Valencia Road
Wade Road to Mark Road

Draft-Final Design Concept Report

October 2011

Pima County Department of Transportation
Pima County Project No. 4RTVMW
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Valencia Road
Wade Road to Mark Road

Draft-Final Design Concept Report

October 2011

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Pima County Department of Transportation
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Pima County Project No. 4RTVMW

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Executive Summary

This project involves the reconstruction of Valencia Road from Wade Road to Mark Road from a two-lane roadway into a four-lane arterial street. The entire project is located in unincorporated Pima County in Sections 9, 10, 11, 12, 13, 14, 15 and 16 of Township 15 South, Range 12 East. Location and vicinity maps are included as Figures 1 and 2.

On May 16, 2006, the citizens of Pima County approved a $2.1 billion transportation plan to be funded by a one-half cent increase in the sales tax. This transportation plan is overseen by the Regional Transportation Authority (RTA). Current project funding includes $14,562,000 from this RTA sales tax revenue. Other funding includes $6,026,000 in Surface Transportation Program revenue and $709,000 in Pima County Impact Fees for total funding of $21.297 million. It is estimated that this project will be advertised for bids in the spring of 2013. Construction is anticipated to be complete in late 2014.

This section of Valencia Road is slated to be a parkway in the Pima Association of Governments 2040 Regional Transportation Plan. Pima Association of Governments defines parkways as “roads that are connected to arterials and have divided medians. There may be a few grade separated intersections at major routes to help ease congestion. Access points are kept to a minimum for higher travel speeds. The normal posted speed limit is 45-55 mph.” The widening is needed to accommodate the heavy volumes of traffic projected in the year 2030. This section of Valencia Road is also impassable due to flooding several times a year. Constructing this new arterial roadway to current standards will increase traffic capacity and user safety in all weather conditions. Other needs identified in the Traffic Engineering Study include providing a continuous paved sidewalk on one side of Valencia Road, adding turn lanes at Wade Road, Camino Verde and Ignacio Baumea; and providing a new traffic signal at Wade Road.

The design speed for this project is 50 miles per hour (mph). It will be posted at 45 mph. The existing right-of-way width of 150-200 feet will be sufficient for the four-lane roadway. Landscaping will be provided in the median and in the area between the roadway and right-of-way line. Artwork will also be included with this project.

Drainage improvements will include a new multi-barrel culvert conveying the Black Wash, and eight other box and pipe culverts capable of conveying a 100-year storm. Only minimal channel work is anticipated.

Driveways will be provided to every property that currently has access to Valencia Road. Median openings will be provided at all side streets.

Recommendations for the final design of this project include:

- Provide two travel lanes in each direction on Valencia Road.
- Align the new centerline of Valencia Road along the section line.
- Provide a paved shoulder in each direction to accommodate bicyclists and other multi-uses.
• Raise the vertical profile of the roadway two to five feet to accommodate the cross drainage improvements.
• A new sidewalk shall be located approximately 9 feet from the edge of the roadway at the top of the foreslope, north of Valencia Road from Wade Road to Camino Verde and south of Valencia Road from Camino Verde to the eastern project limit
• Provide additional turn lanes at the major intersections as shown in Figure 6.
• No noise walls are warranted in accordance with the requirements of the Pima County Traffic Noise Analysis and Mitigation Guidance Policy. Rubberized asphaltic concrete shall be used as the top lift of the new pavement to help reduce noise levels.
• Replace existing native vegetation that must be removed with the same plant species or one that is commonly found in the project environment
• ITS conduit shall be installed along one side of Valencia Road.
• A new traffic signal is warranted at Wade Road. The existing traffic signal at Camino Verde shall be upgraded as necessary to accommodate the proposed roadway improvements.
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Appendix A – Construction Cost Estimate
Appendix B – Environmental Screening Matrix
Appendix C – Community Advisory Committee and Public Involvement Information
Appendix D – Stage I (15%) Construction Plans (Bound Separately)
1.0 Project Overview

1.1 Project Location
This project is located along Valencia Road from 0.42 miles west of Wade Road to the newly completed road improvements approximately 0.35 miles west of Mark Road. The project also includes reconstruction of approximately 800 feet of Camino Verde and 1700 feet of Wade Road to add turn lanes on these side streets. The official title of this project is “Valencia Road, Wade Road to Mark Road”. The Pima County Project Number is 4RTVMW. The Transportation Improvement Plan ID is 58.06 as listed in the Pima Association of Governments 2011-2015 table of funded projects. This project involves the reconstruction of Valencia Road from a two-lane roadway into a four-lane arterial street. This street will include a raised landscaped median for most of its length. The entire project is located in unincorporated Pima County in Sections 9, 10, 11, 12, 13, 14, 15 and 16 of Township 15 South, Range 12 East. A location map is included as Figure 1 and a vicinity map is included as Figure 2.

1.2 Authorization
The Pima County Board of Supervisors approved the contract for the design of this project in January, 2010. The notice to proceed was issued by the Director of the Department of Transportation on January 3, 2011. On May 16, 2006, the citizens of Pima County approved a $2.1 billion transportation plan to be funded by a one-half cent increase in the sales tax. This transportation plan is overseen by the Regional Transportation Authority (RTA). This plan calls for upgrading Valencia Road to a four-lane “desert parkway”. Current project funding includes $14,562,000 from this RTA sales tax revenue. This RTA funding is to be spread over the entire Valencia Road corridor from State Route 86 to Mark Road. Other funding includes $6,026,000 in Surface Transportation Program revenue and $709,000 in Pima County Impact Fees for total funding of $21.297 million.

1.3 Previous Work
A section of Valencia Road from 2,000 feet west of Mark Road to Camino de la Tierra was widened to five lanes in 2009. Another one-half mile of Valencia Road, along the frontage of the Casino del Sol was widened to five lanes in 2002. Consideration had been given to incorporating this segment into this project, but a pavement analysis performed in 2009 revealed that overlaying the pavement would not be cost effective. Also, the drainage analysis determined that the pavement needs to be raised to prevent overtopping in a 100-year storm.

Since the new roadway will follow the existing alignment, a Location Report was not required. A Final Traffic Report was prepared by Pima County Department of Transportation (PCDOT) in July, 2011. An Environmental Screening Matrix and Memorandum was submitted on April 14, 2011 and is included in Appendix B. It is anticipated that the Final Environmental Assessment and Mitigation Report will be sent to the Board of Supervisors for approval in December 2011. Construction is anticipated to start within the second period of the RTA plan, 2013 if no delays occur.

1.4 Project Need
This section of Valencia Road is slated to be a major arterial roadway in the Pima Association of Governments Metropolitan Transportation Plan. The widening is needed to accommodate the heavy volumes of traffic projected in the year 2030. Valencia Road is an important link between the City of
Tucson metropolitan area and State Route 86 leading to the town of Ajo and the tourist resort town of Puerto Penasco in Mexico.

There are also vertical deficiencies in the existing roadway profile which limit stopping sight distance. Drainage is a concern today with several complaints concerning flooding problems in the right-of-way (R/W). Valencia Road is impassable due to flooding several times a year. Constructing this new arterial roadway to current standards will increase traffic capacity and user safety in all weather conditions. The proposed improvements to this road will keep it functional during a 100-year storm.

The traffic safety needs will be addressed with providing a new traffic signal at Wade Road; and new left and right-turn lanes at Wade Road, Camino Verde and Ignacio Baumea. The new raised median will separate opposing traffic, reducing the potential for head-on collisions. Pedestrian needs will be met with a new sidewalk, while a multi-use lane in each direction will accommodate bicyclists.

1.5 Construction Contracting and Administration Process

Pima County will prepare a complete construction bid package including completed construction drawings, contractor specifications, and a construction cost estimate. Following Federal Highway Administration (FHWA) authorization for construction, a bid advertisement will be made to invite contractors to submit a bid to construct the project improvements. The successful contractor will be awarded the work and PCDOT will provide oversight for the construction work. FHWA authorization is contingent upon approval of the construction bid package, National Environmental Policy Act clearance, utility clearance and R/W clearance.
Figure 1. Location Map
Figure 2. Vicinity Map

![Figure 2: Vicinity Map](image-url)
2.0 Project Description

2.1 Project Type and Termini

This project involves the complete reconstruction of the road into a desert parkway. The new roadway will have four travel lanes, a paved shoulder in each direction, a raised and landscaped median, and sidewalks on one side. The total length of project is about 2.61 miles from about 0.42 miles west of Wade Road to about 0.35 miles west of Mark Road. The improvements to Wade Road will extend about 1700 feet south of Valencia Road while the improvements to Camino Verde will extend about 800 feet north of Valencia Road.

The horizontal alignment will be centered on the existing section line. The vertical alignment was generally set as high as possible without allowing the fill slopes to fall outside of the R/W, thus avoiding the need to acquire slope easements. This elevated profile allowed for the placement of the cross drainage culverts with a minimal amount of downstream channel excavation which is especially important for the washes under jurisdiction of the United States Army Corps of Engineers (Corps). This profile varies from approximately two to five feet above the existing roadway.

2.2 Design andPosted Speeds

The design speed for Valencia Road, Wade Road and Camino Verde is 50 miles per hour (mph). They will be posted at 45 mph. The design speed for Ignacio Baumea is 40 mph with a posted speed of 35 mph.

2.3 Right-of-Way Width

The existing R/W width varies from 150 to 200 feet. This will accommodate the new roadway and no additional R/W will be required. Some drainage and temporary construction easements will be required in isolated locations.

2.4 Typical Sections

The typical roadway section from Wade Road to Camino Rancho will be a four-lane road with a raised median. From Camino Rancho to the east end of the project, the road will be a five-lane section. Both typical sections are shown in Figure 3.

2.5 Drainage Improvements

Drainage improvements will include a new multi-barrel 10’ X 5’ box culvert to convey the 100-year flood for the Black Wash under Valencia Road. Other cross drainage structures include six other box culverts and two pipe culverts capable of conveying a 100-year storm. Only minimal channel work is anticipated; however, upstream training dikes will be used to direct the flow through the culverts.

2.6 Utilities

Existing utilities include 6”, 12” and 42” water; 12” sanitary sewer, 4” natural gas, telephone, cable TV, underground electric; and overhead telephone and electric. It is anticipated that minor relocation of the underground lines will be required. The overhead electric poles are outside of the clear zone and should be able to remain in place except where they conflict with the drainage or other improvements.
utilities include a 9” El Paso high-pressure gas line and an 84” water line owned by the Central Arizona Project.

2.7 Access Control

Driveways will be provided to every property that currently has access to Valencia Road. Median openings will be provided at all of the section line and ¼ section line roads including Wade Road, Camino Verde, Viviana Road, and Camino Rancho. Median openings will also be provided at Star Diamond Place, South Arrow Road, Mardick Avenue and the midpoint between Viviana Road and Camino Rancho. These additional openings with left turn lanes will provide opportunities for u-turns. The Ignacio M. Baumea intersection and the main entrance to the Casino del Sol will have left turns allowed because of the five-lane roadway.

2.8 Pavement Marking and Signing

The pavement marking and signing will be installed by the roadway contractor. The pavement marking will be hot-sprayed thermoplastic striping with raised pavement markers. All signs and sign posts will be new with the existing signing to be salvaged and delivered to the Pima County Sign Shop.

2.9 Signalization and Lighting

The existing traffic signal at Camino Verde will be modified to accommodate the new road geometry while a new signal will be installed at Wade Road. Street lighting will be provided at signalized intersections only.

2.10 Landscape

Landscaping will be provided in the medians and the roadway shoulders to the R/W limit in accordance with the Pima County Roadway Design Manual (RDM), including the provisions for Environmentally Sensitive Roadways (ESR). The Arizona Community Tree Council’s Guide to Arizona Desert Shade Trees will be used as a resource in the selection of shade trees for placement near overhead electric power lines. Placement of landscape improvements will consider the existing underground utilities in the project area and follow sight distance requirements. An irrigation system will be installed as part of the landscaping.

2.11 Public Art

An artist will be hired by PCDOT to design artwork as part of the improvements.

2.12 Intersection Improvements

The intersections of Valencia Road with Wade Road, Camino Verde and Ignacio Baumea will include additional right and left turn lanes. The specific lanes to be provided are illustrated in Figure 6.

2.13 Safety Upgrades

Certain features of the project are included to comply with the Americans with Disabilities Act. These will ensure the project meets the accessibility guidelines. These include sidewalks meeting the minimum width and maximum slope criteria. Since the new Valencia Road is uncurbed, an analysis was performed to determine best location of the new sidewalk with respect to the new road. This analysis is documented in Section 10.1. The final decision was to locate the new sidewalk nine feet
from the edge of the new pavement. For budget reasons, it was agreed to provide sidewalk on only one side of Valencia Road. From Wade Road to Camino Verde, the sidewalk will be located on the north side of the road to provide convenient access to the adjacent homes. From Camino Verde to the east end of the project, the sidewalk will be located on the south side to serve the casino and to tie into the existing sidewalk on the east end which is located on the south side. Pedestrians will be able to cross Valencia Road safely at the signalized Camino Verde intersection.

Curb ramps will be provided at both signalized intersections with a maximum slope of 12:1 and truncated dome warning strips at the bottom of each ramp. Crosswalks will have a maximum cross slope of 2%. Traffic signals will have wheelchair accessible push buttons.

The cross slopes within the clear zone will be kept to 2% when there is no sidewalk as shown in Figure 3. Where sidewalk is to be built, the cross slope is reduced to 1%. The ends of the culverts fall outside of the clear zones. Occupational Safety and Health Administration-compliant barricade railing will be provided along the top of concrete box culvert headwalls and wingwalls. No guardrail is anticipated to be required for this project.
Figure 3. Typical Roadway Cross-Section
3.0 Project Area Characteristics

3.1 Existing Topography and Terrain

The existing terrain generally slopes gently to the northwest at between 0.8% and 1%. Along Valencia Road, the road follows the existing terrain and slopes up from Wade Road to Mark Road. The cross slope along Valencia is very mild with no major existing cut or fill slopes. There are shallow roadside ditches along Valencia Road for most of its length. The road widening can be accomplished mainly using 4:1 cut and fill slopes with no retaining walls or slope stabilization being anticipated. There are three isolated locations where the slope will be steepened to 2.5:1 to keep it inside the existing R/W.

3.2 Existing Roadway

Valencia Road currently functions as an arterial road. The existing roadway is uncurbed and has two twelve-foot travel lanes with two to four-foot paved shoulders for most of its length. At Wade Road and Camino Verde, left turn lanes have been added. A westbound right turn lane has also been added at Camino Verde. Finally, along the casino property, the road has been widened to five lanes with a continuous two-way left turn lane. The existing surface is asphaltic concrete.

The existing horizontal alignment is straight with the centerline of the existing road located about ten feet north of the section line. The vertical profile contains gentle grades varying from flat to 1%. There are several short dip sections for drainage, although in larger storms the entire roadway is submerged for a significant distance. The posted speed is 50 mph from Wade Road to Camino Verde and 45 mph from Camino Verde to Mark Road.

3.3 Existing Rights-of-Way

Valencia Road has a 150-foot existing R/W (75 feet on each side of the section line) with the following exceptions:

- West of Wade Road the R/W is 200-feet wide, 100 feet each side of the section line.
- From Viviana Road to Camino Rancho Road, there is 100-feet of R/W on the north side of the section line.
- From Ignacio M. Baumea to Mark Road, there is 90-feet of R/W on the north side.

The ownership of the adjacent property is approximately two-thirds public and one-third private. The public ownership includes the Arizona State Land Department, the Bureau of Land Management, the Pascua Yaqui Tribe and the Pima County Regional Flood Control District.

3.4 Existing Drainage

Drainage in the upstream watershed is highly complex and is characterized by large areas of sheet flow, braided channels, and coalescing flow between drainage corridors associated with the Tucson and Sierrita Mountains. The majority of the study area is located within designated Federal Emergency Management Agency (FEMA) floodplain zones. Depth of flow associated with the FEMA floodplains varies from one to three feet. The Pima County Board of Supervisors has also adopted an Administrative Floodway associated with Black Wash, meaning that encroachment within the Black Wash floodway will not be allowed if proposed improvements cause a detrimental change in flood elevation, flow velocity, or flow diversion from natural conditions.
Pima County Ordinance 2005 FC-2, Title 16, Chapter 16.30 quantifies and mitigates impacts to floodplains by delineating areas of Regulated Riparian Habitat (RRH) designated by the Pima County Board of Supervisors. Washes within the project area feature RRH classified as xeroriparian B, and Important Riparian Areas (IRA) with underlying classification of hydro/mesoriparian or mesoriparian H and xeroriparian B. As explained in the RDM (Reference 3), the IRA designation is a Conservation Land System category of the Sonoran Desert Conservation Plan and contributes to the project’s ESR designation (see Section 7.1, Environmentally Sensitive Roadway Design Guidelines).

Black Wash has a drainage area of approximately 21.78 square miles upstream of Valencia Road. Black Wash drains the north side of the Sierrita Mountains and their alluvial plain. Watershed elevations range from 2480 to 4440 feet; watershed slopes range from less than 1% to over 20% in the mountains. The Black Wash, at its crossing with Valencia Road, has a 20-foot-wide sandy bottom with flat vegetated banks. The streambed is comprised of medium to coarse sand with some gravel and cobbles. The banks are vegetated with a typical assortment of desert vegetation, including mesquite, greasewood and other desert vegetation.

Other than Black Wash, the main offsite watersheds contain smaller braided natural washes. Storm runoff generated within the watersheds generally flow to the northwest. The watersheds are mostly undeveloped with some single family homes, mobile home parks and light commercial developments. The vegetative cover consists of natural desert shrub, even in most of the residential areas where property owners have generally elected to maintain the desert appearance of their land in lieu of lawns or formal landscaping.

Most of the watershed is located on the northern alluvial plain of the Sierrita Mountains. The area consists of gently sloping profiles with gradients of up to 1%. At the east end of the project a small wash on the north side of Valencia Road has its headwaters in the Tucson Mountains (Saginaw Hill). This wash enters the Valencia Road R/W from the northeast but then turns and flows northwesterly away from Valencia. Some flow from this wash overtops Valencia Road during a 100-year storm.

Pavement runoff is conveyed in existing roadside ditches to the west where it crosses the road in dip sections and flows to the northwest in existing washes. These ditches are typically quite shallow with minimal capacity.

A Preliminary Jurisdictional Delineation was prepared to determine the location of waters of the United States (WUS) within the project area. Four washes within the project area contain segments proposed as WUS and are subject to jurisdiction under the Corps. For all four washes, the proposed WUS are north of Valencia Road, where the channels feature jurisdictional characteristics. Black Wash is a major WUS transecting the project area.
3.5 Existing Utilities, Signals, and Lighting

The following existing utilities are in the project corridor:

<table>
<thead>
<tr>
<th>Owner</th>
<th>Utility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pima County Regional Wastewater Reclamation Department</td>
<td>6” and 12” sanitary sewer</td>
</tr>
<tr>
<td>Tucson Water</td>
<td>6”, 12”, 24” and 42” water</td>
</tr>
<tr>
<td>Tucson Electric Power</td>
<td>46 kV overhead electric</td>
</tr>
<tr>
<td>Southwest Gas</td>
<td>4” distribution gas</td>
</tr>
<tr>
<td>CenturyLink</td>
<td>Telephone</td>
</tr>
<tr>
<td>Trico Electric</td>
<td>25 kV overhead and underground electric</td>
</tr>
<tr>
<td>Comcast</td>
<td>Cable television</td>
</tr>
<tr>
<td>Pima County Traffic</td>
<td>Traffic signals and conduits</td>
</tr>
<tr>
<td>El Paso Natural Gas</td>
<td>9” high pressure gas</td>
</tr>
<tr>
<td>Central Arizona Project</td>
<td>84” water &amp; 115 kV overhead electric</td>
</tr>
</tbody>
</table>

There is an existing traffic signal at the Camino Verde intersection. There are street lights at this intersection, but Valencia Road does not have continuous street lighting. There are also street lights located at the two Casino del Sol entrances, the convenience store driveway, and at Ignacio Baumea. With the exception of Camino Verde, no street lights are located within the Valencia Road R/W.

3.6 Existing Biology

The project area is located within the known range of the federally endangered Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*), and provides suitable habitat for the federally recognized species of concern Western burrowing owl (*Athene cunicularia hypugaea*). Plant species protected under the Arizona Native Plant Act (A.R.S. §309-1 et. al) occur within the project area. Impacts to these species will be evaluated in a Biological Evaluation, which will include coordination with the United States Fish and Wildlife Service (USFWS) and Arizona Game and Fish Department (AGFD) to determine species-specific concerns and appropriate mitigation measures. The project area is within the area covered by the Pima County Multi-species Conservation Plan (MSCP) currently under USFWS review for a Section 10 permit. The Biological Evaluation will address Pima County MSCP species.

3.7 Archaeological and Historic Resources

A Class III cultural resources survey was conducted in June and September 2011 over the entire project area and a report (Reference 10) was prepared, in accordance with Section 106 of the National Historic Preservation Act of 1966. Three isolated occurrences and three roadside memorials were identified and recorded as a result of the 2011 survey. All of these isolated occurrences and roadside memorials are recommended ineligible to the National Register of Historic Places. A previous cultural resources survey, conducted in 1993, that covered a portion of the current project area, identified one site whose reported boundary intersected the current project area. This site, AZ EE:16:380(ASM), was reported in 1994 to have been heavily eroded, and was determined to be ineligible to the National Register of Historic Places by the State Historic Preservation Office on May 5, 1994. The 2011 cultural resources
survey found no trace of this site within the current project area. Given that there are no identified cultural resources (otherwise referred to as historic properties) that are eligible to the National Register of Historic Places within the current project area, a finding of “no historic properties affected” is recommended for the area of potential effect.

### 3.8 Existing Visual Resources

The background views along the corridor consist of the Santa Catalina Mountains to the north-northeast, the Rincon Mountains to the east, and Tucson Mountains to the west. The middle-ground views are dominated by xeroriparian and desert scrub vegetation. Scattered areas of low density residential development can also be seen in the middle ground. The foreground views are of Casino del Sol on the east end of the project, and a wide, unpaved, roadway shoulder that is predominately void of vegetation. At the wash crossings the plant density increases and is comprised of whitethorn acacia and velvet mesquite that screen views from and to the roadway.

According to Pima County’s *Major Streets and Scenic Routes Plan* map amended March 8, 2011, the segment of Valencia Road within the project area is a major, scenic route. According to Pima County Code 18.77.040, scenic routes are subject to certain requirements that primarily apply to development along the route. However, two requirements also apply to the roadway improvements. The first is that any walls shall have colors compatible with the surrounding natural landscape (desert/earth tones). The second is that all new utility lines shall be underground unless the line is a 46kV or greater transmission line.

### 3.9 Existing and Future Land Use

As shown in Figure 4, the current land use along Valencia Road includes single family homes, mobile homes on individual lots, a real estate office, a convenience store and a casino/hotel.

The existing zoning along Valencia Road is shown in Figure 5. It is Rural Residential (GR1) along the north side from Wade Road to Viviana Road and on both sides of Valencia Road from Drexel Road to Mark Road. On the north side from Viviana Road to Drexel Road, the Pascua Yaqui Tribe owns parcels zoned Suburban Ranch (SR) and Mixed Dwelling (CR-4). On the south side of Valencia Road, just west of Wade Road, the parcels are zoned for Multiple Residence (CR-5) and Local Business (CB-1). On the north side of Valencia Road, just west of Wade Road, the parcels are zoned for Manufactured Housing (CMH-1) and Local Business (CB-1).

Public land within the corridor includes two large state-owned parcels that are on the south side of Valencia Road from Wade Road to Camino Rancho. There is also a parcel on the north side, west of Camino Rancho owned by the Bureau of Land Management. These parcels are currently undeveloped.

Proposed development along the corridor includes the Star Valley Commercial Center proposed for the southwest corner of Valencia Road and Wade Road. The Pascua Yaqui Tribe is also pursuing a new development named La Luna which is on the north side of Valencia Road between Viviana Road and Camino Rancho. It is anticipated that the State Land property and the other empty lots will be developed at some point in the future. The entire corridor is included in the Pima County Southwest Infrastructure Plan. This Plan anticipates a neighborhood activity center on the north side of Valencia Road just west of Wade Road. For the State-owned property, it anticipates a low intensity (1-2
residences per acre) urban development, except for the Black Wash which is designated as “Resource Transition”.

The Casino del Sol is on Tribal Trust Land managed by the Pascua Yaqui Tribe. The Pascua Yaqui Tribe owns the La Luna subdivision described above.

### 3.10 Intergovernmental Agreements

There are two existing Intergovernmental Agreements that affect this project. The first is between Tucson Water and Pima County which provides for a 50-50 sharing of expenses for any water lines that must be relocated due to the reconstruction of a road by Pima County. The second Intergovernmental Agreement is between the Pima County RTA and Pima County. It provides for some of the funding of the design and construction of this project.
Figure 4. Land Use Map
Figure 5. Existing Zoning Map
4.0 Traffic and Accident Data

4.1 Traffic

General
A traffic analysis report was prepared by Pima County (Reference 1) to document existing and future traffic conditions; and to provide recommendations for number of through lanes, number and length of turning lanes at intersections, location of median openings, and the need for additional traffic signals.

The current average daily traffic volume along Valencia Road between Wade Road and Camino Verde is 14,800. In the year 2030, the traffic volume is expected to increase to 28,400 vehicles per day (vpd). From Camino Verde to Mark Road, the existing average daily traffic volume is 17,300 which is expected to increase to 33,100 vehicles per day (vpd) by 2030. A 2-lane arterial can handle up to 15,600 vpd with a Level of Service (LOS) of E while a 4-lane arterial can handle up to 32,900 vpd. Using LOS E was approved by the Pima County Traffic Engineering Department. Therefore, the proposed four-lane roadway section will satisfactorily handle this volume of traffic.

Intersections
The Wade Road, Camino Verde and Ignacio Baumea intersections were analyzed in the Traffic Report. The proposed turning movements are presented in Figure 6. These turning lanes will be built with this project. With the additional through and turn lanes, the Wade intersection will operate at LOS C during the A.M. and P.M. peak hours while the Camino Verde intersection will operate at a LOS B during the a.m. peak hour and LOS E during the p.m. peak hour. A traffic signal is warranted at Wade Road. Cross walks will be installed at both Wade Road and Camino Verde.

Parking, Pedestrians and Bicycle Movements
There is existing sidewalk along the south side of the newly constructed section of Valencia Road just west of Mark Road. There is no other sidewalk in the project corridor. Sidewalk along the south side of Valencia Road from Camino Verde to the east end of the project will be part of the proposed improvements. Sidewalk will also be built on the north side of Valencia Road from Wade Road to Camino Verde.

The six-foot paved shoulders to be built with this project will serve as multi-use lanes with bike lanes as one of its uses. “Bike Route” signs and pavement markings will be provided.

Transit
Sun Tran has an existing bus route (27) that runs along Valencia Road from the east and terminates in a Park and Ride lot at the Casino del Sol. Although the RTA includes a future bus route on Valencia Road that extends to State Route 86 in their transit plan, Bob McGee of Sun Tran stated that there are currently no plans to extend the bus service further west on Valencia Road. There are no existing or future bus stops within the project limits.
Figure 6. Proposed Turn Lanes
4.2 Accidents

Crash data were obtained for the 3-year period from July 1, 2007 to June 30, 2010. During this period, there were 15 accidents on the roadway segment between Iberia Avenue and Camino Verde, 15 accidents between Camino Verde and Camino Rancho, and 22 accidents between Camino Rancho and Mark Road. The average crash rate for this roadway varied from 0.69 to 1.06 crashes per million vehicle miles. The average crash rate for Pima County was 1.32 crashes per million vehicle miles for this same three-year period. Accident data for the intersections are kept separately and break down as shown in Table 2:

<table>
<thead>
<tr>
<th>Intersection with Valencia Road</th>
<th>Number of crashes (2007–2010)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wade Road</td>
<td>9</td>
</tr>
<tr>
<td>Camino Verde</td>
<td>23</td>
</tr>
</tbody>
</table>

The accident data shows that rear end crashes made up 44% (4 of 9) of the accidents at the Wade Road intersection and 61% (14 of 23) of the accidents at Camino Verde. They also made up 42% (22 of 52) of the crashes along Valencia Road. Rear end crashes were the most common type of accident in the corridor. By adding more through lanes as well as left and right turn lanes at several of the intersections will mitigate this type of accident.
5.0 Design Standards and Criteria

5.1 Geometric Standards

The roadway will be designed in accordance with American Association of State Highway and Transportation Official’s (AASHTO’s) A Policy on Geometric Design of Highways and Streets (Reference 2), the RDM (Reference 3), and AASHTO’s Roadside Design Guide (Reference 4).

5.2 Design Standards

Design standards for this project include the RDM (Reference 3), the City of Tucson/Pima County Standard Details for Public Improvements (Reference 5), AASHTO’s Guide for the Development of Bicycle Facilities (Reference 6), and FHWA’s Manual on Uniform Traffic Control Devices (Reference 7). For traffic design, the design standards include the Pima County/City of Tucson Pavement Marking (Reference 12) and Signing (Reference 13) Design Manuals. The traffic signals and lighting will be designed using the Pima County Traffic Signal (Reference 14) and Street Lighting (Reference 15) Design Manuals.

5.3 Slope Standards

Most slopes behind the sidewalk will be 4:1. If a steeper slope is needed to avoid or minimize R/W acquisition, a maximum slope of 2H: 1V will be used. The geotechnical study (Reference 17) recommended that temporary cut or fill slopes not exceed 1.5H: 1V for stability. It also recommended that permanent cut or fill slopes shall not exceed 2H: 1V.

5.4 Pavement Structure

Using the information contained in Section 3.13 of the RDM (Reference 3), a Pavement Design Report will be prepared. The design criteria will be as follows:

- Design period – 20 years
- Seasonal variation factor – 1.6
- Level of reliability – 95%
- Change in serviceability index – 1.4
- Minimum Structural Number for Arterial Roadway – 2.64

5.5 Design Speed

The design speed for this project is 50 mph. It will be posted at 45 mph.

5.6 Drainage Design

The drainage design criteria applied for this project has been compiled from the scope of work and the RDM (Reference 3). It has been summarized here:

Offsite Drainage. Due to almost the entire project falling within a FEMA floodplain, the offsite drainage facilities shall convey a 100-year storm under the roadway. Runoff from a 100-year storm shall not be allowed to overflow to adjacent basins.
Onsite Drainage. The onsite or pavement drainage facilities shall consist of roadside ditches and convey the 10-year flows. The Pima County standards require that at least one lane in each direction must be free from flooding during the 10-year flood. However, for this project the ditches can be economically sized to keep the 10-year flow off of the paved surface.

5.7 Access Control and Access Management

In general, this roadway will not be access-controlled. The only exception will be that driveways will not be allowed within 150 feet of the curb line of the major intersecting streets (Wade Road and Camino Verde). Exceptions may be made for existing driveways on a case by case basis. All of the adjacent parcels have sufficient area for a car to turn around, therefore driveways will not be used to back out directly into the Valencia Road traffic. The raised median will reduce the availability of left turns, but median openings will be provided every ¼ mile with left turn lanes in both directions.

Due to the large lot size that currently exists along the corridor, the minimum frontage per lot is 165 feet with most lot frontage being 330 feet or greater. By limiting driveways to one per lot, the spacing of the driveways will be acceptable for a parkway. Managing access to the large, currently undeveloped parcels will be a key component of the access management plan for the corridor. These lots will be developed subject to the Pima County Subdivision and Development Standards which provide limitations on the location and spacing of access to arterial roads.

5.8 Cross Section Elements

The roadway classification for this section of Valencia Road is urban arterial. It will be designed to AASHTO and PCDOT standards as shown in Table 3.

<table>
<thead>
<tr>
<th>Typical section</th>
<th>Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inside traffic lane</td>
<td>11 feet</td>
</tr>
<tr>
<td>Outside traffic lane</td>
<td>11 feet</td>
</tr>
<tr>
<td>Right turn lane</td>
<td>11 feet</td>
</tr>
<tr>
<td>Right turn lane (against curb)</td>
<td>12 feet</td>
</tr>
<tr>
<td>Left turn lane (against curb)</td>
<td>12 feet</td>
</tr>
<tr>
<td>Left turn lane</td>
<td>11 feet</td>
</tr>
<tr>
<td>Paved Shoulder (Bike Lane)</td>
<td>6 feet</td>
</tr>
<tr>
<td>Median</td>
<td>20 feet (22 feet including inside shoulders)</td>
</tr>
<tr>
<td>Clear zone</td>
<td>22 feet from vehicle travel lane per AASHTO (Reference 4)</td>
</tr>
<tr>
<td>Sidewalks</td>
<td>5 feet wide (typical), 6 feet when located at back of curb</td>
</tr>
</tbody>
</table>

Note: See Figure 3.

Turn lanes will be provided at the Wade Road, Camino Verde, Mardick Avenue, Viviana Road and the Ignacio Baumea intersections as recommended in the Traffic Report discussed in Section 4 of this report. Left turn lanes will also be provided at Star Diamond Place, South Arrow Road, Camino Rancho and the midpoint between Viviana Road and Camino Rancho primarily to provide opportunities for u-turns.
5.9 Roadway Geometrics

There are no horizontal centerline curves on this project. Angle breaks of 1° 08’ or less will be used in lieu of a horizontal curve.

The maximum grade shall not exceed 3%. Since the new road will not be curbed, the minimum grade shall not be less than 0.3%.

5.10 Right-of-Way Width

The existing minimum R/W width which varies from 150 to 200 feet will be sufficient for the proposed improvements. Some new drainage and temporary construction easements will be required to build the new channels, dikes, and driveways.
6.0 Major Design Features

6.1 Horizontal and Vertical Alignment

The construction centerline of Valencia Road will follow the section line. The only angle break will be at the section and quarter corners where the largest deflection is 0° 4' 42" which will be required to keep the road centerline on top of the section line. The new roadway profile generally has been raised to accommodate the new culverts. This profile was raised as high as possible while maintaining the fill slopes within the existing R/W. This minimized the extent of downstream channelization that would be required to daylight the culverts. Stage II (30%) construction plans are included as Appendix D.

6.2 Access Control and Access Management

There are 15 residential driveways that currently access Valencia Road, some of which serve multiple properties. Two driveways serve the convenience store, two serve the casino, one serves a Central Arizona Project pump station while another serves a real estate office.

Driveways will be provided to every property which currently has their primary access from Valencia Road. All of these parcels have sufficient area for a car to turn around; therefore backing out into Valencia Road will not be required. Access to vacant properties will be allowed through the normal Pima County permitting processes. Any new development will be subject to Pima County subdivision and Development Standards which will limit how access to an arterial such Valencia Road is allowed.

The Pima County design guidelines direct that median openings be placed no closer than 660 feet to other median openings. The preferred spacing is 1320 feet. The traffic report recommended four median openings along the project length. To optimize the locations where U-turns can be made, median openings will be provided every ¼ mile. Left turn lanes will be provided in both directions at each median opening.

6.3 Right-of-Way

A copy of the R/W requirements plan is shown in Figure 7. This plan includes the names and addresses of the affected property owners. A summary of the areas of easement acquisition is also included in Figure 7. No relocations will be required. Approval of the R/W clearance by Arizona Department of Transportation (ADOT) will be required.
Figure 7. Right-of-Way Requirements
6.4 Drainage

An initial drainage report covering the cross drainage impacts has been prepared by JE Fuller. (See Reference 8). The first step was to calculate the 100-year peak flows (Q100) in cubic feet per second (cfs) for each watershed. The results of these calculations are shown in Table 4.

Each of these watersheds was analyzed to determine the type of drainage improvements that would be required to convey the 100-year peak flow under Valencia Road. Alternative culverts were designed and analyzed. Table 4 presents the proposed culverts and their locations by station. The recommended culverts are shown in Table 4. At the east end of the project, the roadway was raised approximately two feet to eliminate overtopping from a wash that enters the R/W from the northeast at approximately Station 351+00. The wash runs along the northern R/W for approximately 300 feet and then turns away to the northwest.

Four washes within the project area are proposed jurisdictional washes. Constructing culverts in the washes would impact WUS. The culverts proposed for installation in proposed jurisdictional washes are identified in Table 4. Regulations and permitting associated with impacts to WUS are discussed in Section 7.9, Drainage, Floodplains and Clean Water Act.

<table>
<thead>
<tr>
<th>Jurisdictional Wash</th>
<th>Station</th>
<th>Q100 (cfs)</th>
<th>Proposed Culvert*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>237+10</td>
<td>530</td>
<td>2-10’ X 5’ RCBC</td>
</tr>
<tr>
<td>**</td>
<td>241+82</td>
<td>42</td>
<td>1-36” RCP</td>
</tr>
<tr>
<td>**</td>
<td>253+66</td>
<td>503</td>
<td>4-10’ X 5’ RCBC</td>
</tr>
<tr>
<td></td>
<td>258+20</td>
<td>59</td>
<td>1-36” RCP</td>
</tr>
<tr>
<td></td>
<td>278+40</td>
<td>250</td>
<td>1-8’ X 4’ RCBC</td>
</tr>
<tr>
<td></td>
<td>281+80</td>
<td>510</td>
<td>3-10’ X 4’ RCBC</td>
</tr>
<tr>
<td></td>
<td>289+70</td>
<td>298</td>
<td>1-8’ X 4’ RCBC</td>
</tr>
<tr>
<td>**</td>
<td>296+70</td>
<td>1995</td>
<td>9-10’ X 5’ RCBC</td>
</tr>
<tr>
<td>**</td>
<td>310+50</td>
<td>1511</td>
<td>9-10’ X 5’ RCBC</td>
</tr>
</tbody>
</table>

*RCBC = reinforced concrete box culvert, RCP = reinforced concrete pipe  
**Indicates proposed jurisdictional wash

A pavement drainage system will also be designed to keep a travel lane open in each direction during a 10-year storm. Since there are no outside curbs, this system will consist of properly sized roadside ditches.

6.5 Earthwork Considerations

The new roadway profile was set to accommodate the new culverts with a minimum of downstream channelization while also keeping the embankment slopes inside of the existing R/W. The new profile
generally resulted in excavation at the east end of the project and embankment along the rest of the alignment. The initial earthwork quantities are 16,000 cubic yards of excavation and 141,000 cubic yards of embankment. Therefore, approximately 125,000 cubic yards of borrow material will be required.

6.6 Intersections

The proposed improvements for the Wade Road intersection include dual westbound left-turn lanes. To receive these two lanes, two southbound lanes will be built on Wade Road for approximately 1200 feet south of Valencia Road. Single right and left-turn lanes will be provided for the northbound leg. A single right-turn lane will be provided for the eastbound leg of the intersection.

At the Camino Verde Road intersection, left-turn lanes will be provided for the eastbound and westbound legs. Separate right and left-turn lanes will be provided on the southbound leg. The westbound leg will have a separate right-turn lane.

For both the Wade Road and Camino Verde intersections, the design for left and right turns will be based on a WB-50 design vehicle. The U-turns will be designed for a passenger car design vehicle.

Vertical curb will be used on the returns of these two major intersections. This will help protect the traffic signal equipment and allow for the placement of access ramps.

At the Ignacio Baumea intersection, a westbound left turn lane and eastbound right turn lane will be provided. The existing northbound leg will remain unchanged with its separate right and left-turn lanes.

6.7 Utilities

The existing utilities were summarized in Section 3.5. The water lines will be impacted by the new cross drainage culverts and will be relocated under the roadway contract. The relocation of the gas, telephone and cable TV lines will be performed prior to the road construction. Some poles for the Trico Electric and Tucson Electric Power overhead electric lines are in conflict with the new culverts and will need to be relocated. Trico Electric has an underground electric line that must be relocated at the new culverts and some cabinets that must be relocated due to conflicts with the new embankment slope. This will be accomplished prior to the road work. No sanitary sewer relocation or pipe replacement is anticipated to be required.

The high voltage (TEP) electric line relocation must be performed between September and May. The high pressure gas line relocation must be performed between April and September. If the 42” water line in Valencia Road must be relocated, this work must occur between October and April. The 115 kV overhead line owned by the Central Arizona Project will not be impacted by this project.

No prior rights for the facilities owned by private utility companies, located within the public R/W, have been identified. Under an existing intergovernmental agreement, half of the water relocation costs incurred by Tucson Water will be paid for by Pima County. If necessary, any sanitary sewer relocation will be performed prior to construction. Manhole adjustments will be performed by the roadway contractor with those costs reimbursed by the Pima County Regional Wastewater Reclamation Department.
The utility clearance must be approved by ADOT.

6.8 Structures

There are neither walls nor bridges anticipated for this section of Valencia Road.

6.9 Roadway Cross Section & Pavement Design

The proposed roadway cross section is shown in Figure 3. Based on Section 3.13 of the RDM (Reference 3), a pavement design report will be prepared. The pavement structure assumed here for Valencia Road consists of two inches of asphalt-rubber asphaltic concrete over three inches of asphaltic concrete over fourteen inches of aggregate base. This is based on an assumed R-Value of 30 for the soil which will be determined during a geotechnical investigation to be performed in October. Both Wade Road and Camino Verde are assumed to be paved with five inches of asphaltic concrete over eight inches of aggregate base.

6.10 Traffic

Valencia Road will be designed with four travel lanes to provide a minimum Level of Service E in the year 2030. All intersections with signalization will receive lighting. This will include Wade Road and Camino Verde. The lighting at Mark Road will remain as it currently exists. Turn lanes will be provided at Wade Road, Camino Verde and Ignacio Baumea as shown in Figure 6. Conduits for future ITS along one side of Valencia Road between Mark Road and Wade Road will be installed.

The traffic signal at Camino Verde will be reconstructed to accommodate the proposed intersection widening. A new traffic signal will be added at the Wade Road intersection.

6.11 Construction Issues

The construction phasing scheme will be driven by the need to maintain traffic along Valencia Road. One proposed construction sequencing approach would be as follows:

1. Relocate the water lines. Pave detours on the south side of Valencia Road at the new culverts. Construct the downstream halves of the culverts. Construct the new westbound lanes. Additional paving will be added to the south side of Valencia Road as required to maintain two lanes of traffic.

2. Move the traffic onto the new westbound lanes with one lane in each direction. Construct the upstream halves of the new culverts. Construct the new median and eastbound lanes. Move traffic to the new roadway.

3. Complete final striping and landscaping.

Traffic control plans will be prepared by the contractor in accordance with Reference 7 and approved by the County. Access to all homes and businesses must be maintained during construction. While driveways are being built, temporary access may need to be provided to the residents. Refer to Section 6.7 for seasonal considerations related to scheduling of utility relocations.
6.12 Design Exceptions

Introduction
The study team compared the geometric design elements of the proposed Valencia Road improvements and the recommendations contained in AASHTO's A Policy on Geometric Design of Highways and Streets (2004) and the RDM (Reference 3). Design exceptions will be discussed in each category. The roadway classification is urban arterial.

Lane, Shoulder and Median Widths
The proposed lane widths will vary from 11 feet to 12 feet. AASHTO recommends 12 feet for a lane width but finds 11 feet acceptable for a reconstructed arterial. The RDM recommends 11 feet.

The outside paved shoulder width is six feet. AASHTO recommends six to eight feet for an outside shoulder. The RDM recommends six feet. The inside paved shoulder width is one foot throughout the project per the RDM. AASHTO does not recommend a minimum as long as the median curb is mountable as it will be on this project.

The RDM recommends a minimum median width of 20 feet which is used on this project. With the one-foot inside shoulders, the width will be 22 feet to satisfy the clear zone requirement.

Vertical Alignment and Stopping Sight Distance
For 50-mph, AASHTO recommends a minimum stopping sight distance of 425 feet. This project is being designed using the Pima County requirement for stopping sight distance of no less than 425 feet. All new vertical curves for Valencia Road meet this criterion.

Horizontal Alignment and Superelevation
AASHTO recommends the superelevation is not to exceed 12% for a high speed urban street. Pima County allows a maximum superelevation rate of 4% for urban streets. There are no curves used on Valencia Road. The maximum angle point of 1°08’ specified by the RDM will be adhered to.

Design Speed
For urban arterial roadways, AASHTO recommends a design speed of 40 to 60 mph. Pima County has specified a design speed of 50 mph for this project.

Grades
AASHTO recommends a maximum grade of 6% for urban arterials in level terrain. The RDM specifies a maximum grade of 3%, which will be followed. Due to the absence of outside curbs on this project no minimum grade is required; however 0.3% will be used to minimize the cost of a drainage system if curbs are added in the future.

Cross Slope
The AASHTO recommended cross slope range for travel lanes is 1.5% to 2.0%. The travel lanes on this project will have a cross slope of 2.0%.
Design Exceptions

No design exceptions from the AASHTO or Pima County controlling design criteria will be necessary.
7.0 Social, Economic, and Environmental Considerations

7.1 Environmentally Sensitive Roadway Design Guidelines

This project falls under the ESR Design Guidelines which are documented in Chapter Four of the RDM (Reference 3). These guidelines establish general recommendations for roadway improvements. For this project, the pertinent recommendations include:

- Follow a Visual and Aesthetic Resource Evaluation Process created for ESR’s.
- Use a maximum design speed of 50 mph.
- Use minimum lane widths.
- Use a maximum of four lanes.
- Consider larger culverts for wildlife.
- Noise walls are considered appropriate only when shown to enhance biological or cultural/historical resources.
- Revegetation should occur with species found in the project environment.

7.2 Biological Resources

The project area is located within the known range of the federally endangered Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*), and provides suitable habitat for the federally recognized species of concern Western burrowing owl (*Athene cunicularia hypugaea*). Plant species protected under the Arizona Native Plant Act (A.R.S. §309-1 et. al) occur within the project area. Impacts to these species will be evaluated in a Biological Evaluation which will include coordination with the USFWS and AGFD to determine species-specific concerns and appropriate mitigation measures. The project area is within the area covered by the Pima County MSCP currently under USFWS review for a Section 10 permit. The Biological Evaluation will address Pima County MSCP species.

The project contains native plant species subject to Pima County’s Native Plant Preservation Ordinance. Mitigation will be performed in accordance with the Environmentally Sensitive Roadway Design Guidelines (Chapter Four of the RDM, including the Appendix 4D update) which is designed to replace impacted native vegetation in densities and distribution matching the original landscape. Protected native plants being removed for the project may be salvaged by other Governmental Agencies or non-profit native plant organizations in accordance with the August 3, 2010 memorandum prepared by Ellen Alster, Registered Landscape Architect with Pima County Department of Transportation.

The project may affect nesting birds protected under the International Migratory Treaty Act; therefore, impacts to migratory birds will be addressed in the Biological Evaluation. Suitable burrowing owl habitat occurs within the project area; therefore, preconstruction surveys for the burrowing owl will be conducted in accordance with the AGFD’s 2007 survey protocol which recommends surveys conducted 90 and 30 days prior to construction and in accordance with ADOT’s standard measure for burrowing owls which require an additional survey 96 hours prior to the onset of construction.
7.3 Air Quality

The project is located in the Tucson Region Carbon Monoxide Limited Maintenance Area. The Valencia Road widening from Wade Road to Mark Road is in conformity and was analyzed for air quality impacts as part of the 2008-2012 Transportation Improvement Plan for Pima County.

Project construction will result in a temporary increase in particulate matter (i.e., dust). Measures will be implemented to minimize this impact during construction. Prior to initiating any construction activities such as earthmoving, trenching, or road construction, the contractor will obtain an activity permit from the Pima County Department of Environmental Quality.

7.4 Noise

Sensitive receptors in the project area include adjacent residences and the Casino del Sol. A noise study was prepared to evaluate the increase in roadway noise resulting from the future change in year 2030 traffic volumes under the proposed roadway design, consistent with the PCDOT Procedure Number 03-5, entitled “Traffic Noise Analysis and Mitigation Guidance for Major Roadway Projects,” dated December 1, 2003. This study determined that no noise walls are warranted. Rubberized asphalt will be used in roadway construction and will result in a noise reduction.

The project will result in temporary noise impacts during project construction associated with the operation of heavy equipment. The Pima County Noise Code (Chapter 9.30.070) limits construction activities to between 5 a.m. and 7 p.m. from April 15 to October 15 and between 6 a.m. and 7 p.m. from October 16 to April 14. Permits will be required if construction will need to occur outside of the allowable times.

7.5 Hazardous Materials

A Preliminary Initial Site Assessment (PISA) was conducted to determine whether there are any hazardous materials conditions of concerns within the project area (Reference 9). The results of the PISA identified potential hazardous materials concerns regarding an existing service station. The risk of environmental impacts from hazardous materials sites in the immediate vicinity of the eastern end of the project area is moderate to high, based upon the location of the Chevron Service Station, and associated underground storage tanks. The amount of subsurface disturbance for the entire project area is expected to be low, according to the planned scope of work for the roadway widening project.

Based upon the moderate to high risk of impacts from the identified site (Chevron Service Station), and the minimal amount of ground disturbance planned for the project, HDR does not recommend further investigation for hazardous materials impacts for the entire project area. In the event that acquisition is required in the vicinity of the Chevron Service Station, a site-specific Phase I report is recommended.

During roadway demolition, the striping will be removed with the pavement, so no lead-testing is anticipated. Further, no culverts will be demolished, so no asbestos testing is anticipated.

HDR does recommend that all construction contractors should be instructed to immediately stop all subsurface activities in the event that potentially hazardous materials are encountered, an odor is identified, or significantly stained soil is visible during construction. Contractors should be instructed to
follow all applicable regulations regarding discovery and response for hazardous materials encountered during the construction process.

7.6 Historical/Cultural Resources

A 2011 Class III cultural resources survey of the entire area of potential effect, conducted in accordance with Section 106 of the National Historic Preservation Act of 1966, identified no cultural resources (otherwise referred to as historic properties) that are eligible to the National Register of Historic Places and a finding of “no historic properties affected” is recommended. See Section 3.7 Archaeological and Historic Resources for additional details.

7.7 Visual/Aesthetic Resources

After reviewing the proposed project elements and comparing them to the existing visual resources within the project area, two primary visual impacts were identified in the Visual and Aesthetic Resource Report (Reference 11). Only viewers located directly on or adjacent to the roadway will be affected by the addition of the proposed project elements. It is estimated that viewers of the roadway from a distance will not be affected by the proposed project.

Visual Impact #1: Roadway widening (expansion of paved surface)

Widening of the roadway (including additional turn lanes and sidewalks) will have a moderate negative visual impact to viewers located on and adjacent to the roadway. Despite the fact that the paved surface area will more than double in width from the existing condition, little existing vegetation will need to be removed to accomplish this, as the majority of the existing unpaved R/W is currently cleared of vegetation. In addition, the 20’ wide, raised median and 9’ buffer area at the edges of the roadway will aid to visually ‘break up’ the expanse of added pavement and sidewalks.

Mitigation Strategy #1

Incorporate landscape planting within the raised median and along roadside buffer areas and beyond using species typical of the biotic community that surrounds the project area. Avoid arranging plants in unnaturally straight lines, and place trees in a manner such that they screen undesirable views and frame more desirable views. The plant design, density and spacing of species should emulate the natural surroundings as much as possible.

Visual Impact #2: Signalized Intersections

The addition of poles, signals and associated electrical wiring and cabinets needed to operate the signals will significantly impact the existing landscape, contrasting with the existing rural roadside.
Mitigation Strategy #2

Roadway design standards for signalized intersections, as well as the fact that the existing visual resources are not determined to be unique, will limit the mitigation strategies for the placement, type and size of roadway signals used in the project. However, using pole diameters that are as small as structurally possible, limiting the number of poles needed by placing as many signals and signs as possible on a single pole and limiting or securing any loose or dangling wires needed for the signals can all aid in minimizing the visual impact.

Mitigation Strategy #2a

Locating electrical cabinets either underground or in an area where they are less apparent to the travelling public (while maintaining adequate distance to the signal for maintenance), as well as painting the cabinets a color (such as tan or brown) to match the surrounding gravel or soil and strategically locating plant material to screen the electrical boxes (while maintaining access for servicing) can further reduce the negative visual impact.

7.8 Neighborhood and Community Resource Impact

The project area features low- to medium-density single family homes, the casino and the gas station. Large tracts of land remain undeveloped. The nearest schools are located along Mark Road, within 0.5 miles of the project area. Fire department stations are located along Wade and Mark Roads, outside of the project area. The nearest hospitals are within Tucson city limits, approximately 11 miles from the project area. Community resources within the project area include a park and ride lot at the casino.

The overall neighborhood impacts relate to improving traffic flow and modifying access points. The addition of a raised median will require that some residents, service and delivery vehicles make U-turns to access side streets or their driveways, which they presently access via left-hand turns. This also applies to police, fire and emergency vehicles. However, the medians also result in a safer roadway by separating the opposing traffic. The current roadway does not separate opposing traffic. Access to businesses and homes will be maintained during construction, and no detours through neighborhoods will be necessary. Additionally, through-traffic will be maintained during construction, allowing continued access to community resources in the area and vicinity.

Pedestrian access is a concern expressed at a community advisory meeting. To address this, a sidewalk will be provided along the project. Further, pedestrian connectivity will be maintained during construction. Pedestrian detours will direct path-users around construction activities.

The Pima County Regional Trail System Master Plan (Reference 16) includes two proposed trails crossing the project limits: the proposed Black Wash trail would be a single track trail crossing Valencia Road at Black Wash, and the proposed Central Arizona Project Canal Trail would cross Valencia Road at Camino Rancho. Consistent with Section 4(f) of the Department of Transportation Act of 1966 (49 United States Code § 303) and 23 CFR 771.135, the project’s potential impacts to the development of the trails will need to be evaluated.
The project will improve overall connectivity through the provision of improved pedestrian, bicycle and bus facilities.

7.9 **Drainage, Floodplains and Clean Water Act**

The proposed project will affect WUS under jurisdiction of the Corps. Based on preliminary design, the project is not anticipated to impact 0.10 acre or greater of WUS at any individual wash (regardless of the proposed jurisdiction). Therefore, the Corps will not need to be notified prior to using a Clean Water Act Section 404 Nationwide permit for work within the washes, and the Preliminary Jurisdictional Delineation will not need to be submitted to the Corps for approval. The Preliminary Jurisdictional Delineation will be prepared for Pima County’s project file. If changes to the project design result in an increase in impacts to WUS, the level of Clean Water Act Section 404 permitting and Corps involvement would need to be reevaluated.

Because more than one acre of soil will be disturbed, a Clean Water Act Section 402 National Pollutant Discharge Elimination System program permit will be obtained from the Environmental Protection Agency for work on Pascua Yaqui Reservation, and an Arizona Pollutant Discharge Elimination System program permit will be obtained from the Arizona Department of Environmental Quality for work off of Pascua Yaqui Reservation. The permits would be obtained by filing a Notice of Intent to use the “Construction General Permit” with both agencies and implementing Storm Water Pollution Prevention Plans specific to each permit. The Storm Water Pollution Prevention Plans identify potential sources of stormwater pollution at the construction site and define the methods for preventing storm water pollution.

Construction will impact Important Riparian Areas (IRA) and Regulated Riparian Habitat (RRH) as designated by the Pima County Board of Supervisors. Impacts to these areas will require coordination with the Pima County Regional Flood Control District to obtain a Floodplain Use Permit. Mitigation for impacts IRA and RRH will include on-site mitigation included in the landscape plans and off-site mitigation in the form of in-lieu fee.
8.0 Public Involvement

8.1 Public Participation Plan

A Public Involvement Plan was prepared by Pima County. This plan features public information meetings, a Community Advisory Committee, ongoing contact with affected parties, media relations and the development of informational materials. The goals of the plan are to educate the public about the project’s purpose and need, solicit the public’s comments on the project, review public comments and adjust the roadway design concept to address the public concerns to the greatest extent possible and within the constraints of the project, including safety and cost.

8.2 Community Advisory Committee

Community Advisory Committee Meetings

There have been three Community Advisory Committee (CAC) meetings held to date. The first two meetings were held when Castro Engineering was designing the project in 2008. The first meeting was held to go over the responsibilities of the CAC. The second meeting covered the basics of road engineering and the design process. The third meeting was held on July 25, 2011 to reintroduce the project to the CAC and brief them on the current design. The minutes from these meetings have been enclosed in Appendix C.

Future CAC meetings will be held to obtain their input on the Design Concept Report, Environmental Assessment and Mitigation Report (EAMR) and the construction plans. The CAC will also meet as needed to provide input on the artwork, aesthetic treatments, and other items for which they have jurisdiction.

8.3 Public Meetings

A public open house meeting will be held to obtain community input on the Design Concept Report and EAMR in October, 2011. This public meeting will be publicized through news releases distributed to the appropriate media and through display advertisements placed with the Daily Territorial and Arizona Daily Star a minimum of 15 days prior to each meeting. Meeting announcements will be mailed to the project contact list comprised of impacted residents and businesses as well as elected officials. Corresponding information will be posted on the dedicated project web site. Sign-in sheets will be provided to record attendance at the meetings, and attendees will be asked to submit comments on the forms provided at the meetings. Comments submitted during a two-week period following each meeting will be documented and summarized for the project team.

Another public hearing will be held before a meeting of the Pima County Board of Supervisors upon completion of the EAMR.
9.0 Agency Coordination

9.1 Environmental Review

A Pima County Environmental Screening Matrix has been completed to identify key economic, environmental, and social concerns. Local jurisdictions and governmental agencies with whom coordination is anticipated or has begun are identified in the matrix. See Appendix B for the Environmental Screening Matrix. Coordination is anticipated with the following agencies:

- Arizona Department of Agriculture
- Arizona Department of Environmental Quality
- Arizona Department of Transportation
- Arizona Game and Fish Department
- Arizona State Land Department
- City of Tucson
- Federal Emergency Management Agency
- Pascua Yaqui Tribe
- Pima County Cultural Resources and Historic Preservation
- Pima County Department of Environmental Quality
- Pima County Regional Flood Control District
- Pima County Regional Wastewater Reclamation Department
- State Historic Preservation Office
- Tohono O’odham Nation
- U.S. Army Corps of Engineers
- U. S. Bureau of Land Management
- U.S. Environmental Protection Agency
- U.S. Federal Highway Administration
- U.S. Fish and Wildlife Service
- U.S. Post Office

Coordination with the tribes and the State Historic Preservation Office will be initiated during the cultural resources consultation. Coordination with the U.S. Post Office will be required for the relocation of mailboxes.

9.2 Intergovernmental Agreements

A Joint Project Agreement with the Arizona Department of Transportation will be required to obtain Federal funding.
10.0 Alternatives

10.1 Sidewalk Location

Background

A memorandum was issued by John Bernal, Pima County Deputy County Administrator, addressing the use of sidewalks on county projects. It states “The placement of sidewalk without curb and gutter is acceptable where adequate separation from the roadway edge is incorporated in the project design.” Since this project has a rural typical section (no outside curbs), a review of literature was made to determine what an adequate separation might be.

The first reference reviewed was the 2004 AASHTO Guide for the Planning, Design and Operation of Pedestrian Facilities. This reference made the following statement with respect to rural sidewalks under Section 2.3.3, Rural Sidewalks:

“In areas where a pedestrian route is needed along a roadway to provide access between public buildings or facilities, shoulders are not usually appropriate as pedestrian facilities, particularly where vehicular traffic travels at higher speeds. In such cases, a full sidewalk or paved path, raised and/or separated from the street, should be considered.”

While this reference does not specify a minimum buffer between the rural road and the sidewalk it does provide the following with regards to a buffer for a shared-use path:

“Separation from roadways should be a minimum of 1.5 meter (5 feet.).”

The next reference was the 2006 FHWA University Course on Bicycle and Pedestrian Transportation. This reference provided the following guidance on rural sidewalks:

“Rural Sidewalks

Sidewalks along rural roadway sections should be provided as near the R/W line as is practicable. If a swale is used, the sidewalk should be placed at the back of the swale. If a guardrail is used, the sidewalk must be at the back of the guardrail. There will be times in near-urban spaces where the placement of sidewalks is not affordable or feasible. Wide paved shoulders on both sides of the roadway will be an appropriate substitute in some cases. However, the potential for growth in near-urban areas requires that rights-of-way be preserved. When sidewalks are placed at the back of the R/W, it may be necessary to bring the walkways forward at intersections in order to provide a roadway crossing where it will be anticipated by motorists. Security issues are also important on rural area sidewalks, so street lighting should be given full consideration.”

Next, the Iowa Department of Transportation addressed this subject in their 1996 Design Manual as follows:
“Sidewalks and Rural Cross Sections. Sidewalks generally should not be constructed in areas with rural cross sections, that is, cross sections without curbs. In rare instances when sidewalks are constructed in these areas, the sidewalk will be constructed at the top of the foreslope, as close to the R/W line as practical.”

Finally, the FHWA published the Pedestrian Safety Guide and Countermeasure Selection System which is intended to provide practitioners with the latest information available for improving the safety and mobility of those who walk. It states that:

“Meandering sidewalks are sometimes used where a wide R/W is available and there is a desire to provide a high level of landscaping, such as in a park or along a waterway or other natural feature. It is often believed that meandering sidewalks create a more pleasant walking environment. The reality is that they unnecessarily create a longer walking distance and are inappropriate for sidewalks along a street.”

**Options**

The cited references do not provide a definitive guidance on the sidewalk location. Therefore, the following options are offered:

1. Place it close to the R/W line. (See Figure 8, Alternative 1)
2. Place it on the edge of the foreslope. (See Figure 8, Alternative 2)

The first option has the benefit of maximizing the buffer width. However, since the sidewalk can’t cross the drainage channels, it must be returned to the foreslope area at the cross drainage culverts. Therefore, the sidewalk will run down the foreslope after each culvert and back up before the next. This prevents the sidewalk from maintaining a straight alignment and thus some users may not follow it and will simply walk along the top of the foreslope anyway.

The second option provides a continuous buffer width of nine feet. While it is narrower than Option 1, it does provide a straight alignment preferred by the users. It also exceeds the five-foot minimum cited by AASHTO for multi-use paths.

It is recommended that the sidewalk should be placed at the top of the foreslope. This provides the adequate separation specified by the Deputy County Administrator and is the best location for the sidewalk on this project.

**10.2 Culvert Alternatives**

**General**

Reinforced concrete box culverts were proposed for most of the cross drainage locations. These are used because of their low maintenance and frequent use in the Tucson area. This means that local contractors are familiar with their construction resulting in affordable construction with a high quality of the finished product. However, an alternative structure has been frequently proposed by the contracting community for larger drainage structures. This structure is the reinforced concrete arch. The arch is frequently presented during construction as a Value Engineering proposal. This results in an analysis
being performed under the extreme time-constraints of the construction phase. To avoid this, the concrete arch is being considered during the design phase.

**Hydraulic Analysis**

The first step in determining the best alternative is to perform a hydraulic analysis on both alternatives to determine the size of the structures. The two drainages being considered on this project are the two branches of the Black Wash located at Stations 296+70 and 310+50. JE Fuller analyzed both types of structures in preparing the drainage report for this project. They determined these culverts were appropriate for the 100-year flows:

<table>
<thead>
<tr>
<th>Location</th>
<th>Design Flow</th>
<th>RCBC Alternative</th>
<th>Concrete Arch Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Station 296+70</td>
<td>1995 cfs</td>
<td>9 - 10' X 5'</td>
<td>5 - 18' X 5'</td>
</tr>
<tr>
<td>Station 310+50</td>
<td>1511 cfs</td>
<td>9 - 10' X 5'</td>
<td>5 - 18' X 5'</td>
</tr>
</tbody>
</table>

**Cost Analysis**

A construction cost analysis was conducted using bid prices obtained over the past year. The easement costs would be identical for both structures so it is not included here. The design cost for the RCBC structure is assumed to be zero since the structural design has already been accomplished with the ADOT standard drawings. The design of the concrete arches will be unique to this project since standard details are not available. Therefore, the cost of their design has been included. The costs are shown below:

<table>
<thead>
<tr>
<th></th>
<th>RCBC at Station 296+70</th>
<th>Concrete Arch at Station 296+70</th>
<th>RCBC at Station 310+50</th>
<th>Concrete Arch at Station 310+50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Cost</td>
<td>$0</td>
<td>$45,000</td>
<td>$0</td>
<td>$45,000</td>
</tr>
<tr>
<td>Construction Cost</td>
<td>$740,000</td>
<td>$660,000</td>
<td>$590,000</td>
<td>$510,000</td>
</tr>
<tr>
<td><strong>Total Cost</strong></td>
<td><strong>$740,000</strong></td>
<td><strong>$705,000</strong></td>
<td><strong>$590,000</strong></td>
<td><strong>$555,000</strong></td>
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</tbody>
</table>

**Recommendations**

It appears that the concrete arch will provide the most economical structure for this project. However, to ensure that this is true, it is recommended that both structure types be bid as alternatives with the final selection being made after the bids are opened.
Figure 8. Sidewalk Alternatives
11.0 Conclusions and Recommendations

This project should be designed as described in this report. The design criteria to be used are listed in Section 5.0. Other important criteria for this project include:

- Provide two travel lanes in each direction on Valencia Road.
- Align new centerline of Valencia Road along the section line.
- Provide a paved shoulder in each direction to accommodate bicyclists and other multi-uses.
- Raise the vertical profile of the roadway two to five feet to accommodate the cross drainage improvements.
- The sidewalk shall be located approximately 9 feet from the edge of the roadway at the top of the foreslope, north of Valencia Road from Wade Road to Camino Verde and south of Valencia Road from Camino Verde to the eastern project limit.
- Provide additional turn lanes at the major intersections as shown in Figure 6.
- No noise walls are warranted. Rubberized asphaltic concrete shall be used as the top lift of the new pavement to help reduce noise levels.
- Replace existing native vegetation that must be removed with the same plant species or one that is commonly found in the project environment.
- ITS conduit shall be installed along one side of Valencia Road.
- A new traffic signal is warranted at Wade Road. The existing traffic signal at Camino Verde shall be upgraded as necessary to accommodate the proposed roadway improvements.
12.0 Cost Estimate and Budget Considerations

The project cost shown in Table 9 below is based on the preliminary design performed to date and will be refined as more detailed plans are prepared.

<table>
<thead>
<tr>
<th>Table 5. Project Cost</th>
<th>Task</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Construction Cost</td>
<td>$14,000,000</td>
</tr>
<tr>
<td></td>
<td>Utility Relocation (PCDOT Share)</td>
<td>$390,000</td>
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<td></td>
<td>Artwork</td>
<td>$140,000</td>
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<tr>
<td></td>
<td>Easements</td>
<td>$400,000</td>
</tr>
<tr>
<td></td>
<td>Design and planning</td>
<td>$1,880,000</td>
</tr>
<tr>
<td></td>
<td>Construction administration</td>
<td>$2,100,000</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>$18,910,000</td>
</tr>
</tbody>
</table>

Federal funding will be used for construction costs only. All other budget items will be covered by local funding. For a breakdown of the construction cost see Appendix A. The private utility relocation will be paid for by the individual utility companies, and therefore, is not included in the budget. The utility relocation costs that will be borne by this project include one-half of the relocation costs for Tucson Water. The utility relocation costs consist of lowering water lines where required at the new drainage culverts. Although Tucson Electric Power, Trico Electric, Qwest, Comcast and Southwest Gas may need to relocate their lines, we are not aware of any prior rights for them. We do not see any conflicts with the facilities owned by the Pima County Regional Wastewater Reclamation Department, El Paso Natural Gas or Central Arizona Project. For this project, the following utility work is anticipated:

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>42” DIP (Water)</td>
<td>1,300</td>
<td>L. Ft.</td>
<td>500.00</td>
<td>$650,000</td>
</tr>
<tr>
<td>12” DIP (Water)</td>
<td>400</td>
<td>L. Ft.</td>
<td>250.00</td>
<td>$100,000</td>
</tr>
<tr>
<td>6” DIP (Water)</td>
<td>300</td>
<td>L. Ft.</td>
<td>100.00</td>
<td>$30,000</td>
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<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>$780,000</td>
</tr>
</tbody>
</table>

No new R/W will be acquired for this project. However, some drainage easements and temporary construction easements will be needed as shown in Figure 7. The cost of the easements was estimated by Pima County Real Property to be $400,000 including various ancillary costs including staff, inspections, appraisals, etc.

Artwork is taken to be 1% of the construction cost. Finally, construction administration is estimated to be 15% of the construction cost. The total cost to Pima County for this project is estimated to be $19.0 million. The budget for the project is currently $21.3 million.
### 13.0 Project Schedule

The major milestones for the project include the following:

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Notice To Proceed</td>
<td>January 3, 2011-Complete</td>
</tr>
<tr>
<td>Stage I Submittal</td>
<td>June 2, 2011-Complete</td>
</tr>
<tr>
<td>Stage II Submittal</td>
<td>September 9, 2011-Complete</td>
</tr>
<tr>
<td>Draft EAMR Submittal</td>
<td>September 19, 2011-Complete</td>
</tr>
<tr>
<td>Draft Categorical Exclusion Submittal</td>
<td>November 21, 2011</td>
</tr>
<tr>
<td>Final EAMR Submittal</td>
<td>December 28, 2011</td>
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<tr>
<td>Board of Supervisors Approval of Final EAMR</td>
<td>January 25, 2012</td>
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<tr>
<td>Final Categorical Exclusion Submittal</td>
<td>March 12, 2012</td>
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<tr>
<td>Stage III Submittal</td>
<td>May 30, 2012</td>
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<tr>
<td>Stage IV Submittal</td>
<td>September 6, 2012</td>
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<tr>
<td>Stage V Submittal</td>
<td>December 31, 2012</td>
</tr>
<tr>
<td>Bid Advertisement</td>
<td>March 25, 2013</td>
</tr>
<tr>
<td>Construction Start</td>
<td>June 15, 2013</td>
</tr>
<tr>
<td>Construction Completion</td>
<td>December 15, 2015</td>
</tr>
</tbody>
</table>


14.0 References

1. “Final Traffic Engineering Study For Valencia Road, Mountain Eagle Drive to Mark Road (4RTVMW and 4RTVWE)”, Pima County Department of Transportation, July, 2011.


8. "Stage II Drainage Report For Valencia Road, Wade Road to Mark Road W.O No. 4RTVMW", JE Fuller, August, 2011.


17. “Geotechnical Study for Valencia Road, Wade Road to Mark Road W.O No. 4RTVMW”, NCS Consultants, LLC, November, 2011.

15.0 Abbreviation and Acronyms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AASHTO</td>
<td>American Association of State Highway and Transportation Officials</td>
</tr>
<tr>
<td>ADOT</td>
<td>Arizona Department of Transportation</td>
</tr>
<tr>
<td>CAC</td>
<td>Community Advisory Committee</td>
</tr>
<tr>
<td>cfs</td>
<td>cubic feet per second</td>
</tr>
<tr>
<td>Corps</td>
<td>U.S. Army Corps of Engineers</td>
</tr>
<tr>
<td>EAMR</td>
<td>Environmental Assessment and Mitigation Report</td>
</tr>
<tr>
<td>ESR</td>
<td>Environmentally Sensitive Roadway</td>
</tr>
<tr>
<td>FEMA</td>
<td>Federal Emergency Management Agency</td>
</tr>
<tr>
<td>FHWA</td>
<td>Federal Highway Administration</td>
</tr>
<tr>
<td>IRA</td>
<td>Important Riparian Area</td>
</tr>
<tr>
<td>LOS</td>
<td>level of service</td>
</tr>
<tr>
<td>mph</td>
<td>miles per hour</td>
</tr>
<tr>
<td>PCDOT</td>
<td>Pima County Department of Transportation</td>
</tr>
<tr>
<td>RCBC</td>
<td>reinforced concrete box culvert</td>
</tr>
<tr>
<td>RCP</td>
<td>reinforced concrete pipe</td>
</tr>
<tr>
<td>RDM</td>
<td>Pima County Roadway Design Manual dated 2010</td>
</tr>
<tr>
<td>RRH</td>
<td>Regulated Riparian Habitat</td>
</tr>
<tr>
<td>RTA</td>
<td>Regional Transportation Authority</td>
</tr>
<tr>
<td>R/W</td>
<td>right-of-way</td>
</tr>
<tr>
<td>USFWS</td>
<td>U.S. Fish and Wildlife Service</td>
</tr>
<tr>
<td>vpd</td>
<td>vehicles per day</td>
</tr>
</tbody>
</table>
Appendix A

Construction Cost Estimate
## STAGE II COST ESTIMATE
### VALENCIA ROAD
#### WADE ROAD TO MARK ROAD

**Project No. 4RTVMW**

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>QTY</th>
<th>UNIT</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT PRICE</th>
<th>AMOUNT</th>
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<td>1090002</td>
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<td>Fuel Adjustment</td>
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<td>$50,000</td>
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<td>L.F.</td>
<td>Preservation Fencing</td>
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<td>$963</td>
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<td>2010011</td>
<td>42</td>
<td>ACRE</td>
<td>Clearing and Grubbing</td>
<td>$1,000.00</td>
<td>$42,470</td>
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<tr>
<td>2020001</td>
<td>1</td>
<td>L.S.</td>
<td>Removal of Structures &amp; Obstructions</td>
<td>$50,000.00</td>
<td>$50,000</td>
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<tr>
<td>2020029</td>
<td>76,531</td>
<td>S.Y.</td>
<td>Removal of Bituminous Pavement</td>
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<td>$114,796</td>
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<td>C.Y.</td>
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<td>$31,326</td>
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<td>C.Y.</td>
<td>Drainage Excavation</td>
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<td>$64,317</td>
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<td>2030901</td>
<td>117,322</td>
<td>C.Y.</td>
<td>Borrow</td>
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<td>$938,579</td>
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<td>Aggregate Base</td>
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<td>TON</td>
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<td>4060001</td>
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<td>TON</td>
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<td>4060002</td>
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**TOTAL** $11,441,540

**20% CONTINGENCIES** $2,288,000

**CONSTRUCTION COST** $13,730,000
Appendix B

Environmental Screening Matrix
RE: Environmental Screening Results Memorandum

The proposed Valencia Road, Mountain Eagle Drive to Mark Road widening project is a two-phase project. The western phase extends from approximately 0.5 mile west of Mountain Eagle Drive to Wade Road and would be prepared to completion of a Design Concept Report (15% design level). No construction date is currently scheduled for this phase. The eastern phase extends from Wade Road to Mark Road, and construction is currently planned for spring of 2013. The project is funded by the Regional Transportation Authority, Pima County, and federal funds.

The environmental screening documents were prepared by Catherine Bolm of HDR Engineering, Inc., and address both phases of the project; however, resources identified within the project area are presented by the phase in which they are located. As part of the environmental screening process, a site visit was conducted on 1/7/2011 by Catherine Bolm, to determine existing conditions. Additional sources used in the preparation of the environmental screening documents include the following:

- Project scope of work dated 11/26/2010
- Project components were provided by Bob Brittain of HDR Engineering, Inc.
- U.S. Fish and Wildlife Service list of species for Pima County dated 12/13/2010
- Arizona Native Plant Act (A.R.S. §309-1 et. al) list of protected plants
- Arizona Archaeological Site and Survey Database (AZSITE) accessed 1/27/2011
- Mark Brodbeck of HDR Engineering, Inc. conducted a site visit of cultural resources on 3/7/2011
- Pima County online list of Priority Cultural Resources accessed 3/9/2011

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<table>
<thead>
<tr>
<th>To:</th>
<th>Paul Bennett, Pima County Department of Transportation</th>
</tr>
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<tr>
<td>From:</td>
<td>Christine Jacobs-Donoghue</td>
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<tr>
<td>Project:</td>
<td>Valencia Road, Mountain Eagle Drive to Mark Road</td>
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<tr>
<td>CC:</td>
<td>Karla Wise, Pima County Department of Transportation</td>
</tr>
<tr>
<td>Date:</td>
<td>April 13, 2011</td>
</tr>
<tr>
<td>Job No:</td>
<td>4RTVMW, HDR project no. 152226</td>
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• Roger Anyon of the Pima County Office of Cultural Resources and Historic Preservation verified the findings of the Pima County online list of Priority Cultural Resources on 3/9/2011
• Quinn Castro of the Pima County Department of Transportation provided average daily traffic volumes for existing conditions and projected conditions for the year 2030 on 3/9/2011

A draft Preliminary Initial Site Assessment dated March 2011 was prepared by HDR Engineering, Inc. in conjunction with the preparation of the environmental screening documents. The findings presented in the assessment indicated no hazardous materials concerns, although an operating service station is adjacent to the eastern phase project limits. This station features underground storage; however, it is located on Pascua Yaqui Tribal trust land and is not included in the Arizona Department of Environmental Quality or EDR databases. The Tribe will be contacted for their records data on the station and whether any hazardous wastes or substances in the past have been generated, treated, stored, released, discarded or disposed of on site, or whether any such wastes are not accumulated on site. No test borings have been performed to date.

Approximately 17 washes and drainages cross the project area. Of the washes, four potentially jurisdictional washes were identified within the western phase of the project, and four potentially jurisdictional washes were identified within the eastern phase of the project. Both phases of the proposed project would affect jurisdictional waters of the United States (U.S.). A preliminary jurisdictional delineation will be prepared for the eastern phase of the project and submitted to the U.S. Army Corps of Engineers for approval. The level of 404 permitting will be determined at a later date.

Nine washes within the project area feature Pima County protected Regulated Riparian Habitat, as designated by the Pima County Board of Supervisors. The Regulated Riparian Habitat in five of the washes is designated Important Riparian Area under the Conservation Land System. Construction of the eastern phase would impact Xeroriparian B habitat and Important Riparian Areas with underlying classification of Hydro/mesoriparian or mesoriparian H and Xeroriparian B. Impacts to these areas would require coordination with the Pima County Regional Flood Control District to obtain a Regional Flood Control Permit. Mitigation for impacts to Regulated Riparian Habitat will include on-site mitigation included in the landscape plans and off-site mitigation in the form of in-lieu fee.

The project area is located within the known range of the federally endangered Pima pineapple cactus (Coryphantha scheeri var. robustispina), and provides suitable habitat for the federally recognized species of concern Western burrowing owl (Athene cunicularia hypugaea). Plant species protected under the Arizona Native Plant Act (A.R.S. §309-1 et. al) occur within the project area. Impacts to these species will be evaluated in a Biological Evaluation prepared for the eastern phase of the project, which will include coordination with the U.S. Fish and Wildlife Service (USFWS) and Arizona Game and Fish Department to determine species-specific concerns and appropriate mitigation measures. The project area is within the area covered by the Pima County Multi-species Conservation Plan (MSCP) currently under USFWS review for a Section 10 permit. The Biological Evaluation prepared for this project will address Pima County MSCP species.

A preliminary records search identified two cultural resources are located in the project area—one is located in the western phase, and one is located in the eastern phase—and would be impacted by construction of the project. Neither site is included as a Pima County Priority Cultural Resource. A cultural report will be prepared for the eastern phase to identify impacts to the site located within the area of effect and to make project-specific recommendations.
The project area includes land under jurisdiction of the Bureau of Land Management, Arizona State Land Department and the Pascua Yaqui Tribe. The eastern phase would involve these jurisdictions; therefore, coordination with these agencies would be required to identify project-specific concerns.

The following project components will be determined at a later date:

- the project is not anticipating additional right-of-way to be acquired; however, drainage easements and temporary construction easements will be necessary and the amount is currently unknown
- left and right turn lanes will be added at several intersections along the project corridor; however, the total number of new turn lanes will be determined once the traffic report has been completed
- utility facilities are located in the project area; however it is currently unknown which utilities will relocate their facilities for the project and whether there would be a temporary disconnection of service
- there is a possibility of utility upgrades in the vicinity; however, the project scope does not currently include utility upgrades

A Design Concept Report will be prepared as a part of the technical documentation for this project.

Attachments:

- Environmental Screening Checklist, April 2011
- Environmental Screening Matrix, April 2011
INTRODUCTORY INFORMATION

Project Identification

- Project Name: Valencia Road, Mountain Eagle Drive to Mark Road
- Pima County Project Manager: Paul Bennett

Project Location and Limits

- Location of project within Pima County: Sections 8, 9, 16 and 17 of Township 15 South, Range 12 East of the Brown Mountain Quadrangle and Sections 9, 10, 11, 12, 13, 14, 15, 16 of Township 15 South, Range 12 East of the Cat Mountain Quadrangle
- Limits of project:  
  From end to end: approximately 0.5 mile west of Eagle Mountain Drive to approximately 0.4 mile west of Mark Road  
  From side to side: right-of-way varies from 150 feet to 200 feet wide

Funding Source

- Funding source anticipated for use in construction project?
  
  County funding: Y_x_N
  Federal funding: Y_x_N
  Other: The project will be partially funded by the Regional Transportation Authority.

Source: project team

Primary Project Purpose

- Primary purpose of project:
  
  Modernize roadway (e.g., resurface, restore, rehabilitate, reconstruct, add shoulders, or add auxiliary lanes): Y_x_N
  Increase capacity: Y_x_N
  Add bicycle lanes: Y_x_N (lanes are on-street multi-use lanes)
  Improve safety: Y_x_N
  Other:

Source: project scope of work dated 11/26/2010
Existing Conditions within Project Limits

- Roadway specifications?
  - **Right-of-way**: 150–200 feet
  - **Pavement width**: varies
  - **Number of through lanes in each direction**: 1

- Number of turning lanes?
  - **Dedicated right-turn lanes**: 4

Valencia Road at:

**Mountain Eagle Drive to Wade Road (2)**
- Reed Bunting Drive (northbound)
- Bullfinch Drive (northbound)

**Wade Road to Mark Road (2)**
- Camino Verde
- middle and east entrances to Sol Casino

**Dedicated left-turn lanes**: 4

Valencia Road at:

**Mountain Eagle Drive to Wade Road (1)**
- Vahalla Road

**Wade Road to Mark Road (3)**
- Wade Road
- Camino Verde
- middle and east entrances to Sol Casino

Continuous left-turn along Valencia Road between the west entrance to Sol Casino and Mark Road.
• Existing intersections?

*Number of signalized intersections:* ___1__

**Wade Road to Mark Road:**

- Valencia Road at Camino Verde

*Number of unsignalized intersections:* ___16__

Valencia Road at:

**Mountain Eagle Drive to Wade Road (11)**
- Reed Bunting Drive
- Via Diego de Riveria
- Bullfinch Drive
- De Concini Drive
- Mountain Eagle Drive
- Eagles Talon Parkway
- Vahalla Road
- Iberia Avenue
- Victor Drive
- Star Ridge Place
- Star Diamond Place

**Wade Road to Mark Road (5)**
- Wade Road
- South Arrow
- Mardick Avenue
- Viviana Road
- Ignacio Baumea Road

• Existing parking (e.g., on-street)?  Y____ N __x__

• Existing bicycle lanes:  Y____ N __x__

No designated bicycle route, however a westbound bike designated through- lane is on Valencia Road at the intersection with Camino Verde.

• Existing sidewalk:  Y__x__ N ____
  - Northwest and southeast corners of Valencia Road intersection with Camino Verde.
  - Along the south side of Valencia Road, from the east entrance to Sol Casino to Mark Road.

• Existing transit stops:  Y__x__ N ____
  - Sol Casino has a Park&Ride lot.
  - Transit stop on Valencia Road, west of Mark Road is outside of project limits.

• Other:

Note: If no existing roadway, describe site conditions (e.g., undeveloped land, etc.)

Source: Pima County 2010 spring pictometry color orthophoto imagery at
Project Components

- Anticipated specifications of the project?

  *Amount of additional right-of-way to be acquired:*

    Under 1 acre __x__ 1-5 acres ____ 5-10 acres ____ Over 10 acres ____

  *Note:* No new right-of-way is anticipated; however temporary construction easements will be needed for driveway alignments and drainage easements will be needed for work within the non-jurisdictional and jurisdictional drainages and washes. The acreage of temporary construction easements and drainage easements needed for the project is unknown.

  *Change in the vertical or horizontal alignment: Y__x__ N ____

  *New alignment: Y____ N __x__

  *Pavement width to be added:_ 24-36 feet__

  *Number of through lanes to be added:_ 2__

  *Number of turn lanes to be added:_ unknown_

  Right-turn lanes: unknown (5 currently anticipated)_

  Left-turn lanes: unknown (5 currently anticipated)_

  *Any associated parking (e.g., on-street): Y_____ N __x__

  *Bicycle lanes to be added: Y__x__ N ____ (lanes are on-street multi-use lanes)

  *Sidewalk to be added: Y__x__ N ____

  *Landscaping to be added: Y__x__ N ____

- Number of intersections to be signalized: __1__

- Other:


Phasing

- Is the project:

  *A portion or phase of a unified development plan? Y__x__ N ____

  Included in the Pima Association of Governments 2040 Regional Transportation Plan, and the Southwest Infrastructure Development Plan.

  *One of a series of projects that may result in a cumulative set of environmental impacts on an identifiable area? Y__x__ N ____

Source: Pima Association of Governments 2040 Regional Transportation Plan and the Southwest Infrastructure Development Plan.
Traffic:
- Existing average daily traffic (ADT) in the project area?
  
  **Street:** Valencia Road from Mountain Eagle Drive to Wade Road  
  **ADT:** 8,582

  **Street:** Valencia Road from Wade Road to Mark Road  
  **ADT:** 12,388

- Projected ADT in the project area for the build year?
  
  **Street:** Valencia Road from Mountain Eagle Drive to Wade Road  
  **ADT:** 25,966

  **Street:** Valencia Road from Wade Road to Mark Road  
  **ADT:** 26,100

Source: personal communication with Quinn Castro of Pima County Department of Transportation on 3/9/2011

Land Uses
- Existing adjacent land uses? Check all that apply and circle primary uses.

  **Valencia Road from Mountain Eagle Drive to Wade Road:**
  - Commercial (e.g., retail businesses, service businesses): Y____ N __x__
  - Institutional (e.g., schools, hospitals, social services agencies): Y____ N __x__
  - Residential (e.g., single family houses, apartments, townhouses): Y__x__ N ____
  - Vacant lots: Y__x__ N ____
  - Industrial (e.g., light industry, heavy industry): Y____ N __x__
  - Recreational (e.g., parks, sports fields): Y____ N __x__

  **Valencia Road from Wade Road to Mark Road:**
  - Commercial (e.g., retail businesses, service businesses): Y__x__ N ____
  - Institutional (e.g., schools, hospitals, social services agencies): Y____ N __x__
  - Residential (e.g., single family houses, apartments, townhouses): Y__x__ N ____
  - Vacant lots: Y__x__ N ____
  - Industrial (e.g., light industry, heavy industry): Y____ N __x__
  - Recreational (e.g., parks, sports fields): Y____ N __x__

Property Ownership

• Existing land ownership:

    Valencia Road from Mountain Eagle Drive to Wade Road:

    Majority public: Y___ N ___x___
    Majority private: Y__x__ N ___
    About evenly divided between public and private: Y____ N ____
    Other:

    Valencia Road from Wade Road to Mark Road:

    Majority public: Y____ N ___x___
    Majority private: Y___ N ___x___
    About evenly divided between public and private: Y__x__ N ____
    Other:

ENVIRONMENTAL CATEGORIES

Drainage

- Will any storm water drain from the project discharge into detention or retentions basins on site? Y____ N __x__

Source: personal communication with Bob Brittain of HDR Engineering, Inc. on 3/10/2011

Section 401/404

- Are any culverts likely to be installed, replaced, or extended? Y__x__ N _____
- Are there any bridges being upgraded, extended, or replaced? Y____ N __x__
- Is there any bank protection required in the construction of this project? Y____ N _____
- Are there any wetlands within the project area? Y____ N __x__
- Are there any riparian areas within the project vicinity? Y__x__ N _____

Riparian areas are Pima County Regulated Riparian Habitat under Pima County Ordinance 2005 FC-2, Title 16 Chapter 16.30.
- Is it anticipated that there will be any discharge of dredged or fill material into “waters of the United States”? Y__x__ N _____


Floodplain

- Is the project area within a 100-year floodplain delineated on the Federal Emergency Management Agency Flood Insurance Rate Map? Y__x__ N _____ If “yes,” will the project substantially modify the topography of the floodplain either by placement or removal of materials within the floodplain? Y____ N _____ to be determined

Biological Resources

- Are there listed threatened, endangered, proposed, and/or candidate species likely to be found in the project vicinity? Y__x__ N __
- Are listed special status species likely to be found in the project vicinity? Y__x__ N __
- Are protected native plants likely to be found in the project vicinity? Y__x__ N __
- Are construction activities anticipated to remove/disturb any vegetation? Y__x__ N __
- Is the project within the Conservation Land System? Y__x__ N __
  The project contains Important Riparian Area protected under the Pima County Ordinance 2005 FC-2, Title 16 Chapter 16.30 as Regulated Riparian Habitat.
- Is the project along a designated Scenic Route? Y____ N __x__

Note: The project area is within the area covered by the Pima County Multi-species Conservation Plan (MSCP) currently under USFWS review for a Section 10 permit. The Biological Evaluation prepared for this project will address Pima County MSCP species.


Air Quality

- Is the project in an:
  - Attainment area? Y__x__ N __
  - Nonattainment area? Y____ N __x__ If “yes,” what are the pollutants of concern?
  - Maintenance area? Y__x__ N ____ If “yes,” what are the pollutants of concern? carbon monoxide (CO)

Source: Statewide Air Quality map at <http://www.azdot.gov/highways/EPG/EPG_common/PDF/Air/statewide_air_quality_map.pdf> accessed on 1/5/2011

Noise

- Are there sensitive noise receptors in the area? Y__x__ N ____ If “yes,” identify type of noise receptors and briefly describe:
  - Residences: __x__
    The Valencia Road from Mountain Eagle Drive to Wade Road segment features moderately dense residential neighborhoods. The Valencia Road from Wade Road to Mark Road segment features intermittent residential structures set at irregular distances from the Valencia Road edge of pavement.
  - Schools: __
  - Hospitals: __
  - Churches: ____
Parks: ____

Other:

- When the project is completed and used as anticipated, is it likely to contribute to any exceedances of noise quality standards. Y____ N ___


Utilities

- Will the construction include any utility involvement? Y___ N ____ If “yes,” what kind of work is anticipated?

  Utility relocation:
  - 12” Tucson Water pipe located at Valencia Road from Wade Road to Mark Road
  - Southwest Gas facilities likely to be relocated
  - Qwest facilities likely to be relocated
  - Comcast facilities likely to be relocated
  - Tucson Electric Power poles to be relocated at Valencia Road from Wade Road to Mark Road

  Temporary disconnection of service: _unknown_

  Utility replacement: _unknown_

- Are there any scheduled plans for utility upgrades in the vicinity that are related to the project? Y____ N ___

  Source: personal communication with Bob Brittan of HDR Engineering, Inc. on 3/10/2011

Hazardous Materials

- Is it likely that any hazardous wastes or hazardous substances in the past have been generated, treated, stored, released, discarded or disposed of on site or are any such wastes now accumulated on site? Y___ N ____ Don’t know ___

- Have any test borings been performed? Y____ N ___ If “yes,” were any wastes discovered on the premises in the course of the test borings or excavation work for the project? Y____ N ___

Other: An active Chevron Station is located adjacent to the Wade Road to Mark Road segment of the project on Pasqua Yaqui Tribal Trust land. It was not listed in the EDR report or ADEQ reports; however, the site is anticipated to contain USTs, which may contain a hazardous material of concern. The tribe will be contacted for their records data on the station. Minimal ground disturbance is planned in the vicinity of the site; therefore, further investigation isn’t recommended. If additional acquisition is required in the vicinity of the Chevron Station, a site-specific Phase I report is recommended.

  Source: Preliminary Initial Site Assessment dated March 2011.
Historic Preservation

- Are there any cultural resources (archaeological or historic) in the vicinity of the project area that are listed on or eligible for the National Register of Historic Places? Y___ N___
- Are any of these sites considered “Priority Cultural Resources?” Y___ N___
- If the answer is “yes,” to either or both the questions above, please list the resource(s)/site(s):

  **Valencia Road from Mountain Eagle Drive to Wade Road:**
  
  
  *AZ AA:16:458 (ASM)* – Recorded by SWCA, Inc. in 2002, this site contains both prehistoric and historic components. The prehistoric component consists of an artifact scatter. The historic component includes a house foundation, tank, well, and an associated artifact scatter. Additionally, a thermal feature, rock alignment, and deflated rock pile were recorded; it is unclear from the site card which component these features are affiliated with. The site was recommended eligible for National Register listing. A data recovery plan was prepared for the site for construction of the current residential development in the area, and was approved by the State Historic Preservation Office in a letter dated July 24, 2003; therefore, it is expected this site is no longer present.

  **Valencia Road from Wade Road to Mark Road:**
  
  *AZ AA:16:380 (ASM)* – This is a Hohokam artifact scatter with two loci and associated thermal features that was recorded by Archaeological Consulting Services, Ltd., in 1993. The National Register eligibility of this site has not been evaluated but based on the description, it may be eligible.

- Of those properties listed or eligible, are any located near enough to the project to be affected by the project location, construction, or anticipated future traffic? Y___ N___
  
  If “yes,” please specify the properties and very briefly the anticipated effect.

  **Archaeological sites:**

  Portions of the two archaeological sites, *AZ AA:16:380 (ASM)* and *AZ AA:16:458 (ASM)* may be within the area of potential effects. If located within the area of potential effect, these sites would be directly affected by project construction. Widening of the road and the addition of bike lanes would likely result in an increase in pedestrian traffic, thereby potentially causing indirect adverse effects to site preservation.

- Are there any structures likely to be 50 years old or older within or adjacent to the project area? Y___ N___
  
  If “yes,” please list addresses below:

  Source: records search of the Arizona Archaeological Site and Survey Database (AZSITE) on 1/27/2011 and records search of the Pima County online list of Priority Cultural Resources on 3/9/2011, site visit on 3/7/2011, and personal communication with Roger Anyon of the Pima County Office of Cultural Resources and Historic Preservation on 3/9/2011

Visual Impact

- Is the project likely to affect noticeably the views from adjacent properties? Y___ N___
  
  If “yes,” briefly describe:

- Is the project likely to cause a noticeable change in the foreground, middle-ground, or background view from the road? Y___ N___

Neighborhood/Social Impact

- Is there likely to be any commercial or residential displacement due to the construction of this project? Y____ N __x__

- Are there likely to be any temporary changes in:
  
  *Business access:* Y____ N __x__
  
  *Parking:* Y____ N __x__
  
  *Other:

- Are there likely to be any permanent changes in:
  
  *Traffic service:* Y__x__ N ___
  
  *Traffic circulation:* Y__x__ N ___
  
  *Parking:* Y____ N __x__
  
  *Other:

- Is the project likely to affect continuity in neighborhoods in the vicinity? Y_____ N __x__

LOCAL JURISDICTION/AGENCY COORDINATION

- Are there local jurisdictions and governmental agencies with whom coordination is anticipated or has begun? Y __ x__ N _____ If “yes,” who are they?

  City of South Tucson ____
  City of Tucson ____
  Oro Valley ____
  Pascua Yaqui Tribe __x__
  Tohono O’odham Nation __x__
  Town of Marana ____
  Town of Sahuarita ____
  Arizona Department of Environmental Quality __x__
  Arizona Department of Transportation __x__
  Arizona Game and Fish Department __x__
  Arizona State Land Department __x__
  U.S. Army Corps of Engineers __x__
  U.S. Bureau of Land Management __x__
  U.S. Environmental Protection Agency __x__
  U.S. Federal Highway Administration __x__
  U.S. Fish and Wildlife Service __x__
  Other: Regional Transportation Authority

- Note any issues for coordination that have been identified to date: None

- Briefly describe coordination efforts planned or underway:

  Local jurisdictions and government agencies will be contacted through scoping letters. The project is receiving federal funding and will involve coordination with the Arizona Department of Transportation and the Federal Highway Administration.

Source: project scope of work dated 11/26/2010
PUBLIC INVOLVEMENT

- Has a Public Involvement Plan been developed for the project? Y____ N _x__
- Has a Citizen Advisory Committee been formed, or is one being formed? Y__x__ N _____
- Have any public meetings been scheduled? Y____ N _x__ If “yes,” have any meetings been held to date? Y__x__ N _____
  Note: A Citizen Advisory Committee was formed several years ago during an initial effort on this project, and public meetings were held at that time. The project was halted in 2008. The Citizen Advisory Committee will reestablish in support of the project recommencing. No public meetings have been held since the project was halted.
- Has any information useful to project development been identified through any public interaction to date? Y____ N _x__ If “yes,” briefly describe:
- Is there any known controversy over this project to date? Y____ N _x__ If “yes,” briefly describe:

Source: project scope of work dated 11/26/2010

PERMITS

- Anticipated permits and/or approvals?
  404 Permit: __x__
  401 Certification: __x__
  Sole Source Aquifer: __x__
  State Historic Preservation Officer (SHPO) clearance: __x__
  Nonpoint Pollutant Discharge Elimination System (NPDES): _____
  Other:
  Arizona Pollutant Discharge Elimination System Permit (AZPDES)
  Pima County Regional Flood Control District Floodplain Use Permit
  Note: No project activities are anticipated on tribal land. If the project requires the use of tribal land, then an NPDES would be required and an AZPDES would no longer be used.

Completed by: ________________________________
(name and title)

Date: ______________________________________
# Environmental Impact Screening Summary Impact Matrix

**April 2011**

**Project name:** Valencia Road  
**Project limits:** Mountain Eagle Drive to Mark Road

## Potentially affected environmental categories

<table>
<thead>
<tr>
<th>Potentially affected environmental categories</th>
<th>Water quality</th>
<th>100-year floodplain</th>
<th>Protected waterways</th>
<th>Visual quality/ viewsheets</th>
<th>Protected plants/ vegetation</th>
<th>Protected animals/ wildlife</th>
<th>Cultural resources/ (archaeological and historic)</th>
<th>Air quality</th>
<th>Noise</th>
<th>Hazardous materials</th>
<th>Land uses/ community character</th>
<th>Neighborhood continuity</th>
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<td>Applicable to project (✓)</td>
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<td>Added capacity (i.e., through lanes)</td>
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<td>M</td>
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**Notes:**  
0 = no involvement  
X = potential involvement, but no or minimal impact  
M = potential moderate impact  
H = potential high impact  
TBD = to be determined
Appendix C

Community Advisory Committee

and Public Involvement Information

This appendix includes:

- Community Advisory Committee meeting minutes
Valencia Road: Ajo Highway to Mark Road Improvement Project

Kickoff Meeting Summary

Community Advisory Committee (CAC)
Thursday, Jan. 31, 2008
Lawrence Elementary School
4850 W. Jeffrey Road
Tucson, AZ 85757

CAC Members Present at Meeting:
• Dennis Cady
• Karen Daniels
• Theodore Early
• Michael Flynn
• Steve Loveless
• Marshall Prewitt
• Erick Ramirez

CAC Members Not in Attendance:
• Wanda Banks
• Dennis Denton
• Jose Hernandez
• Adna Jones
• Paul Kidder
• David Ramirez
• Wesley Scott

Attending from Project Team:
• Pima County Department of Transportation (PCDOT): Priscilla Cornelio, Rick Ellis, Annabelle Quihuis, Louis Gonzales, Tom Nunn, George Malesky
• Castro Engineering: Frank Fry, Kevin Payne
• Gordley Design Group: Jan Gordley, Susan Parcells

Materials Distributed:
• Agenda
• Binder for CAC members
  o Project Features
  o Project Area Maps
  o Pima County Community Participation and Mitigation Ordinance

Rick Ellis, PCDOT Engineering Manager, opened the meeting at 6:30 p.m., introduced himself and thanked everyone for attending. He introduced Priscilla Cornelio, PCDOT Director, who again thanked everyone for taking on the responsibility of being a working member on the CAC. She went on to explain that this road improvement project is voter-approved as a part of the Regional Transportation Authority (RTA) plan and funding. She said that the purpose of this phase of the analysis/evaluation is
to define the needs regarding construction improvements on Valencia Road from Ajo Highway to Mark Road, a project that will begin construction in the next five years. A key project objective for this group is to become a successful CAC and to work with PCDOT closely over the next 24 months.

Rick stepped forward to go over the evening’s agenda. He asked for each CAC member to give his or her name, and to explain why each member accepted the CAC position. After introductions, he explained what the County was looking for from CAC members:

1) Feedback and verification of ideas, observations and possible solutions.
2) Community representation; How do discussed ideas work for other individuals in the community?
3) Advocate the project and educate the community about the project; and make sure the project improvements will make sense to rest of the community.

Rick introduced Annabelle Quihuis, PCDOT Community Relations Manager, who introduced the outreach team that included herself, Louis Gonzalez, Jan Gordley from Gordley Design Group and Britton Dornquast, RTA “Mainstreet” business assistance manager.

Annabelle discussed the CAC Scope of Review, and asked members to review page eight of the Community Participation and Mitigation Ordinance included in their binders. She elaborated on the ordinance and covered CAC functions, duties and how the members would represent the community. She went on to explain how CAC members were selected. A newspaper ad was placed to solicit applicants. Over 60 applications were received, they were reviewed internally and 14 were selected—making sure the project area was represented equally. CAC members personally introduced themselves and gave a brief explanation of what prompted them to be part of the CAC.

She explained the function of the CAC, which is to write a recommendation letter to the Pima County Board of Supervisors (BOS) addressing issues and concerns regarding the project Design Concept Report (DCR) and Environmental Assessment and Mitigation Report (EAMR). The Board of Supervisors (BOS) will review the CAC’s recommendations, then will either approve or request additional changes to the DCR and EAMR. Forty-five days before this letter goes to the BOS, the recommendation letter will go public, and PCDOT will host a public open house. The recommendation letter written by the CAC will be based on the DCR and EAMR, which will be provided to the CAC in portions.

The PCDOT Web site, http://www.roadprojects.pima.gov, will have project development and utility information, along with future meeting dates posted for CAC member and public reference. Annabelle and Louis added that the Web site would be a good way for the public to communicate with team members. The County will post contact information for CAC members on the Web site as well.

Annabelle introduced Frank Fry, Castro Engineering Project Manager. Frank introduced Tom Nunn and George Malesky of PCDOT, noting that they too will be involved in the project. Frank asked CAC members and the audience to review the project features outline provided to them. He walked them through the outline, the purpose of the improvements, and the roadway analysis and evaluation that will take place on the six-mile stretch of Valencia Road over the next two years of Phase One. Valencia Road from Ajo Highway to Mark Road has been deemed a “Desert Parkway” which will require evaluation on the criteria of that title. He went on to explain the project, the needs and obstacles of the terrain, including sheet flooding, traffic flow, multimodal designs and improvements. The County is planning to use an all-weather street surface for emergency service providers. He described the
engineering phases of the project. Phase One is the design concept phase, in which the EAMR and DCR will be completed. Phase Two is when the project goes into design/construction.

He said that the project team would be following the Roadway Design manual from Pima County, and that one of the conditions in it is to use rubberized asphalt to pave the roadway. Frank explained to those in attendance that this is the “quiet pavement” often used for noise reduction. He went on to describe the different reports that will be prepared. These included the DCR, a geotechnical pavement design report, a lighting report, artwork, a traffic report and analysis, and a drainage report. Frank said that drainage is a major issue, as it may affect the all-weather surface. Also, as the project may affect several washes, the Army Corp of Engineers will be involved, which means a possible 404 Permit will need to be attained.

Another consideration, Frank pointed out, was Right-of-Way (ROW) and easement acquisition. There may be areas where additional ROW will be needed. He assured those present in the meeting room that the project team will work closely with homeowners and CAC members to address any ROW concerns.

Rick Ellis opened the floor to questions:

- **Homeowners’ concerns about flood insurance: How would homeowners be impacted with changing stormwater flow?** Flow re-direction is thoroughly analyzed, and impacts will be addressed during Phase One.

- **What does the realignment look like for Ajo Highway and Valencia Road?** Each intersection is individually designed, and Phase One is when that issue will be reviewed. The stakeholders will review the impact study to better decide what has not yet been defined. Two major corridors come together in this re-alignment, so the needs assessment will also take into account Arizona Department of Transportation (ADOT) and Tucson International Airport.

- **Plans for alternative routes during construction?** PCDOT will make every effort to accommodate traffic with alternative routes. PCDOT’s Valencia Road improvement schedule may overlap with ADOT’s Ajo Highway improvement schedule to reduce the continuous construction impact on the region.

- **Camino Verde issues during construction: How will neighbors be impacted by the road closures, alternative route issues, and enforcement issues?** Pima County Flood Control has the lead on the Camino Verde project, not Transportation. However, PCDOT will make every effort to reduce the impact on the community.

- **What plans are being considered for dust abatement in the area?** PCDOT will make every effort to reduce the dust impact on the community.

- **Pedestrians and neighbors walk a lot in this area; can information boards be placed along the stretch of construction for neighbors to read the information?** The idea will be taken under advisement.

- **Why is it going to take five years?** With the improvements requiring analysis and surveys to ensure all required information is available to begin the design phase, it generally takes two years for Phase One. Phase Two (design/construction), generally takes three years. By starting the process early, we will be prepared if, at any time during Phase Two, another project falls away. This would allow for an earlier start to this project.
The question and answer session ended and the CAC members were requested to choose a chairperson or co-chairs and decide on a weeknight for further CAC meetings. Tuesday evenings will be CAC meeting nights for the remainder of the project.

Marshall Prewitt and Michael Flynn were selected as co-chairpersons for the CAC. The meeting concluded at 8:15 p.m.
Community Advisory Committee (CAC) Meeting
Tuesday, May 6, 2008
Lawrence Elementary School
4850 W. Jeffrey Road
Tucson, AZ 85757

CAC Members Present at Meeting:
• Dennis Cady
• Karen Daniels
• Dennis Denton
• Theodore Early
• Michael Flynn
• Adna Jones
• Paul Kidder
• Marshall Prewitt
• Erick Ramirez
• Wesley Scott

CAC Members Not in Attendance:
• Wanda Banks
• Jose Hernandez
• Steve Loveless
• David Ramirez

Attending from Project Team:
• Pima County Department of Transportation (PCDOT): Rick Ellis, Louis Gonzales, John McManus
• Castro Engineering: Frank Fry, Nathan Ortega, Kevin Payne
• Gordley Design Group: Susan Parcells, Jamie Van Goethem

Materials Distributed:
• Agenda
• Engineering 101 Fact Sheet
• Regional Transportation Authority (RTA) pamphlets
• Binder for CAC members

Frank Fry, Castro Engineering Project Manager, opened the CAC meeting for Valencia Road: Ajo Highway to Mark Road at 6 p.m., introduced himself and thanked everyone for attending. He then introduced the project team. The agenda for the evening would cover an introduction to engineering tactics and steps that must be followed for solving the issues and problems in the roadway design. Louis Gonzales, Pima County Community Relations, came forward and reviewed the County’s intention of working with the CAC. The project team and County will ask that a majority of CAC members write a letter of endorsement to the Pima County Board of Supervisors supporting the project and design. In addition, the CAC could bring concerns or project additions to the Board’s attention. The CAC will also
be able to attend public meetings and hear concerns from the public. Louis will distribute a tentative schedule of public meetings and other milestones to the CAC at a later date.

Frank began discussing items on the agenda and the fact sheet. The evening’s content primarily covered the basics of engineering and the design process. Frank discussed how the first steps for a project are to research the existing conditions known throughout the corridor. Proposed conditions are compiled, and future conditions are proposed based on a 20-year design and projected capacity demands in the area. Existing conditions include vehicular and pedestrian traffic safety issues. The geometrics and current roadway cross section are also reviewed in addition to: turning lanes and directional movement counts; average daily traffic of Valencia Road and side streets; capacity and level of service of the current traffic (traffic service ranges from Level A to E, with E being the most heavy traffic. Most projects are designed for a Level D); posted speed limits; percentage of heavy vehicles; and where signals will be needed in the future. The proposed conditions are then reviewed. This is based on demand, and usually the traffic consultant goes for a 20-year design so the team knows how to project build-out for vehicle and pedestrian use.

The project team works closely with an environmental consultant that researches and collects data on existing cultural resources, biological factors, vegetation survey, jurisdictional waters, hazardous materials, air quality and noise variables. He went into specifics regarding drainage and the existing conditions on this project. Sheet flow on the roadway (water flow over the roadway) is a large issue in this corridor. The hydraulics will be evaluated for capacity on existing culverts and structures, and the existing water surface profile. Based on this water and drainage profile for the roadway, a two-dimensional model will be made that will analyze the sheet flow.

Next, Frank went over the Geotechnical Analysis. Right-of-Way (ROW) and easement permits are to be obtained, and Bluestake marking is done prior to drilling. Land and aerial surveys are completed, and the soil borings are sent to labs to analyze the conditions. Recommendations will be made from the analyzed samples and will provide data on the location of signal pole locations, retaining structures, pavement sections and drainage design. Utility providers are coordinated with, and a base map of all existing locations is created. Proposed utility locations are also mapped at this time as an attempt to avoid conflicts with the proposed roadway and drainage improvements. When necessary, the County and project team will collaborate with utilities as needed for relocation.

Frank discussed intergovernmental issues. For the Valencia Road corridor between Ajo Highway and Mark Road, the project team must coordinate with the Arizona Department of Transportation (ADOT), Pascua Yaqui Tribe, the U.S. Army Corps of Engineers, Bureau of Land Management, the Federal Highway Administration and the Tucson Unified School District.

Frank opened the floor for questions and concerns from the CAC members:

- **How is ADOT involved at the west end of the project?** The Valencia Road project intersects with State Route (SR) 86 (Ajo Highway) which is an ADOT roadway. We will coordinate with them as needed.

- **Is Valencia Road looked at as a direct route to Interstate 19?** Based on traffic studies, the bulk of traffic uses the ADOT highway (SR 86). However, Valencia Road and Ajo Highway are considered major east-west routes.
What is the basis for the improvements to Valencia Road in the future? The traffic engineering report works toward a 20-year design. The corridor study will identify three construction projects and a possible interim improvement for the short-term needs. The Pima County Southwest Infrastructure Plan (SWIP) identifies what the region may look like in 20 to 30 years.

How is noise abatement determined? This is based on the noise report, and the factors include topography, the proposed roadway profile and a typical section. The readings are put into a noise model that will determine the decibels in the area. A noise-oriented CAC meeting is scheduled for the future.

Why do Craycroft Road and Valencia Road look different in regards to design and median locations? The topography, vegetation and lane configurations of the two roadways are different. Valencia Road and Craycroft Road have different environmentally sensitive issues.

Why are the rocks and rip-rap painted along Valencia Road? Different areas of Tucson require different landscaping and artistic solutions.

Is the design year based on 20 years from now or 20 years after the report is finished? The design year is 2030, which is 20 years from the year 2010. For the traffic report, Pima Association of Governments and SWIP do traffic modeling to get future traffic conditions.

Frank continued to discuss engineering basics by covering the preliminary roadway cross-section concepts. Roadway typical sections include the design speed and posted speed; medians; the number of travel lanes; and pedestrian and equestrian requirements, in addition to curbs, medians, soft paths and drainage needs. Traffic data, utilities and the typical section are only a few of the elements that go into the final working project. All data is combined and can lead to numerous alternative solutions. A roadway design must be chosen that works with all entities and elements involved. The engineers and County must also determine that the proposed alternatives are constructible. They must meet funding, sequencing/phasing and permit requirements.

Frank discussed drainage requirements in the area and the concern of the water surface elevation level (WSEL). Requirements of the WSEL on the proposed improvements on Valencia Road cannot raise water levels more than a tenth of a foot, and the water velocity cannot increase more than 10 percent. The drainage goal for the improvements is to put the 100-year storm flow under the roadway, with no more than one foot of water flow over the roadway. Additional project factors include historic, cultural and archaeological issues, as well as funding, which for this project, will come from multiple sources, including Pima County, the Regional Transportation Authority (RTA) and possibly the federal government.

Does the proposed design include bike paths or lanes? One concept includes a travel lane with a paved shoulder that can be used as a bike lane. There is an Americans with Disabilities Act (ADA) applicable paved, recreational, soft path on one side that can also be used for bicycle traffic.

Will Pima County put utilities underground? The County cannot pay for undergrounding utilities, as they are cost prohibitive. However, it is an option to have joint utility trenches.

What will happen to the maintenance schedule when we get closer to construction commencement? Rick Ellis, PCDOT Engineering Manager, explained that potholes would be fixed as needed right up
and through the construction start date. Interim signals can still be installed if needed. Most things that are more major than pothole repairs will wait until the construction phase.

- **What is the next step for this project?** Louis explained that the team will meet with the CAC chairpersons. The CAC is encouraged to meet outside of the scheduled County meetings so that questions and concerns can be brought back to the team. Frank and the team can research any questions and bring answers back to the members.

- **Can the right-of-way for the high-pressure gas line be used for recreational spaces?** Rick and John McManus, PCDOT Traffic Engineer, explained that some of it has already been utilized in this manner. Additional parks and equestrian trails have been placed on hold due to the current economic situation.

- **Does the SWIP Web site show what the completed roadway could look like?** Yes. The Web site (www.pima.gov/wwm/reports/sw_infra_plan.htm) describes what expected commercial, residential and recreational development in the area may look like.

- **Are there a minimum number of people who can be on a CAC?** Five is the minimum. Fifteen is the ideal number of members.

- **Will future developments place things underground?** Existing drainage and traffic conditions are nearly finished. However, future developers in the area may choose this option.

Louis Gonzales stepped forward and discussed how he will work with the CAC chairpersons to set up additional meetings. The CAC will help the team develop and plan the project; the Board of Supervisors wants the CAC’s endorsement on behalf of their communities. CAC members are encouraged to take information back to their neighborhood associations and notify people of the meetings and progress. Louis will make sure members have updated contact information for the team and for each other.

The meeting was adjourned at 7:15 p.m.
VALENCIA ROAD: MARK ROAD TO MOUNTAIN EAGLE ROAD
CAC MEETING HELD MONDAY, JULY 25, 2011 SUMMARY.

Listed below is the list of topics that generating some question or concerns from CAC Members and members of the audience during the presentation.

- Attendees inquired about the project schedule. The process was discussed with the CAC and audience. The project will be under design for one year and would be going out to bid around first part of 2013. Construction starting around spring or summer of 2013. This time frame will also allow for utilities to move services from the project limits.
- Audience asked as to why we needed to build sidewalks? The audience questioned the need for sidewalks. Could there be additional savings on the sidewalks to extend the project? The description of a desert parkway section is to provide multi-modal transportation improvements, which will improve safety, increase mobility for current and future traffic needs.
- The question was asked, why the sidewalk would jump from one side of the roadway to the other. The sidewalk is designed to be on the south side of the street and then move to the north side to accommodate the development on the north side. Concern was expressed that the sidewalk would not be continuous. The project team would look into this concern.
- The intersection improvements were discussed for Camino Verde, Wade Road, and Vahalla Road. The CAC asked as to why Pima County was proposing a traffic signal on Wade when it was not a four way corner. The Project Team explained that a traffic study was conducted along Valencia Road. The traffic count or flow of traffic entering Valencia Road from the south, from Wade Road supported the traffic signal due to the high volume of traffic.
- CAC asked about the proposed medians along Valencia Road. They asked if the medians would restrict traffic from accessing side streets. The Project Team explained the median would be built with turn bays to allow for street access. The speed limit also called for medians as a safety feature.
- Attendees asked if the medians will have any vegetation. The Project Team replied, yes. The Project Team described the different types of plants to be used. It will plant native shrubs that be maintained for a one year period until they are established.
- CAC asked how the team plans to deal with sheet flooding. The Project Team explained that the project calls for drainage improvements. A portion of the roadway will be raised as much as four feet to accommodate the water to move below the roadway through drainage structures (Box Culverts). Drainage structures would be built at different locations along Valencia Road to eliminate sheet flooding.
Appendix D

Stage II (30%) Construction Plans

(Bound Separately)