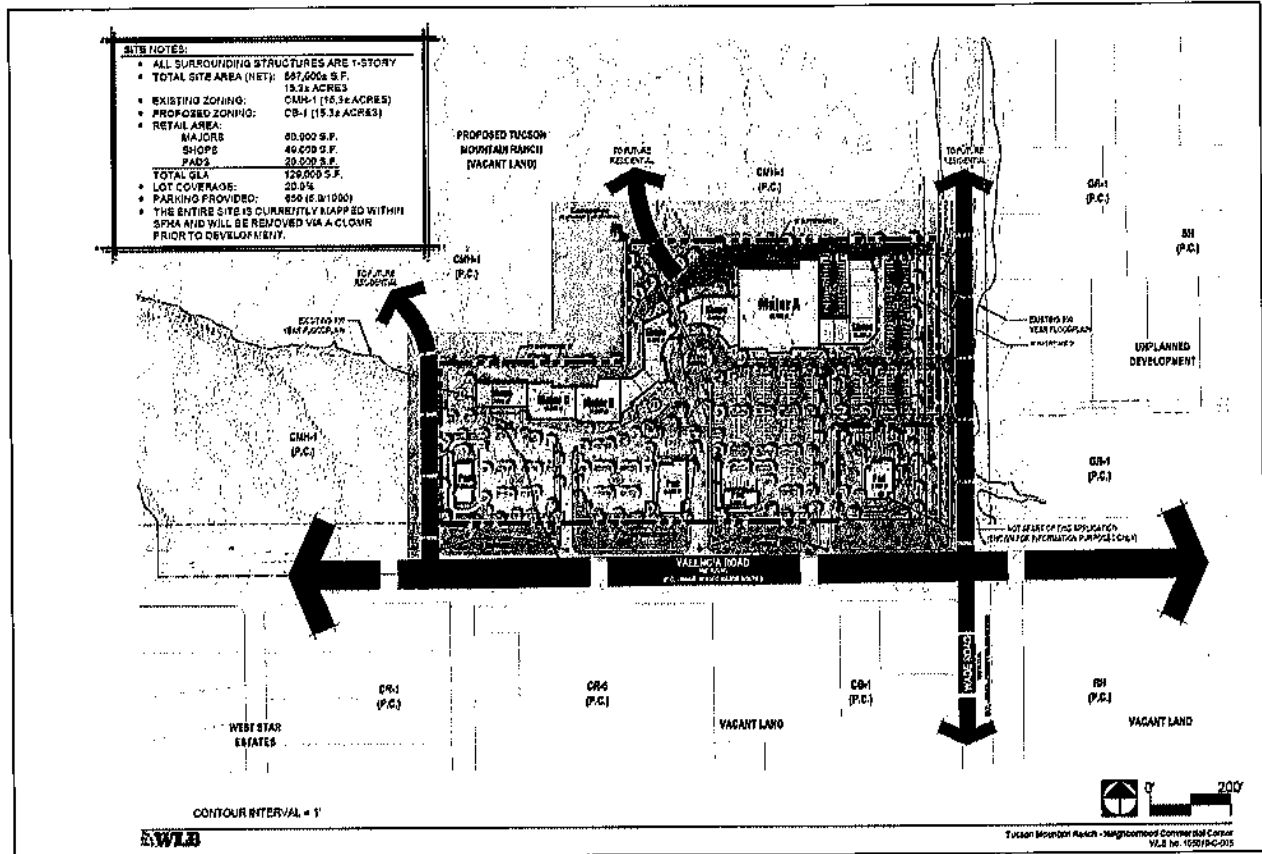
EXHIBIT II-B-1a - PRELIMINARY DEVELOPMENT PLAN w/ CLUSTER DEVELOPMENT

CONTOUR INTERVAL = 1'

Appendix D: Traffic Impact Study

Tucson Mountain Ranch – Neighborhood Commercial Corner

Traffic Impact Study



Prepared for submittal to:
Pima County, AZ

M Esparza

Engineering, LLC

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August 18, 2015

Tucson Mountain Ranch – Neighborhood Commercial Corner Traffic Impact Study

Prepared for submittal to:

Pima County, Arizona

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Project No. 2015.03

Marcos Esparza, P.E., Principal



August 18, 2015

NOTICE – This is NOT a Public Domain Document

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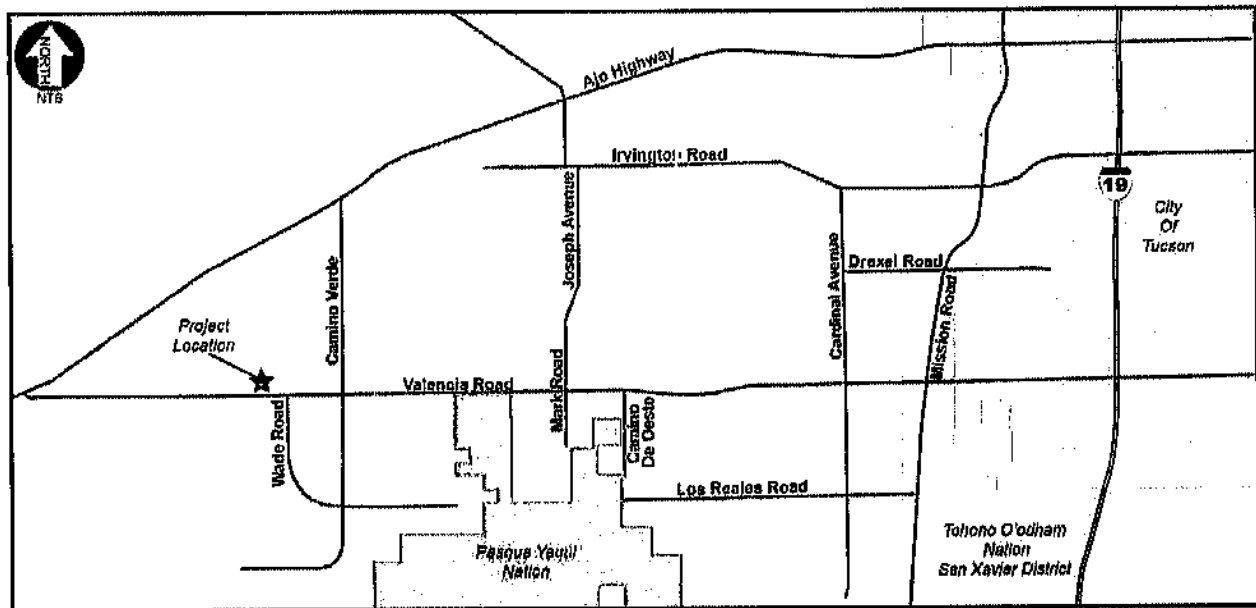
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1. Introduction and Executive Summary

This traffic impact study (TIS) supports a rezoning application and identifies the transportation-related impacts of a proposed commercial development within the Tucson Mountain Ranch development located on the northwest corner of the Valencia Road/Wade Road intersection. The site location is shown in Exhibit 1.

Exhibit 1 Site Location



Development Description

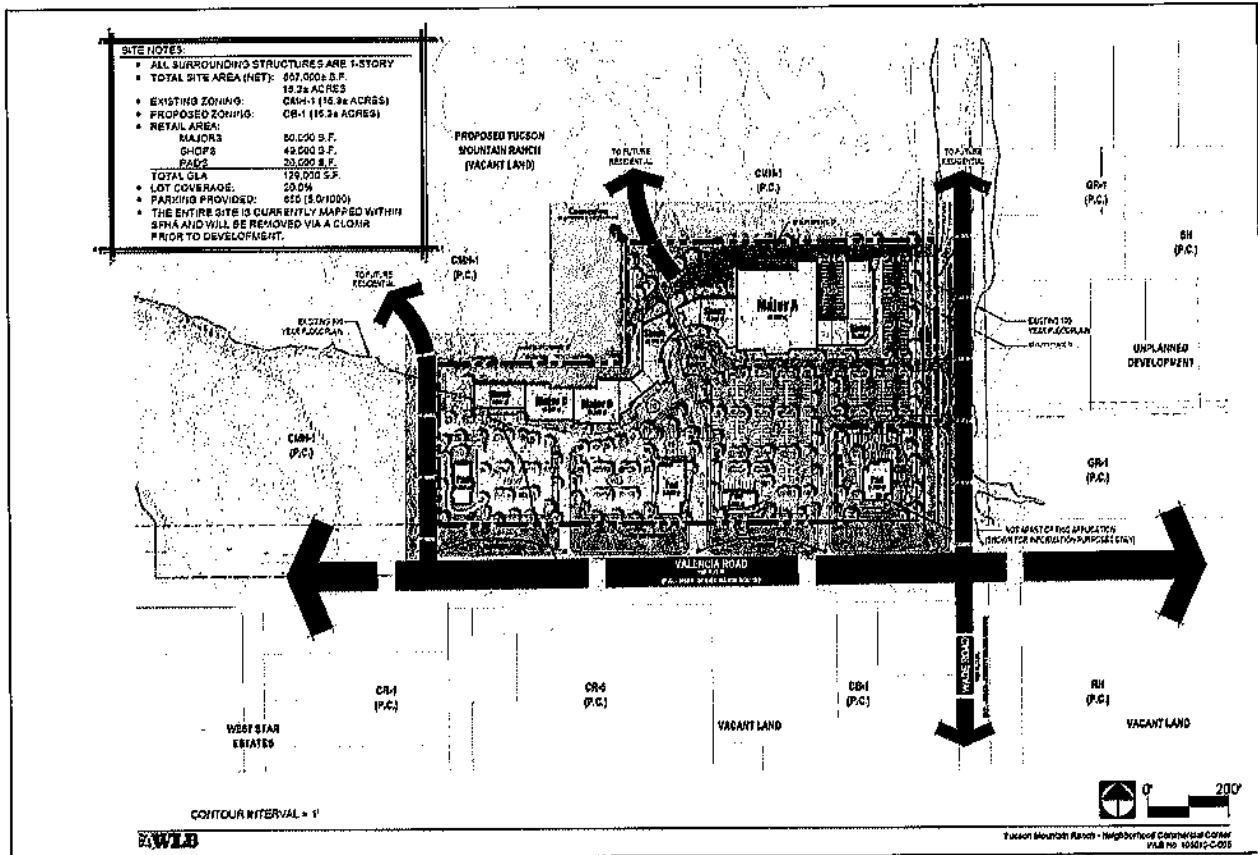
The site plan is shown in Exhibit 2 and on this report cover. The land uses shown are representative of what is in a "Shopping Center", as defined by the Institute of Transportation Engineers' *Trip Generation Handbook*. This project is part of the larger Tucson Mountain Ranch development which includes other commercial uses and a large residential component. This TIS considers only the impacts of the 15.3 acre parcel on the northwest corner of the Valencia Road/Wade Road intersection. There is a 1.5 acre parcel at the northwest corner of the intersection already zoned CB-1 – this small parcel is not included in the rezoning application. However, we have included it in the traffic analysis under the assumption that it will be constructed concurrently or at a time close to the construction of the 15.3 acre parcel.

Trip generation rates and the resulting trips estimates are provided herein. Applying average rates for this use yields 124 am peak hour trips, 479 pm peak hour trips and 5,508 weekday trips.

The site plan is from the Rezoning Site Analysis which was previously submitted to Pima County. It shows the potential location of the land use types, open space and access points. It shows six vehicular access locations; three on Valencia Road and three on an extension of Wade Road north of Valencia Road.

The proposed land use scenario is shown in Exhibit 3. Specific tenants have not been identified.

Exhibit 2 Preliminary Site Plan



Source: The WLB Group

The current zoning is County Manufactured and Mobile Home Zone 1 (CMH-1). The developer is submitting a rezoning application for Local Business Zone (CB-1) designation and has submitted a Rezoning Site Analysis (dated September 23, 2014). Pima County has required a Traffic Impact Study to support the rezoning application.

Exhibit 3 Land Use Scenario

Buildings	Area (sq ft)
Major Tenant A	40,000
Major Tenant B	10,000
Major Tenant C	10,000
Pads	20,000
Shops	49,000
Total	129,000

This TIS, along with other documents supporting the project's rezoning application is subject to approval by the Town. This study has been prepared in accordance with Pima County's *Subdivision and Development Street Standards*, which provides guidance on conducting traffic studies within Pima County. The project is a small scale development expected to generate fewer than 500 trips during the peak hour.

Accordingly, this report is a Category 1 TIS. We have estimated that the project will have a build out year of 2017.

The specific study objectives are:

- Evaluate existing intersections adjacent to or near the project site including:
 - Valencia Road/Wade Road (Signalized)
 - Valencia Road/Camino Verde (Signalized)
- Evaluate the impact of the project on the following streets:
 - Valencia Road
 - Wade Road
 - Camino Verde
- Evaluate the feasibility and operations of the proposed driveway locations with regard to their impacts on Valencia Road and Wade Road;
- Evaluate the effects the proposed development will have on pedestrian, bicycle and transit activity in the area.
- Provide recommendations to mitigate (if necessary) undesirable traffic conditions that the project may create.

Principal Findings

This project is located on the northwest side of the Valencia Road/Wade Road intersection.

The project will generate:

- 124 morning peak hour trips,
- 479 evening peak hour trips,
- 5,508 weekday trips.

This trip generation does not include the remainder of the Tucson Mountain Ranch development. It is expected that the full impact of the Tucson Mountain Ranch development may require additional transportation infrastructure improvements.

Access to the project will be at three driveways on Valencia Road and three driveways on an extension of Wade Road to the north. There is approximately 1800 feet from the Valencia Road/Wade Road to the next intersection to the west, Valencia Road/Star Diamond Place. The current Valencia Road widening plans (Pima County Proj No. 4RTVMW) show a raised median on Valencia Road from Wade Road to Star Diamond Place. It is possible that a median opening can be provided within this span that could provide full access for the westernmost project driveway. The center and eastern driveways would be right-in, right-out only driveways.

Wade Road currently does not extend north of the intersection along the same alignment from the south. There is an existing unpaved north/south road that provides access to residences north of Valencia Road. This unpaved road is offset by approximately 100 feet east of the paved Wade Road alignment to the south. Ideally, a new north access leg at this intersection should include access to the existing residential properties on the east side of Wade, north of Valencia Road.

Turn lanes are not numerically warranted for all westbound right turns at the project driveways on Valencia based on Pima County's criteria for right turn bays. Left turn lanes are not warranted at the driveway locations on Wade Road. At the Valencia/Wade intersection, a southbound left turn lane and a westbound right turn lane are numerically warranted. An eastbound left turn lane is warranted at this intersection, but is being constructed with the Valencia Road widening project.

Based on preliminary analyses, the unsignalized project driveways on Valencia Road and Wade Road will operate at LOS B or better during the peak hours. The intersections of Valencia Road/Wade Road and Valencia Road/Camino Verde will operate at LOS D or better during the peak hours.

A preliminary queuing analysis shows that the southbound Wade Road left turn lane at the Valencia Road/Wade Road intersection will need to be 74 feet long to accommodate 95th percentile queue lengths based on the Synchro analysis and the impact of this project, but should be constructed to a minimum of 110 feet. However, it is recommended that a longer turn lane be constructed to anticipate the impact from the entire Tucson Mountain Ranch project. It may be reasonable to design the north leg as a three-lane roadway with one through lane in each direction and a two-way left turn lane. A westbound right turn lane at the same intersection is also warranted based on the estimated project traffic, and should be constructed to a minimum 150 foot length. However, it is likely that the build out of the remainder of the Tucson Mountain Ranch development may require a longer westbound right turn lane.

Sidewalks and bike lanes will be constructed on Valencia Road and Wade Road along the project frontage.

Adequate sight distance meeting Pima County's requirements in the *Pima County Subdivision and Development Street Standards* at the project intersections must be provided.

All signs and pavement markings must conform to the *MUTCD* and Pima County requirements.

2. Proposed Development

Site Location and Site Plan

The project is in unincorporated Pima County. It is on the northwest corner of the Valencia Road/Wade Road intersection. The existing site is undeveloped. The site plan is shown in Exhibit 2.

Land Use and Intensity

The project includes several buildings comprising 129,000 square feet of “shopping center” uses. The buildings are listed in Exhibit 3.

Site Access

Access is shown at three locations along Valencia Road and at three locations on Wade Road.

Access Geometrics

The conceptual plan shows the driveways to be spaced more than 230 feet apart on Valencia Road which meets Pima County criteria for 45 mph roadways. Two of the driveways on Wade Road are approximately 125 feet apart, center to center which meets Pima County criteria for a 30 mph roadway, with the other spacing over 125 feet apart. The corner clearances from the potential location of a traffic signal to the closest project driveways on Valencia Road and on Wade Road also meet Pima County’s clearance criteria.

Development Phasing and Timing

For the purposes of this analysis, the project is projected to open around 2017.

3. Study Area Conditions

Study Area

The study area includes the intersections of Valencia Road/Wade Road and Valencia Road/Camino Verde. The Valencia Road/Wade Road intersection is adjacent to the project and the Valencia Road/Camino Verde Road intersection is ½ mile to the east of the project. Both are signalized intersections. The analysis also includes operations at the project access driveways, and the segments of Valencia Road and Wade Road in the vicinity of the project. Aerial photos are provided in Exhibit 4.

Valencia Road was under construction to be widened to a four-lane desert parkway as part of a Regional Transportation Authority project during the preparation of this TIS. In March 2015, a southern connection of Camino Verde from Valencia Road south to Brightwater Way/Valley Stream Drive was opened, thus adding the fourth leg (south) to the Valencia/Camino Verde intersection. The photos shown in Exhibit 4 represent the configuration of the two intersections prior to the opening of the south leg of Camino Verde and prior to the start of the Valencia Road widening project.

Anticipated Future Development

Pima County's 2007 Southwest Infrastructure Plan provides a basis for infrastructure planning in the area in which the project is located. The plan assumes that Valencia Road will be widened from Ajo Way to Mark Road to a four lane facility by the year 2040. This is consistent with the current 2040 Pima Association of Government's Regional Transportation Plan and the Regional Transportation Authority Plan.

Nearby development projects include a proposed commercial development on the southwest corner of Valencia Road/Wade Road.

Site Accessibility

The site will be accessed from Valencia Road and an extension of Wade Road north from Valencia Road.

Existing and Future Area Roadway System

Valencia Road is currently being widened to a four-lane divided desert parkway between Mark Road and just west of Wade Road. It is projected to be completed by spring 2016.

This project is one of three Valencia Road widening projects currently planned. The next project will be from Wade Road to Mountain Eagle. The third project will be from Mountain Eagle to Ajo Way. These projects are all RTA funded projects.

In March 2015, Camino Verde was extended from Valencia Road south to Brightwater Way/Valley Stream Drive in the Star Valley Development. This connection has resulted in a redistribution of traffic from Wade Road to Camino Verde south of Valencia Road.

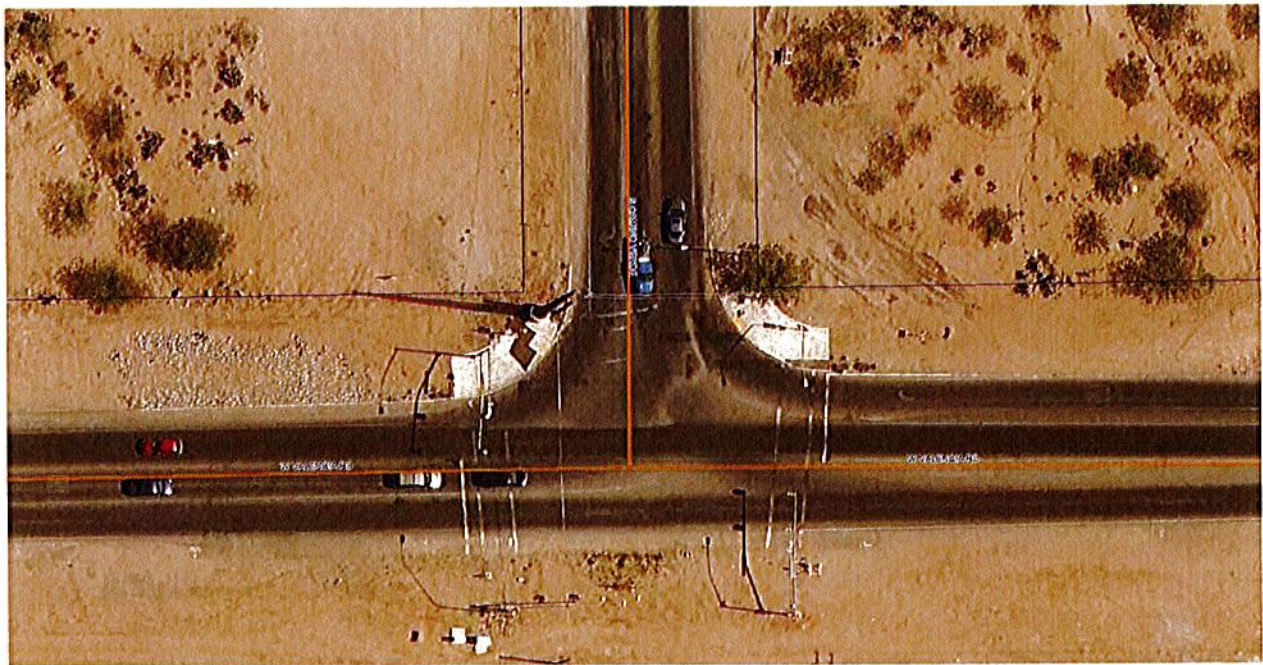
Site Circulation

The on-site circulation is shown in the site plan. However, it will likely evolve as the development plan is prepared.

Exhibit 4 Aerial Photos



Valencia Road/Wade Road Intersection (Prior to Widening of Valencia Road)



Valencia Road/Camino Verde Intersection (Prior to Valencia Road widening and opening south Camino Verde leg)

4. Analysis of Existing Conditions

Physical Characteristics

Roadway Characteristics

Exhibit 5 is an inventory of the physical features and recorded volumes of the project area roadways including Valencia Road, Wade Road and Camino Verde Road.

Valencia Road is a Scenic Major Route according to Pima County Major Streets and Scenic Routes Plan. It has a posted speed limit of 45 mph east of Wade Road and 50 mph west of Wade Road. It is an undivided two-lane roadway west of the Casino del Sol (approximately 1.5 miles east of the project area). It is currently under construction to be widened to a four-lane divided desert parkway from the Casino del Sol to just west of Wade Road. It will have bike lanes and sidewalks.

Wade Road is a two-lane collector from Valencia Road south to its connection with Los Reales Road. It has a posted speed limit of 35 mph. There are bike lanes along both sides of the road. It is the main road through the Star Valley residential development. North of Valencia Road, Wade Road is an unpaved local road providing access to residential uses to the east of the project site. The north unpaved road is offset approximately 100 feet east of the Wade Road alignment south of Valencia Road.

Camino Verde is a two-lane collector from Ajo Highway to south of Los Reales Road. The section from Valencia Road to Brightwater Way was recently opened as a two lane roadway. North of Valencia Road, Camino Verde has a posted speed limit of 45 mph. North of Valencia Road it has unpaved shoulders and provides access to mostly residential uses. South of Valencia Road is has a posted speed limit of 35 mph. There are bike lanes along both sides of the road, and a walking path along the west side. It provides access to the Star Valley neighborhood.

Exhibit 5 Roadway Inventory – Existing Conditions

Roadway Volumes

Roadway Segment	Lanes*	Year of Recorded ADT	Recorded ADT	2015 ADT***	LOS D Threshold**	LOS D Threshold Met?	Speed Limit	Bike Route	Bus Route	Sidewalks
Valencia Road: West of Wade Road	2	2013	8,806	9,334	15,930	Not Met	50	No	None	No
Valencia Road: Wade Road to Camino Verde	4	2013	15,593	16,529	35,800	Not Met	45	Future BRSS	None	With Current RTA Project
Valencia Road: East of Camino Verde	4	2013	12,886	13,659	35,800	Not Met	45	Future BRSS	None	With Current RTA Project
Wade Road: South of Valencia	2	2013	7,503	7,953	15,540	Not Met	35	BRSS	None	No
Camino Verde: North of Valencia	2	2014	7,636	7,865	15,540	Not Met	45	No	None	No
Camino Verde: South of Valencia**	2	2015	Not Collected	N/A	15,540	N/A	35	BRSS	None	SUP

*Analyzed Valencia Road as a 4-lane road from Wade to Camino Verde under existing conditions.

**Did not include volumes for the south leg of Camino Verde under existing conditions.

***Assumed 3%/year growth

****FDOT Generalized Annual Average Daily Volumes Table, 2012.

Note: Bike Route designations from Tucson Bike Map. BRSS = Bus Route with Striped Shoulders; SUP = Shared Use Path

Transit Service

SunTran Route 29 (Valencia) is the closest route to the project. Its western terminus is at the Casino del Sol Park and Ride lot approximately 1.75 east of the site.

Bicycle/Pedestrian Facilities

There are bike lanes on each side of Wade Road south of Valencia Road. Bike lanes and sidewalks will be included in the roadway widening of Valencia Road. There is a bike lane on each side of Camino Verde south of Valencia Road. There is a shared use path on the west side of Camino Verde south of Valencia Road.

Traffic Control Devices

The intersections of Valencia Road/Wade Road and Valencia Road/Camino Verde are both signalized with lagging left turn arrows.

Traffic Volumes

Existing (2015) roadway volumes were estimated from 2013 and 2014 traffic volume data provided by Pima County by applying a 3%/year growth rate and are provided in Exhibit 5.

Traffic volume patterns have recently changed at the project intersections due to the recent (March 2015) opening of the south leg of the Valencia Road/Camino Verde intersection. Peak hour intersection turning movement count data were collected by Pima County in 2014 at the Valencia Road/Camino Verde and Valencia Road/Wade Road intersections. Because we wanted to estimate the redistribution of traffic at the two intersections following the opening of the south leg at Valencia/Camino Verde, we collected peak hour (7-8 am, and 5-6 pm) turning movement counts at this intersection on April 8th and 9th 2015. We adjusted the 2014 turning movement counts with the April 2015 peak hour counts to estimate the redistribution of volumes at the two project intersections. These adjusted volumes are provided in Exhibit 6. The original volume data is provided in the appendix.

Level of Service

Level of service is a qualitative description of how well a roadway or intersection operates under prevailing traffic conditions based on traffic volumes and capacity. A grading system of A through F, similar to academic grades, is utilized. LOS A is free-flowing traffic, whereas LOS F is forced flow and extreme congestion. LOS D is generally accepted as the standard in urbanized areas although LOS E is sometimes accepted in more congested areas. Segment performance is often overshadowed by intersection performance when signals are closely spaced.

Roadway Performance

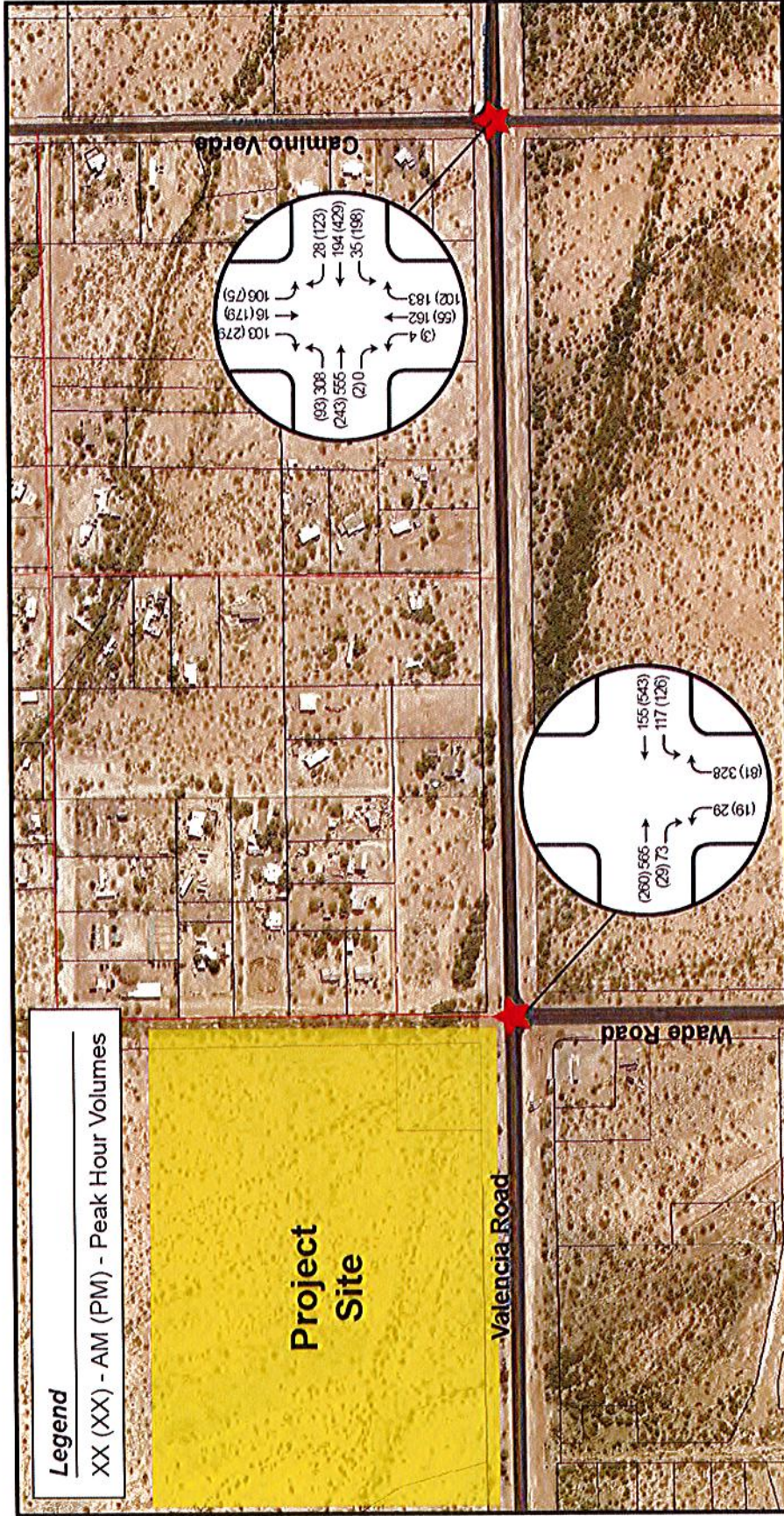
Based on daily level of service thresholds from the Florida Department of Transportation *Generalized Annual Average Daily Volumes for Florida's Urban Areas Level of Service Tables*, a four-lane divided roadway can carry up to approximately 35,800 vehicles per day (vpd) at LOS D.¹ A two lane divided roadway can carry approximately 15,540 vpd at LOS D. Therefore, based on the adjusted 2015 volumes, the sections of Valencia Road, Wade Road and Camino Verde operate at acceptable levels of service. It should also be noted that for projects in urban areas, or areas approaching areas, performance is more dependent on intersection conditions than the roadway segments.

¹ Florida Department of Transportation– *General Annual Average Daily Volumes for Florida's Urbanized Areas, 2012.*

Intersection Performance

Under existing conditions, both intersections in the study area operate at LOS D with all lane movements operating at LOS D or better during the morning and afternoon/evening peak hours. The results are shown in Exhibit 7.

Exhibit 6 Existing Peak Hour Volume



Sources: Pima County, M Esparza Engineering

Exhibit 7 Intersections Performance (Existing Conditions)

Valencia/Camino Verde

		Existing 2015			
		AM		PM	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Eastbound					
	Left	26.5	C	19.8	B
	Through/Right	22.7	C	19.1	B
	Approach	24.1	C	19.3	B
Westbound					
	Left	19.1	B	21.1	C
	Through	18.6	B	21.3	C
	Right	17.2	B	17.8	B
	Approach	18.5	B	20.7	C
Northbound					
	Left	13.3	B	20.9	C
	Through	20.0	C	17.3	B
	Right	17.8	B	17.0	B
	Approach	18.8	B	17.2	B
Southbound					
	Left	16.3	B	14.5	B
	Through/Right	17.6	B	31.6	C
	Approach	17.0	B	28.9	C
Intersection		21.2	C	22.4	C

Valencia/Wade

		Existing 2015			
		AM		PM	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Eastbound					
	Left	8.6	B	8.0	A
	Through	10.7	B	9.0	A
	Right	8.8	B	8.0	A
	Approach	10.5	B	8.9	A
Westbound					
	Left	5.5	A	4.4	A
	Through/Right	4.1	A	4.5	A
	Approach	4.7	A	4.5	A
Northbound					
	Left	12.4	B	10.6	B
	Through/Right	13.4	B	10.6	B
	Approach	13.3	B	10.6	B
Southbound					
	Left	N/A	-	N/A	-
	Through/Right	N/A	-	N/A	-
	Approach	N/A	-	N/A	-
Intersection		9.9	A	6.4	A

Safety Related Deficiencies

Pima County publishes crash statistics in an annual Safety Management Report. The 2013 Safety Management Report includes segment crash data from January 1, 2011 to December 31, 2013. Crash data for the segments of Valencia Road, Wade Road and Camino Verde in the vicinity of the project are in Exhibit 8A.

Pima County applies a procedure that calculates a priority index (P.I.), by adding the rank of the volume, crash frequency, crash rate and severity index (a National Safety Council-developed index) to rank locations for corrective measures. A priority rank of "1" would rank the highest in terms of needing corrective action. Based on this methodology, the lower the priority index (i.e., closer to "1"), the higher the priority index rank and the more critical the need for corrective action. Two of the project segments, one on Valencia Road and the other on Camino Verde, have accident rates of over 1.00 crashes per million-vehicle miles. The segment on Camino Verde from Valencia Road to Drexel Road has a priority index rank, "20", in the SMS for roadways carrying under 10,000 vpd. Valencia Road is programmed to be widened to a four lane section from Mark Road to Ajo Way, and therefore these data on crashes are for informational and historical purposes only.

Exhibit 8A Roadway Segment Crash Rate Statistics

Segment	Length (miles)	3 Years: January 2011-December 2013					
		Volume	Crash Freq	Rate	SI	PI	PI Rank
Valencia Road, Ajo Way to Camino Verde	3.9	2,797	4.36	1.42	1.41	293	79
Valencia Road, Camino Verde to Mark Road	2.0	21,290	13.00	0.56	1.45	185	63
Camino Verde, Valencia Road to Drexel Road	1.0	7,636	18	2.15	1.71	170	20
Wade Road, Camino Verde to Valencia Road	1.3	7,503	6.92	0.84	1.87	338	107

Source: Pima County

Exhibit 8B Intersection Crash Rate Statistics

Segment	3 Years: January 2011-December 2013					
	Volume	Crash Freq	Rate	SI	PI	PI Rank
Valencia Road/Camino Verde	17,622	7	0.36	1.69	156	59
Valencia Road/Wade Road	16,413	15	0.83	1.33	128	44

Source: Pima County

5. Projected Traffic

Site Traffic Forecasting

Trip Generation

The future traffic from the project is estimated using the trip rates contained in the Institute of Traffic Engineers' *Trip Generation Handbook*, 9th Edition. The number of trips generated is the mathematical product of land use intensity (building square footage, number of dwelling units, etc.) and the trip generation rate. The result is the total number of one-way trips (not round trips) expected to be generated by the project. These trips represent the number of vehicles estimated to enter and leave the project. All of the estimates are based on average trip rates.

We applied average trip rates from the *Trip Generation Handbook* to estimate trip generation for the shopping center uses. Exhibit 9 shows the trip rates and estimated trip generation. Based on the average trip rates for the project land use, the project generates 5,508 daily one-way trips, with 124 trips during the am peak hour and 479 during the PM peak hour.

Exhibit 9 Trip Rates and Trip Generation

Trip Rates									
Proposed Use	Unit	No.Units	ITE Categ.	Weekday AM		Weekday PM		Avg Weekday	
				In	Out	In	Out	In	Out
Shopping Center	1000 SF	129.0	820	0.96		3.71		42.7	
				62%	38%	48%	52%	50%	50%

Trip Generation									
Proposed Use	Unit	No. Units	Weekday AM		Weekday PM		Avg Weekday		
			In	Out	In	Out	In	Out	
Shopping Center	1000 SF	129.0	124		479		5,508		
			77	47	230	249	2,754	2,754	

The *Trip Generation Handbook* also provides guidance on pass-by and diverted trip percentages for several land uses. The *Trip Generation Handbook* includes pm peak hour pass-by rates for the land use, Shopping Center. We applied the pass-by trip reductions to the gross trip generation during the pm peak hour to estimate the net trips for the project, as shown in Exhibit 10.

Exhibit 10 Pass-By and Net Trips

PASS-BY TRIPS	ITE Categ.	Pass-by Rate	Weekday AM		Weekday PM		Avg Weekday	
			In	Out	In	Out	In	Out
Shopping Center	820	34% PM	0		163		0	
			0	0	78	85	0	0

Net Trips	Unit	No. Units	Weekday AM		Weekday PM		Avg Weekday	
			In	Out	In	Out	In	Out
Shopping Center	1000 SF	129.0	124		316		5,508	
			77	47	152	164	2,754	2,754

Trip Distribution and Assignment

We distributed the site traffic with 30% both to the west and east on Valencia, 15% south on Wade, 15% north on Camino Verde, and 10% south on Camino Verde. The site trips at the project driveways and the off-site intersections are shown in Exhibit 11.

Non-Site Traffic Forecasting

Projections of Non-Site Traffic

We estimated year 2017 traffic volumes based on a 3%/year growth rate. Exhibit 12 shows the future turning movement intersection counts under the no-project condition for the year 2017.

Total Traffic

We added the site traffic volumes to the no-project traffic volumes for the year 2017, and deducted the pass-by estimates (pm peak hour only) to estimate the total traffic for the horizon year 2017. The resulting total peak hour turning volumes at the project intersections and driveways are illustrated in Exhibit 13.

Exhibit 11 Site Traffic Distribution

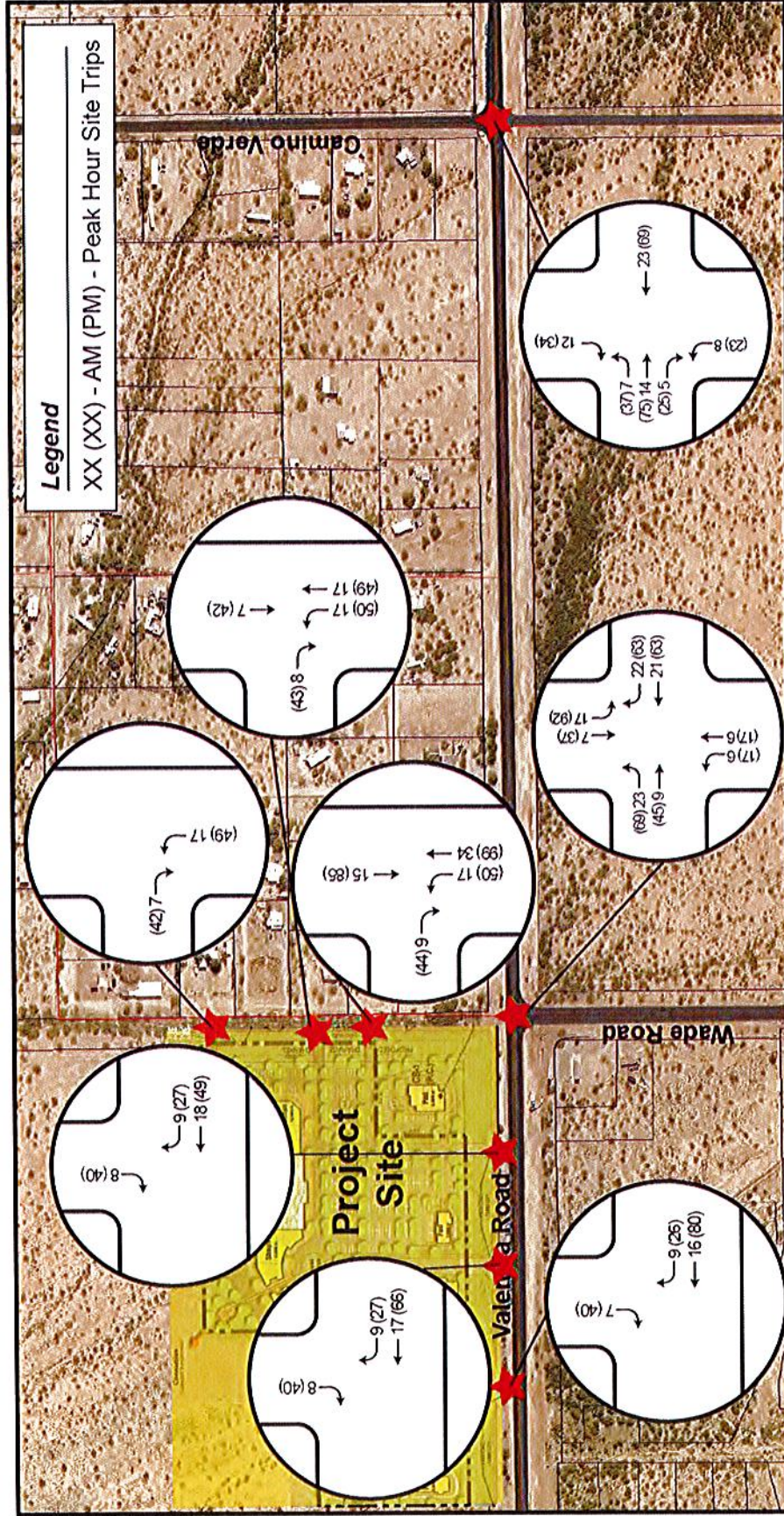


Exhibit 12 2017 Peak Hour Intersection Volumes – Without Project

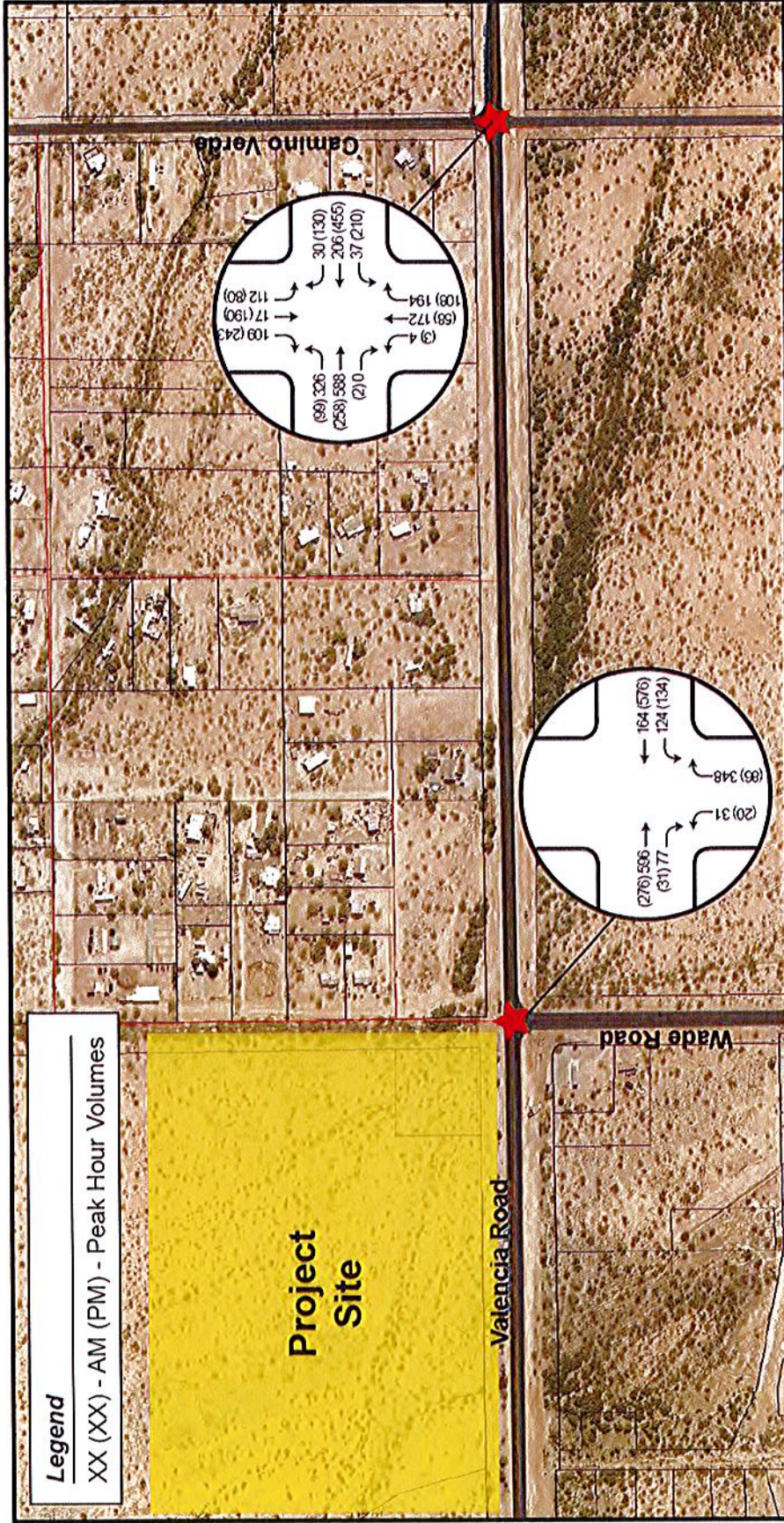


Exhibit 13 2017 With Project Peak Hour Volumes

