




MEMORANDUM

Date: October 9, 2019

To: The Honorable Chairman and Members
Pima County Board of Supervisors

From: C.H. Huckelberry
County Administrator 

Re: **Item #22, October 15, 2019 Board of Supervisors Agenda, Condemnation Authority to Acquire Property for Speedway Boulevard – Painted Hills to Camino de Oeste Project**

The project along Speedway Boulevard – Painted Hills to Camino de Oeste - was initiated in July 2015 and consists of widening the shoulder to address run off the road crash history along the corridor. The project required acquisition of right-of-way from three property owners. The necessary right-of-way is not only for the shoulder widening, but also for the existing road right-of-way that runs through these properties and was not previously acquired by the County. One acquisition has closed and a second is in escrow. The third acquisition consists of acquiring 7,113 SF (the "Needed Property") from residential property owned by James M. Nelson and Marilyn J. Nelson, as Trustees of the Giebelhausen Trust (the "Owner"). The Needed Property and the larger parcel which includes a residence (the "Owner's Property"), are depicted in Attachment 1. The Needed Property includes both the existing right-of-way and the additional land needed to widen the shoulder.

Real Property Services has been in contact with the Owner since January, 2019. The Needed Property was appraised by Sara Baker, MAI, SRA, effective April 3, 2019 in the amount of \$6,600. An offer package was sent to the Owner on May 3, 2019. The legal description was subsequently revised in an effort to accommodate the Owner, by shifting the road shoulder further south and away from the Owner's residence. The appraisal was updated effective August 2, 2019. The updated appraisal value for Needed Property was \$7,100. A second offer package was sent to the Owner dated August 14, 2019, based on the updated appraisal.

The Owner has expressed the following concerns that were addressed in a letter to the Owner from Deputy County Administrator Carmine DeBonis, Jr., dated July 19, 2019 (Attachment 2):

1. The Owner has asked that the design be changed to mitigate the curve west of the Owner's Property. This would cost at least \$1.6 million in addition to the Project budget, for which funding is not available.

The Honorable Chairman and Members, Pima County Board of Supervisors

Re: **Item #22, October 15, 2019 Board of Supervisors Agenda, Condemnation Authority to Acquire Property for Speedway Boulevard – Painted Hills to Camino de Oeste Project**

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2. The Owner asked for the roadway to be shifted further south and eliminate the need for any of their right of way. This is not possible as it would impinge on clear zones and would require redesign and utility relocation, for which funding is not available.

The Owner has been given substantial time to respond to the County's offers, but has continued to refuse to accept an offer and has refused to even negotiate the price, as the Owner's basic objection is to the project design. In order for the project to continue, it will be necessary to condemn the Needed Property. The request for condemnation authorization is on the October 15, 2019 Board of Supervisors Agenda. Granting approval to proceed with condemnation does not preclude continued negotiations with the Owner.

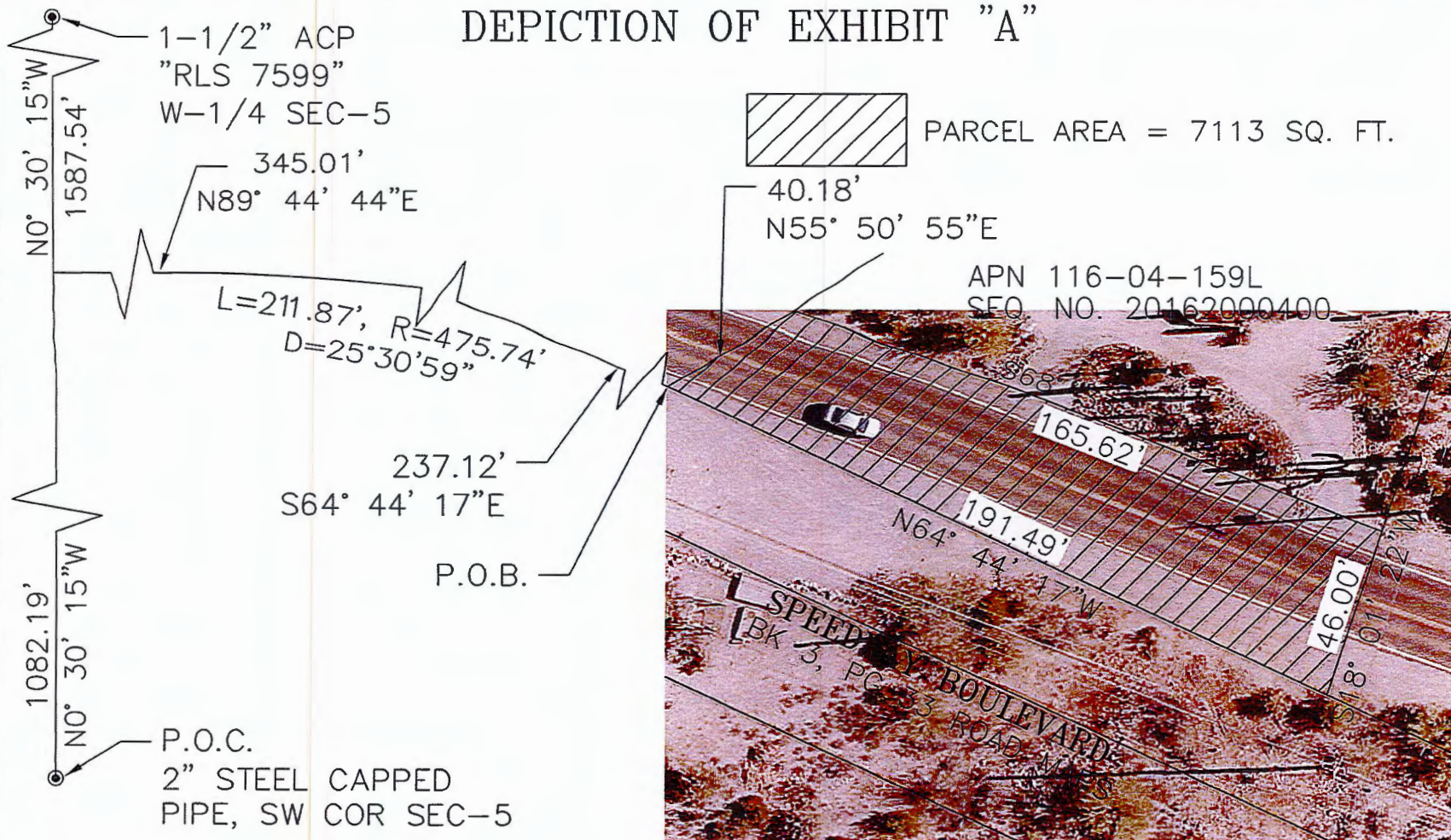
CHH/lab

Attachments

- c: Andrew Flagg, Chief Civil Deputy County Attorney
Carmine DeBonis, Jr., Deputy County Administrator for Public Works
Ana Olivares, Director, Department of Transportation
Neil Konigsberg, Manager, Real Property Services

ATTACHMENT 1

DEPICTION OF EXHIBIT "A"



PIMA COUNTY SURVEY

A PORTION OF PARCEL RECORDED IN SEQ. NO. 20162000400
LOCATED IN SECTION 05, TOWNSHIP 14 SOUTH, RANGE 13 EAST,
GILA AND SALT RIVER MERIDIAN, PIMA COUNTY, ARIZONA

Scale: 1" = 40'

Date: 17 July 2019

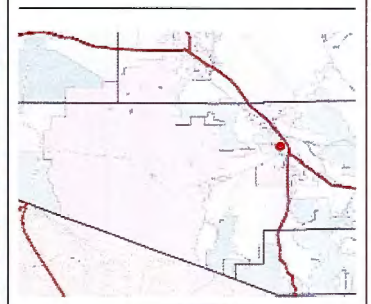
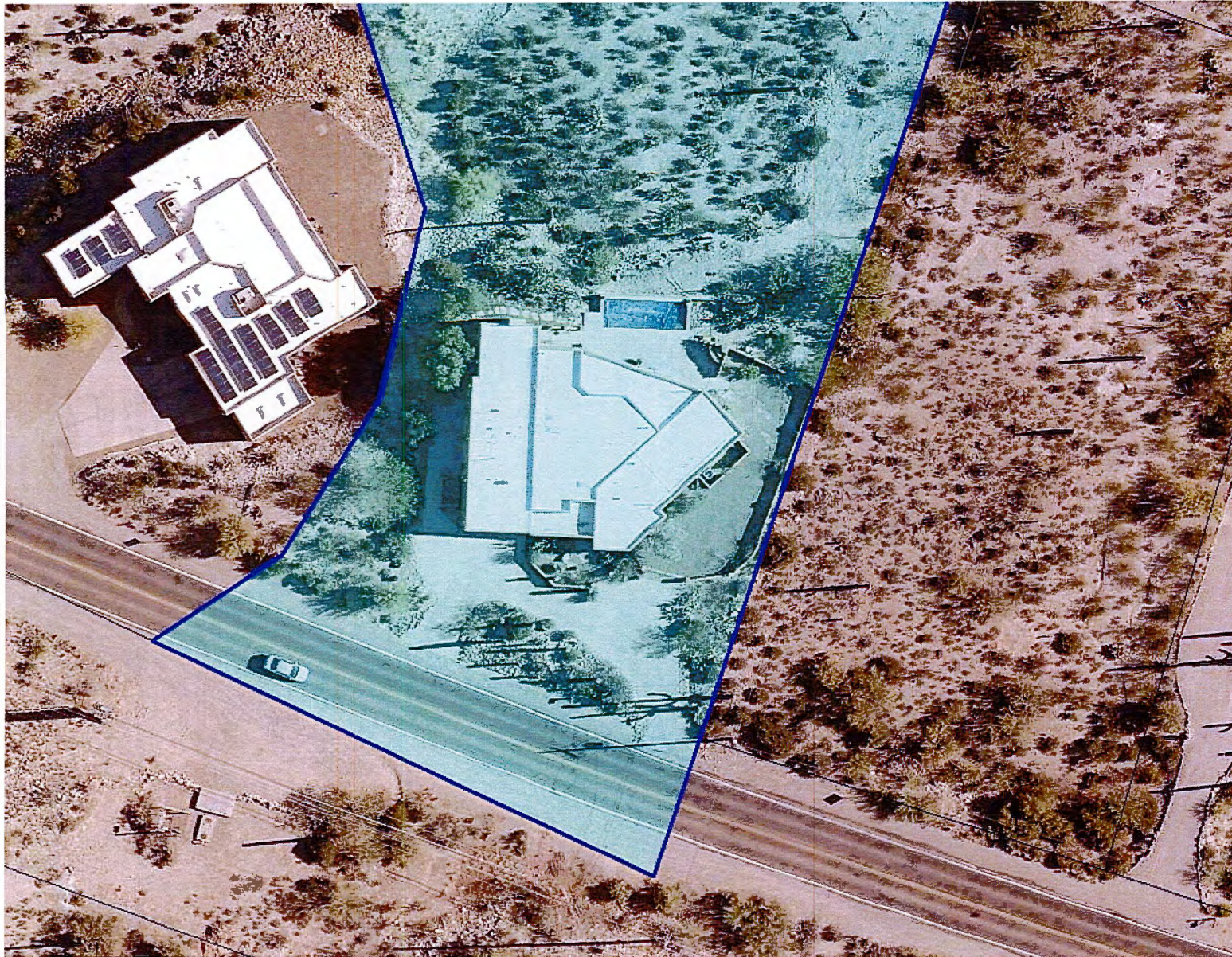
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Sheet 2 of 2

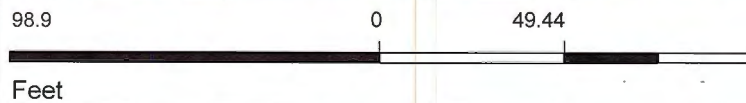
Acq-0630 / Giebelhausen

Legend

☐ Parcels



Parcel: 116-04-159L



This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map are subject to Pima County's ITD GIS disclaimer and use restrictions.

4/25/2019

ATTACHMENT 2



COUNTY ADMINISTRATOR'S OFFICE

PIMA COUNTY GOVERNMENTAL CENTER
130 W. CONGRESS, FLOOR 10, TUCSON, AZ 85701-1317
(520) 724-8661 FAX (520) 724-8171

C.H. HUCKELBERRY
County Administrator

July 19, 2019

Mr. James M. Nelson
Giebelhausen Trust
3680 W. Speedway
Tucson, AZ 85745

Subject: Painted Hills to Camino de Oeste Speedway Project

Dear Mr. Nelson:

Thank you for your letter of March 20, 2019, which summarized your concerns regarding the Speedway Boulevard shoulder project. In reviewing these concerns, it appears that the location of Speedway Boulevard in relationship to Giebelhausen Trust (Trust) property may not have been fully understood or disclosed as part of the purchase. If this is the case, you may want to discuss this issue with the seller or the title insurance provider.

Regarding the shoulder project, the work being proposed and authorized for funding is focused specifically on adding paved shoulders as a countermeasure for roadway departure crashes, with funding specifically identified for this purpose and limited in amount. The current project along Speedway Boulevard between Camino de Oeste and Painted Hills Road was initiated in July 2015, and was based on earlier reviews of the crash history along the corridor. These reviews revealed that crashes had occurred along this segment of roadway between January 1, 2007 and December 31, 2009. This review recommended that shoulder widening should be considered when funding becomes available to address the predominant issue of vehicles leaving the roadway. Documentation regarding the initiation of the project is provided in Attachment A.

As the project moved forward, the lack of right-of-way associated with the Trust property and two other parcels was documented in the Project's *Project Assessment*, as required for ADOT/FHWA funded projects as shown in Attachment B. After the *Project Assessment* was reviewed and approved by ADOT, and other environmental clearances were received, the process for right-of-way (ROW) acquisition began in September 2018. This process led to the notifications sent to residents in the area, and meetings between the Trust and Pima County.

In an effort to understand the concerns raised in your letter, Assistant County Administrator Yves Khawam and I met with you on location on June 21, 2019. We walked the road segment in the vicinity of the Trust property and discussed some of the constraints associated with the shoulder-widening project including Federal Highway Administration funding and scope change limitations.

Mr. James M. Nelson

Re: Painted Hills to Camino Oeste Speedway Project

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During our visit, you did raise some valid issues which are addressed below:

- **Cost for realigning a portion of roadway to mitigate the curve west of your property.** A very high-level analysis of flattening the curve is estimated to cost at least \$1.6 million to include relocation of fifteen utility poles. The cost of this relocation would be in addition to the expense for completing the shoulder project on Speedway Boulevard between Camino de Oeste and Painted Hills Road. No funding is available for flattening the curve.
- **Ability to shift the roadway further south of the current project design.** This is not possible since doing so would impinge on clear zones and would require redesign of project and relocation of utilities for which funding is not available. The current project scope includes shifting the roadway centerline two feet south of the existing alignment in an effort to minimize disturbance to your property to the maximum extent possible within the project constraints.
- **Amount of ROW acquisition north of the current shoulder and County's desire to straighten the ROW.** We have analyzed clear zone requirements and can further adjust the ROW line to match the south edge of your paved driveway. This would provide the minimal needed room between the widened shoulder for maintenance and allow the County to match your driveway without removal of the existing rock features. The revised ROW area is depicted in Attachment C.

While these responses may not entirely mitigate your concerns regarding the shoulder widening project, they are a good-faith effort to more fully disclose project constraints and alleviate the impacts to your property to the extent possible. As such, we will follow up with an updated offer for acquisition of the revised ROW area, which I hope will result in your acceptance.

It was a pleasure meeting you and Ms. Marilyn Nelson in person. Please contact me if you have any questions.

Sincerely,



Carmine DeBonis, Jr.

Deputy County Administrator-Public Works

Attachments

c: C.H. Huckelberry, County Administrator
Yves Khawam, PhD, Assistant County Administrator
Ana M. Olivares, Director, Department of Transportation
Neil Konigsberg, Manager, Real Property Services

PROJECT OVERVIEW

Background:

Speedway Boulevard between Painted Hills Road and Camino De Oeste is a two-lane urban collector with narrow graded shoulders and an average daily volume of over 2,600 vehicles per day. The roadway has no curb or sidewalks and is heavily vegetated along both sides. The surrounding land use is large lot residential. This route is a main route for those traveling to Gates Pass, the International Wildlife Museum, Old Tucson Studios, and Tucson Mountain Park. It is also a secondary route for access to the Saguaro National Park West, which received approximately 225,000 visitors per year. Additionally, this segment of Speedway Boulevard is a popular scenic bike route with heavy bike traffic.

In 2001, a DOT-57 project for this segment of Speedway Boulevard was retired without being completed. The project, 4SPPHA, developed a Location Report, draft Environmental Report, Traffic Report, Geotechnical Recommendations, and Cultural Studies. The preliminary effort expended \$155,000 on the project which was then shelved without moving ahead to final design.

In 2011 the segment of Speedway Boulevard between Painted Hills Road and Camino De Oeste was evaluated as part of an annual crash assessment. The crash assessment revealed that 13 crashes had occurred along the segment from January 1, 2007 to December 31, 2009. Ten of the crashes involved vehicles leaving the roadway. Two of these resulted in incapacitating injuries, and a third resulted in non-incapacitating injuries; see the injury-crash table on the following page. The crash assessment recommended shoulder widening be considered when funding became available.

Injury Crashes from January 1, 2007 to December 31, 2009

Crash Severity	Date	Crash Type
Injury-4 (Incapacitating)	3/5/2009	Fixed Object
	12/8/2008	Fixed Object
Injury-3 (Non-Incapacitating)	11/16/2007	Fixed Object
Injury-2 (Possible Injury)	12/18/2009	Left-Turn
	5/31/2009	Fixed Object
	8/15/2008	Fixed Object

In 2012 a benefit-cost analysis of the paved shoulder installation was conducted as a follow-up to the crash assessment. It used ten-year crash data from January 1, 2002 to December 31, 2011, an estimated design and construction cost of \$1,111,870, and the following crash reduction factors: fixed-object crashes 0.15, head-on crashes 0.86, pedestrian crashes 0.71, and night crashes 0.62. The analysis resulted in a benefit-cost ratio of 1.0:1, and the project was ranked 5th on the Safety Management Systems project priority list.

The benefit-cost analysis was revised in 2014. It used ten-year crash data from January 1, 2003 to December 31, 2012, a crash reduction factor of 0.57 for all crashes, and an estimated design and construction cost of \$1,259,177. The resulting benefit-cost ratio was 3.7:1.

Need Statement:

To correct the high number of run off the road crashes along the corridor of Speedway Boulevard between Painted Hills Road and Camino De Oeste, continuous paved shoulders need to be installed. Additionally installing continuous paved shoulders would allow for bike and vehicle separation as well as a safe vehicle recovery area and emergency pull out areas.

Scope Statement:

The project proposes to design and construct six-foot-wide paved shoulders along 1.6 miles of Speedway Boulevard between Painted Hills Road and Camino De Oeste. The project may require guardrail relocation and installation, header curb installation, drainage review/design, pipe extensions, cut/fill areas, and driveway adjustments to accommodate the new cross section. Additionally, revegetation will be performed if necessary due to cut/fill and realignment activities.

FINAL PROJECT ASSESSMENT

SPEEDWAY BOULEVARD: CAMINO DE OESTE TO PAINTED HILLS ROAD PAVED SHOULDERS

ADOT TRACS NUMBER - 0000 PM PPM SH 652 01C
FEDERAL ID NUMBER - HSIP-PPM-0(254)D
PIMA COUNTY PROJECT NUMBER - CTR.4HSBSP

JULY 2018

Sponsored By:



PIMA COUNTY DEPARTMENT OF TRANSPORTATION

Prepared For:



ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
PROJECT MANAGEMENT GROUP

Prepared By:



177 NORTH CHURCH AVENUE, SUITE 1105
TUCSON, ARIZONA 85701
(520) 882-6424

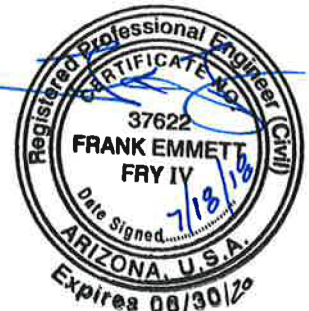


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1.0 INTRODUCTION

ADOT TRACS Number: SH652 01D/03D
Federal ID Number: HSIP-PPM-0(254)D
PAG TIP Number: 48.14
Pima County Project Number: CTR.4HSBSP

Project Name: Speedway Boulevard: Camino de Oeste to Painted Hills Road

ADOT District: Southcentral

ADOT Contact: Kirstin Tvedten, (602) 712-4493

Local Contact: Ted Roberts, (520) 724-6367

The project limits on Speedway Boulevard extend approximately 1.7 miles from Camino de Oeste to Painted Hills Road, within northeast Pima County, ADOT Southcentral District. This portion of Speedway Boulevard is located west of I-10 as Speedway Boulevard approaches Tucson Mountain Park (see Appendix A - Project Aerial Location Map).

This Project Assessment document has been prepared to present information for the planned shoulder widening improvements along Speedway Boulevard. The project will include a sawcut and widening of the existing roadway to accommodate paved shoulders on each side of the roadway, with milling and replacement of the existing roadway pavement between the sawcut lines (see Appendix B – Typical Project Cross Sections). Additionally, a guardrail assessment will be performed to evaluate the condition of the existing guardrail and provide a basis for the recommendation of any needed replacement.

The project is located about 6 miles northwest of downtown Tucson in unincorporated Pima County. The engineer's estimate for design and construction of paved shoulders project is \$2,846,675 (see Table 1 and Appendix C – Estimated Construction Costs).

The project is funded with Highway Safety Improvement Program (HSIP) funds, Grant funds, Local DOT 57 funds, and 4PPP18 Pavement Preservation funds. The total available funding from each source, as shown in Table 1, is \$225,074 from HSIP funds, \$1,579,000 from Grant funds, \$700,926 from Local DOT 57 funds, and \$341,675 from 4PPP18 Pavement Preservation funds. The total available funding for the project is \$2,846,675, all authorized for expenditure in FY19.

Budgets & Estimated Construction Cost	
Design	\$300,000
ROW	\$50,000
Utilities	\$10,000
Construction	\$2,462,675
Public Art	\$24,000
Design & Construction Subtotal	\$2,846,675

PAG HSIP Funds	Grants Pending	Local DOT 57 Funds	4PPP18 Pavement Preservation
\$225,074		\$74,926	
		\$50,000	
		\$10,000	
	\$1,579,000	\$542,000	\$341,675
		\$24,000	
\$225,074	\$1,579,000	\$700,926	\$341,675

Federal Funds Total	
Local Funds Total	
4PPP18 Pavement Preservation Funds Total	
Total Funds	

\$1,804,074		
	\$700,926	
		\$341,675
\$2,846,675		

Table 1 – Funding for Speedway Boulevard, Camino de Oeste to Painted Hills Road, Paved Shoulder Improvements

2.0 BACKGROUND DATA

2.0.1 Existing Conditions

Speedway Boulevard, from Camino de Oeste to Painted Hills Road, is typically a two-lane urban collector road that is owned and maintained by Pima County. Near the west end of the project limits, there is a Two-Way Left-Turn Lane for turning movements onto Circulo Zagala and Anklam Road, along with adjacent driveways north of Speedway Boulevard.

The existing intersection of Speedway Boulevard and Camino de Oeste is a T-Intersection providing SB to EB and WB to NB turning movements. However, WB through traffic on Speedway Boulevard will bypass this intersection by veering southwesterly where Speedway Boulevard becomes Gates Pass Road (Refer to Figure 1, Land Use Map, on the next page). Gates Pass Road at this location is aligned in a southwesterly direction and crosses Camino de Oeste. The project will provide paved shoulders along the portion of Gates Pass Road between Camino de Oeste and Speedway Boulevard, but will not improve the section between Camino de Oeste and Gates Pass Road.

This portion of Speedway Boulevard is functionally classified as an urban collector road and is also designated as a Scenic, Major Route by Pima County. The existing typical section consists of one 12-foot travel lane in each direction, with 1-foot paved outside shoulders with no curb. The typical existing cross slope is approximately 2%, with the maximum cross slope being 5.1% at the curve near Dusty Hollow Court. The posted speed limit is 35 mph between Camino de Oeste and Indigo Drive, and 40 MPH between Indigo Drive and Painted Hills Road. Two existing curves have reduced speed warning signs. The first is the previously noted curve at Dusty Hollow Court (15 MPH warning due to the presence of an existing, hidden driveway), and the other is the curve near Enclave Place (30 MPH warning).

Speedway Boulevard falls from an approximate elevation of 2620 to 2488 from west to east and is comprised of rolling terrain with several high points and low points throughout the corridor. The two steepest segments of the roadway are located near Dusty Hollow Court. To the west is a slope of approximately 6.8%, while the slope to the east is approximately 6.7%. Outside of these areas the road is typically flatter than 4.0%.

There are eight sections of guardrail within the project limits. The existing guardrail will be reviewed as a part of a guardrail assessment, evaluating the barrier's existing condition, as well as for length of need and/or height adjustment modifications. This assessment will be performed during the final design phase of this project.

Additionally, there are several locations along the project corridor that do not meet clear zone requirements and are not protected by guardrail. These areas have existing fill slopes within the clear zone that are too steep (steeper than 3:1) and do not provide sufficient recovery area at the toe of slope. The lack of sufficient clear zone in these areas will be mitigated with this project.

2.0.2 Land Use

The land adjacent to the project consists of private property in a suburban environment and Multi-Species Conservation Plan (MSCP) set-aside land owned by Pima County. At Painted Hills Road, the existing subdivisions are more dense (CR-1 is Single-Family Residential with a minimum lot size of 0.83 acres), with the density typically reducing as you move to the west, with a significant amount of property

being zoned SR - Suburban Ranch (Low density rural residential) with a minimum lot size of 3.31 acres.

In addition to the residential properties, there is also a restaurant that is no longer in business adjacent to Circulo Zagala, a TEP substation between Enclave Place and Coral Bells, a church, and a Tucson Water booster station just east of Painted Hills Road. Additionally, there is another Tucson water booster station and Feliz Paseos Park off Camino de Oeste, north of Speedway Boulevard. The Pima County Regional Wastewater & Reclamation Department (PCRWRD) has a lift station that pumps sanitary sewer under the Camino de Oeste Wash. This infrastructure is on the south side of Speedway Boulevard.

The project lies within Pima County Supervisor District 5. The area east of Painted Hills Road is within the City of Tucson's Ward 1.

2.0.3 Traffic

There are 9 side streets and 20 driveways on Speedway Boulevard from Camino De Oeste to Painted Hills Road. These intersections are primarily local roads to gated residential areas and the traffic control is Stop Sign.

Roadway lighting is not present along Speedway Boulevard within the project area. There are no bus routes along this section of Speedway Boulevard. No sidewalks or other pedestrian facilities are present. No schools are in the vicinity of the project.

Pima County designates only the portion of Speedway Boulevard, from Indigo Drive to Painted Hills, as a bike route with striped shoulder. See Figure 2 below.

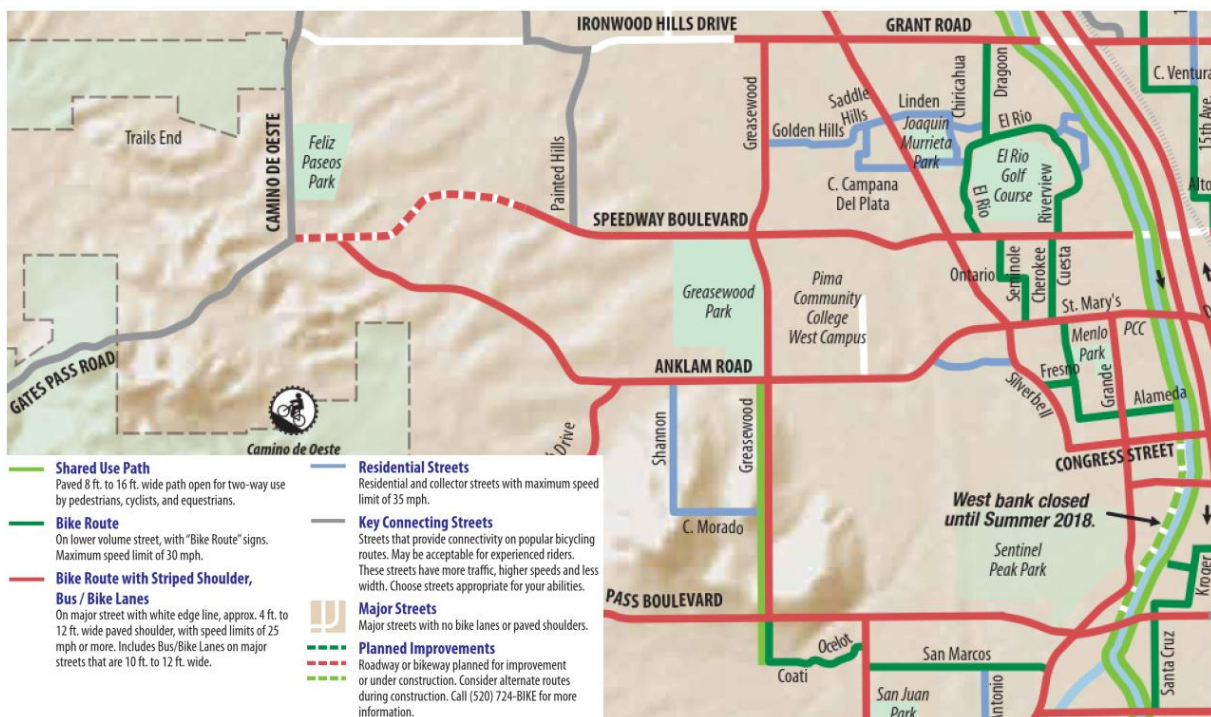


Figure 2 – Existing Bike Routes

There are geometric and safety deficiencies along Speedway Boulevard. Thirteen horizontal curves have been identified within the project limits. Of the thirteen, eight have been found to be deficient in superelevation for a design speed of 40 MPH. Of these eight, the horizontal curve near Enclave Place was found to be the most deficient.

Additionally, there are twenty-two vertical curves within the project limits. Of the twenty-two, seven have been found to have insufficient stopping sight distance for a 40 MPH design speed.

The most recent traffic data is shown below:

Roadway Segment or Intersection	Year	2-Way ADT
Speedway, Camino De Oeste to Anklam	2016	2557
Speedway, Anklam to Greasewood	2010	11653

Table 2 – Recorded Average Daily Traffic

There are no schools within a quarter-mile of the project limits.

2.0.4 Drainage

Generally, drainage adjacent to the project corridor flows from south to north, except between Dusty Owl Court and Enclave Place, where a 1% chance peak discharge of approximately 850 cfs, associated with an unnamed wash, crosses Speedway Boulevard from north to south. There are ten pipe culverts and one large concrete box culvert that crosses Speedway Boulevard within the project corridor. The 7-cell, 12-foot by 8-foot box culvert is located at the Camino de Oeste Wash between Camino de Oeste and Anklam Road. The approximate 1% chance peak discharge for Camino de Oeste Wash is 6,600 cfs. Additionally, West Speedway Wash with an approximate 1% chance peak discharge of 1,400 cfs runs parallel to south edge of Speedway Boulevard from west of Enclave Place to just west of Coral Bells Drive where there are existing culverts. Where site conditions indicate that existing culverts do not convey the 1% chance peak discharges under Speedway, slope and pavement edge protection will be installed.

2.0.5 Access

Speedway Boulevard from Camino de Oeste to Painted Hills is not access controlled. There are 9 side streets and 20 driveways throughout the corridor allowing access to Speedway Boulevard. While the majority of the roadway is a two-lane roadway, there is a left turn lane at Anklam Road and one at Circulo Zagala.

The approaching side streets to Speedway Boulevard are as follows:

- Gates Pass Road
- Dusty Hollow Court
- N. Coral Bells Drive
- Circulo Zagala
- Enclave Place
- N. Indigo Drive
- Anklam Road
- El Moraga Road
- Painted Hills Road

2.0.6 Right-of-Way

The existing Right-of-Way (ROW) along the project corridor varies significantly. Preliminary ROW Plans are included in Appendix G – Preliminary Roadway Plans.

Speedway Boulevard immediately east of Camino de Oeste is 60 feet. Where Gates Pass merges into Speedway Boulevard, the ROW widens to 110 feet. East of Anklam, the ROW is 70 feet until it widens across the frontage of The Enclave at Gates Pass. Across the frontage of this subdivision, the ROW varies from 92 feet to 110 feet. From Coral Bells Drive to Indigo Drive, the existing ROW varies from 70 feet to 150 feet. The ROW remains at 150 feet wide from Indigo Drive to Painted Hills Road. East of Painted Hills Road, the ROW reduces to 110 feet.

Title Reports have been acquired for three parcels along the north side of Speedway Boulevard immediately east of Coral Bells Drive. It has been determined that there is an encroachment onto these three parcels. This issue will be resolved with the final project.

2.0.7 Transit

SunTran, the regional transit service, has no routes along this corridor. The closest current route runs along Speedway Boulevard to Greasewood Road, approximately one mile east of Painted Hills.

2.0.8 Utilities

Table 3 summarizes the utilities located within the project area based upon research through Arizona 811/Blue Stake. Overhead electric and communication lines, cable, gas, fiber optic, Tucson Water infrastructure, and sanitary sewer are all present along the corridor. There is a sanitary sewer lift station to pump sewerage underneath the Camino de Oeste Wash. There is no street lighting along the project corridor.

UTILITY COMPANY/OWNER	SERVICE TYPE
Comcast Communications	Cable TV, Coaxial
Tucson Electric Power	Overhead Electric
Pima County Regional Wastewater Reclamation Department (PCRWRD)	Sanitary Sewer
Southwest Gas	Gas
Cox Communications	Cable TV, Fiber
CenturyLink	Coaxial, Fiber
Tucson Water	Water

Table 3 – Project Area Utilities

2.0.9 Crash History

Crashes along Speedway Boulevard between Camino De Oeste and Painted Hills Road were evaluated for a three-year period between 2007 and 2009 by Pima County. In addition, this segment of roadway was included in the Pima County Department of Transportation Traffic Engineering Division's 2013 Safety Management System (SMS) Program report, documenting a 3-year crash frequency of 8.75 crashes per mile, a rate of 3.04 crashes per million vehicle miles (mvm) and a Priority Index ranking of 10 (for roadway segments with < 10,000 vehicles per day (VPD)). With the Pima County 3-year average crash rate being 1.92 crashes per mvm for roadways with < 10,000 VPD, this portion of Speedway Boulevard is approximately 50% above the county average.

The project is the 6th ranked project in Pima County's Safety Project Priority List. A Benefit/Cost (B/C) analysis was calculated using a Crash Reduction Factor (CRF) of 0.57 for the installation of paved shoulders as a countermeasure for roadway departure crashes. The resulting B/C ratio of 3.69 met HSIP requirements for adding shoulders.

The following comments were made regarding the 15 crashes in the crash history:

- 6 crashes were Speed Too Fast for Conditions, 2 were Failure to Keep in Proper Lane, 1 was Improper Turn, 1 was Inattention, 1 was Failure to Yield, 2 were noted as Other, and 2 were Unknown
 - The "Others" included hitting a deer and hitting a flagman directing traffic
 - The "Unknown" included Lost Control and hit sign and Lost Control Run off the Road
- 9 were Westbound, 4 were Eastbound, and 1 involved a Northbound vehicle.
- 9 occurred during the Day, 6 occurred at night.
- 4 involved alcohol
- 1 occurred in a temporary construction zone.
- 4 involved a driver hitting guardrail

The accidents were spread throughout the corridor and not concentrated at a certain location. This project will improve conditions relating to over half of the crashes recorded/reviewed for this segment of Speedway Boulevard as they are associated with Speed Too Fast for Conditions and Failure to Keep in the Proper Lane.

2.0.10 Pedestrian and Bicycle Activity

While pedestrian activity is relatively non-existent due to the land uses adjacent to the corridor, bicycle activity is moderate with the one exception being the annual Tucson Bike Classic which uses the corridor for the Sunday morning ride. Coordination with this event will be required during construction. At this time, a pedestrian study is not anticipated for the project.

2.1 Purpose and Justification

The purpose of this project is to improve safety for the segment of Speedway Boulevard from Camino de Oeste to Painted Hills Road. The Safety Project Priority List as compiled by Pima County Department of Transportation (PCDOT) in their Safety Management System Program Annual Update Report for Calendar Year 2012 (SMS report) identified this project as the number 6 ranking in the priority index. Paved shoulder improvements are necessary to reduce the number and frequency of crashes along the corridor.

2.2 Alternatives Considered

The safety issues have been documented by PCDOT through their 2013 SMS report and crash data summaries. The Benefit/Cost (B/C) analysis and crash analysis meet the requirements for HSIP funding for shoulder widening improvements.

The existing pavement will be sawcut in order to construct the additional roadway width for the paved shoulders. The existing pavement between the proposed sawcut lines will be milled to improve the existing pavement condition. Geotechnical evaluations will be performed once the environmental clearance has been received. At this time, a 1-inch mill and 2-inch fill/overlay has been estimated for use in preparation of the estimated construction costs (Appendix C).

The safety improvement for the corridor will be achieved by the construction of paved shoulders.

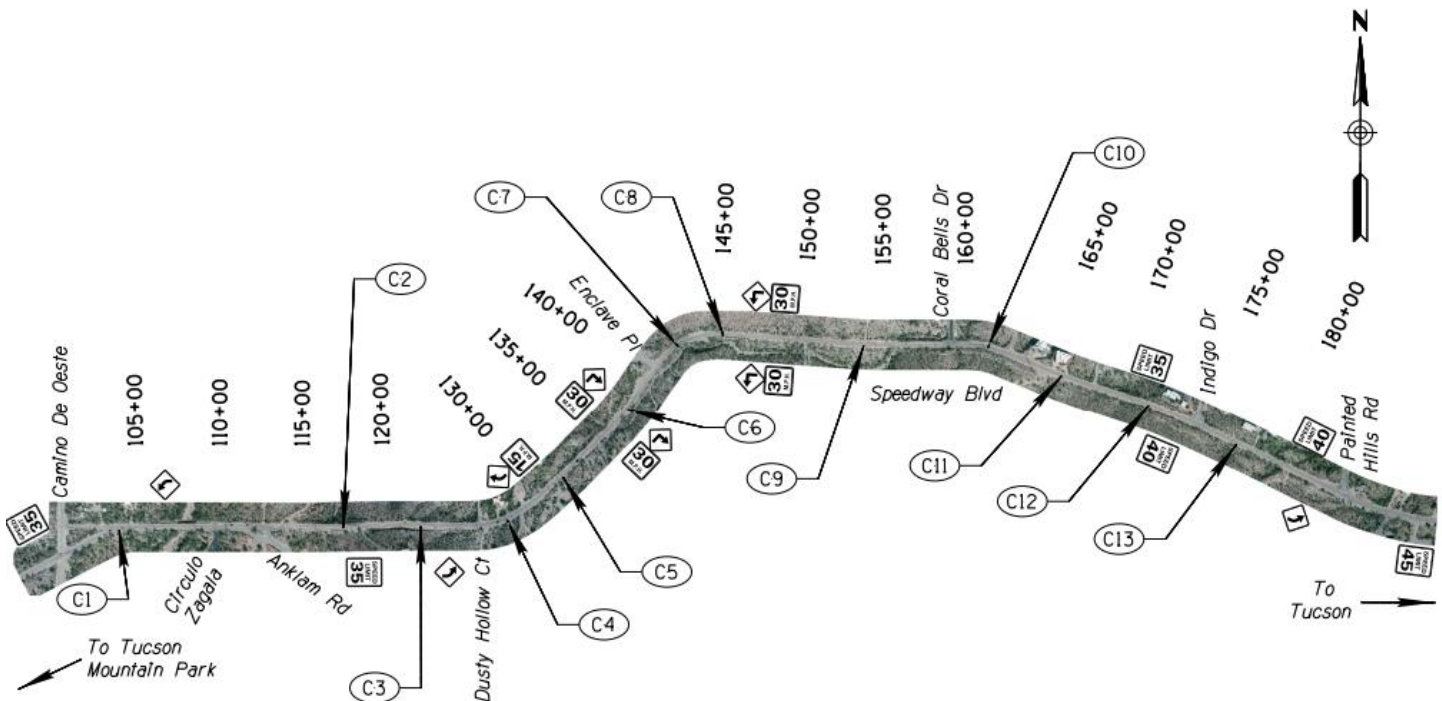


Figure 3 – Existing Project Area

A preliminary evaluation has found that there are geometric and safety deficiencies along Speedway Boulevard (see Table 4 for the results of this assessment). Of the thirteen horizontal curves identified within the project limits, eight of those have been found to be deficient in superelevation for the proposed design speed. Of the eight, the horizontal curve near Enclave Place, curve C7 above, was found to be the most deficient in the radius verses the design speed.

Similarly, there are twenty-two vertical curves within the project limits. Of the twenty-two, seven have been found to have insufficient stopping sight distance for a 40 MPH design speed.

Due to funding limitations, this project will not realign Speedway Boulevard to improve geometric deficiencies. Any geometric improvements to this portion of Speedway Boulevard would require a future project.

Existing Horizontal Curve No.	Existing PI Station	Existing Delta	Existing Degree of Curvature	Existing Radius (ft)	Existing Length (ft)	Existing Super.	Min. Super. Required	Sufficient AASHTO Super? (6% Max.)
C1	103+82.51	27°28'24"	10°25'03"	550.00	263.72	4.2%	5.9%	No
C2	117+00.44	1°39'20"	0°34'23"	10,000.00	288.95	2.2%	2.0%	Yes
C3	120+77.43	1°24'44"	1°08'45"	5,000.00	123.25	2.1%	2.0%	Yes
C4	127+14.57	35°34'15"	11°27'33"	500.00	310.41	5.1%	6.0%	No
C5	130+27.60	9°13'26"	2°51'53"	2,000.00	321.97	4.1%	3.2%	Yes
C6	137+13.90	10°3'4"	3°16'27"	1,750.00	306.99	5.7%	3.6%	Yes
C7	142+67.08	47°43'34"	16°22'13"	350.00	291.54	2.3%	5.6%	No
C8	144+94.71	11°34'60"	6°44'26"	850.00	171.55	2.3%	5.1%	No
C9	153+81.62	4°27'35"	1°54'35"	3,000.00	233.51	0.4%	2.4%	No
C10	161+23.38	22°25'32"	9°32'57"	600.00	234.84	1.4%	5.7%	No
C11	166+51.38	4°12'4"	1°54'35"	3,000.00	219.97	0.2%	2.3%	No
C12	172+24.11	5°55'20"	2°23'14"	2,400.00	248.07	0.2%	2.9%	No
C13	177+15.19	2°15'31"	0°22'55"	15,000.00	591.28	0.4%	N/A	Yes

Existing Vertical Curve No.	Existing VPI Station	Existing Length (ft)	Existing Curve Type	SSD Available (ft)	AASHTO Minimum SSD (ft)	Sufficient SSD?	Speed Available (mph)	Design Speed (mph)
V1	100+46	50	Crest	633	329	Yes	60	40
V2	101+55	100	Sag	124	329	No	21	40
V3	102+83	65	Crest	932	305	Yes	80	40
V4	103+85	50	Sag	>9,999	305	Yes	>100	40
V5	105+18	50	Sag	>9,999	302	Yes	>100	40
V6	109+30	100	Sag	489	314	Yes	53	40
V7	111+36	300	Crest	526	314	Yes	56	40
V8	113+71	100	Crest	651	309	Yes	64	40
V9	116+19	300	Sag	248	322	No	34	40
V10	121+15	250	Crest	218	339	No	30	40
V11	125+76	100	Sag	136	339	No	22	40
V12	130+08	300	Crest	370	337	Yes	42	40
V13	138+10	800	Sag	532	337	Yes	53	40
V14	144+63	50	Sag	>9,999	306	Yes	>100	40
V15	147+30	300	Crest	446	312	Yes	50	40
V16	150+01	150	Sag	553	312	Yes	58	40
V17	153+08	200	Crest	279	332	No	36	40
V18	156+63	150	Sag	186	332	No	27	40
V19	159+47	250	Sag	242	321	No	33	40
V20	164+69	350	Crest	320	321	No	40	40
V21	169+49	350	Sag	359	317	Yes	43	40
V22	172+59	250	Crest	405	313	Yes	47	40

Table 4 – Existing Horizontal and Vertical Curve Assessment

The intersection at Anklam Road was reviewed to see if improvements could be made to the existing intersection with Speedway Boulevard. Specifically, the following items were evaluated:

- Improve left-turn storage at the intersection
- Improve horizontal sight distance at the intersection
- Lengthen the existing radius of the northwest to north curve approaching the intersection (Curve 14).
- Eliminate the existing eastbound to southbound free right-turn from Speedway to Anklam Road (Curve 15).

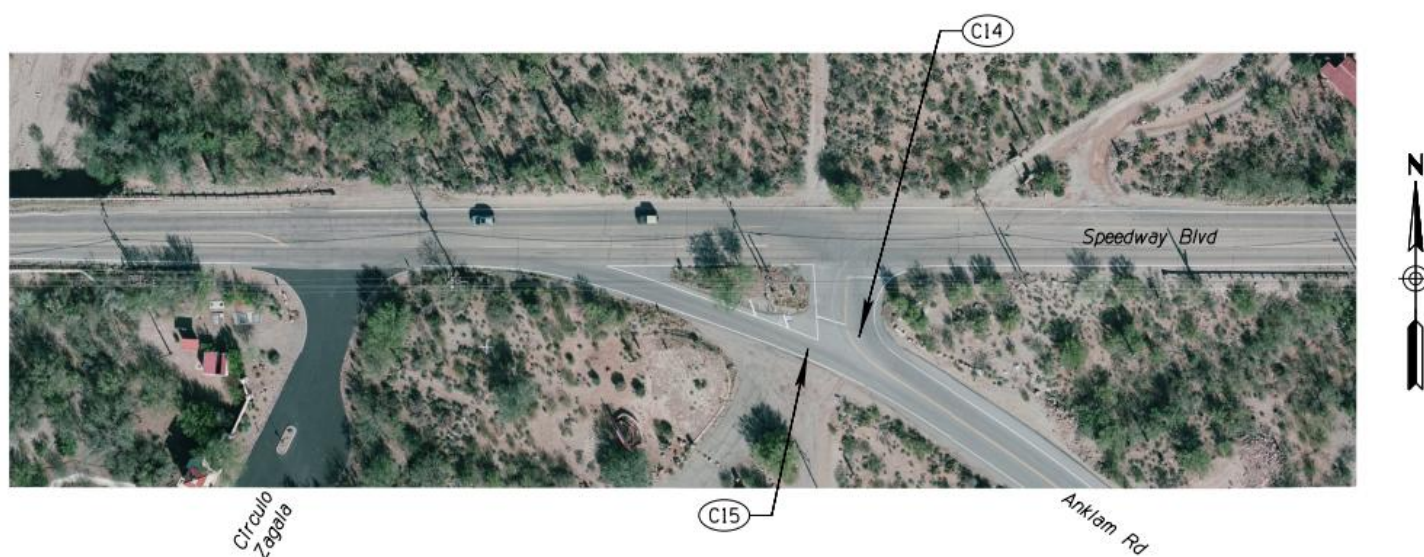


Figure 4 – Speedway Boulevard/Anklam Road Intersection

There were several concerns with regards to any modification of the Anklam Road intersection. Due to funding limitations, this project will not modify the existing Anklam Road intersection. Any improvements that may occur at this intersection will be constructed by a future project and are not included in this Speedway Boulevard, Painted Hills to Camino de Oeste project.

2.3 Recommendation

Based upon the available funding for the project, PCDOT recommends construction of 6-foot wide paved shoulders on each side of Speedway Boulevard from Camino de Oeste to Painted Hills Road, with a mill and overlay for the existing roadway pavement not being removed and replaced.

3.1 PROJECT SCOPE

Proposed improvements for the project include the following:

- Construction of paved shoulders along Speedway Boulevard from Camino de Oeste to Painted Hills Road.
- Mill and replace existing pavement between the proposed paved shoulders.
- Reconstruction of side street and driveway intersections to match pavement edges.
- Extensions of existing drainage structures due to pavement widening and/or roadway realignment.
- Guardrail removal/replacement due to poor condition, improper height and/or length, and/or conflict with proposed improvements.
- Signing and pavement markings.
- Geotechnical borings and utility potholing.
- Replacement of native plants disturbed by construction, with drought tolerant landscaping.
- Utility pole relocations and at-grade utility adjustments.
- Stabilization of disturbed areas.

3.2 Description of Improvements

WSP will provide the final design for this project.

The total design and construction costs are currently estimated at \$2,846,675, including a 15% contingency. Total available funding is \$2,846,675.

This will be a paved shoulders project. Connections to existing driveways and side streets will be adjusted to match the new edge of pavement.

Final design will include a preliminary traffic control evaluation. The contractor shall be responsible for developing the detailed traffic control plans in accordance with the latest version of the *Manual on Uniform Traffic Control Devices for Streets and Highways* (MUTCD). Traffic control will maintain one travel lane in each direction on Speedway Boulevard for the duration of the construction project, while access to drives and side streets will be maintained. The Special Provisions will include these requirements.

This project includes safety related construction items such as guardrails and paved shoulders.

Refer to Figures 5 and 6 for the State and Project Location Map and the Project Vicinity Map. A Project Aerial Location Map is located in Appendix A. Typical Cross Sections are shown in Appendix B. A copy of the FEMA maps can be found in Appendix D.

Refer to Section 4 of this document for additional improvement items and Project Development Considerations.

State Highway System

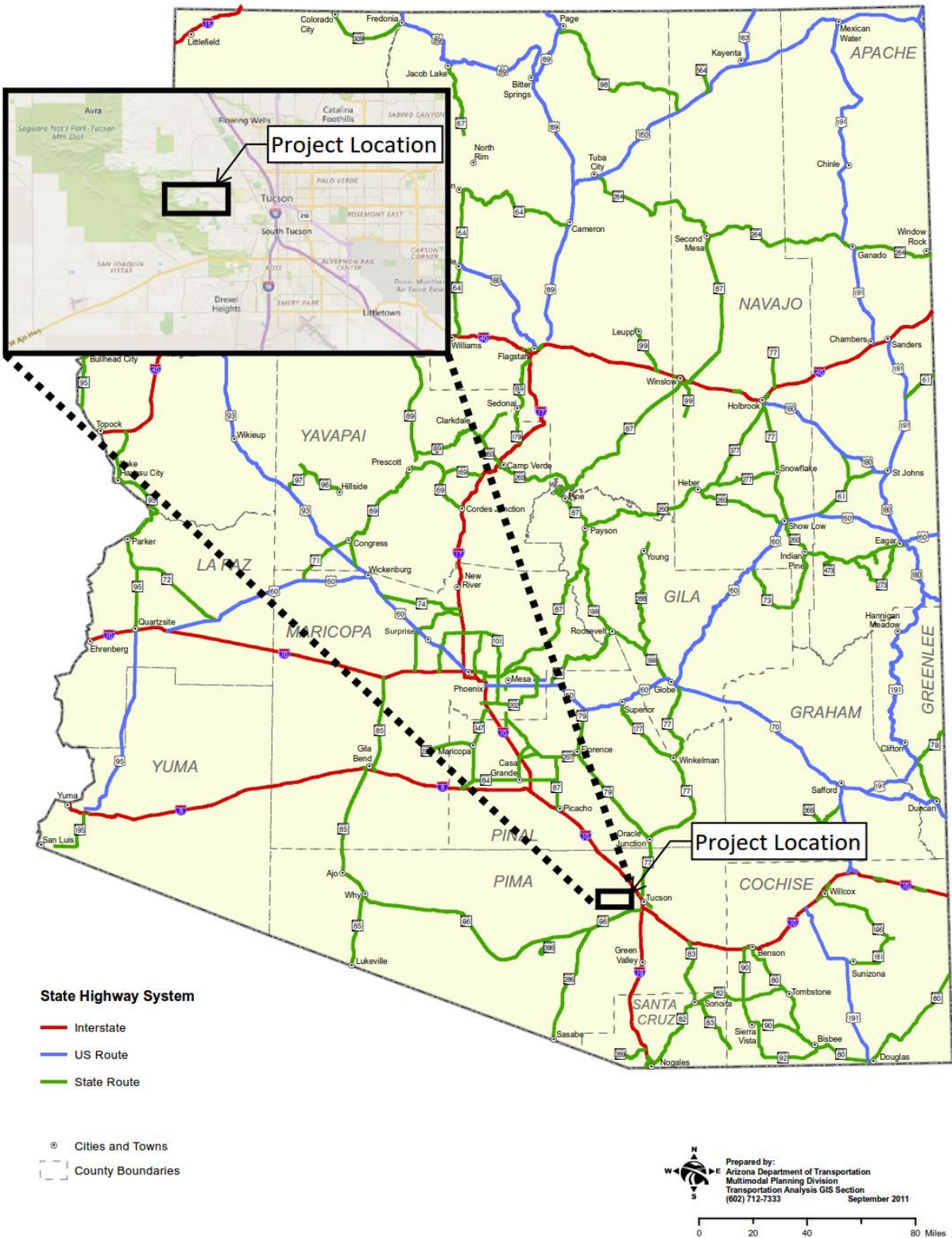


Figure 5 – State and Project Location Map

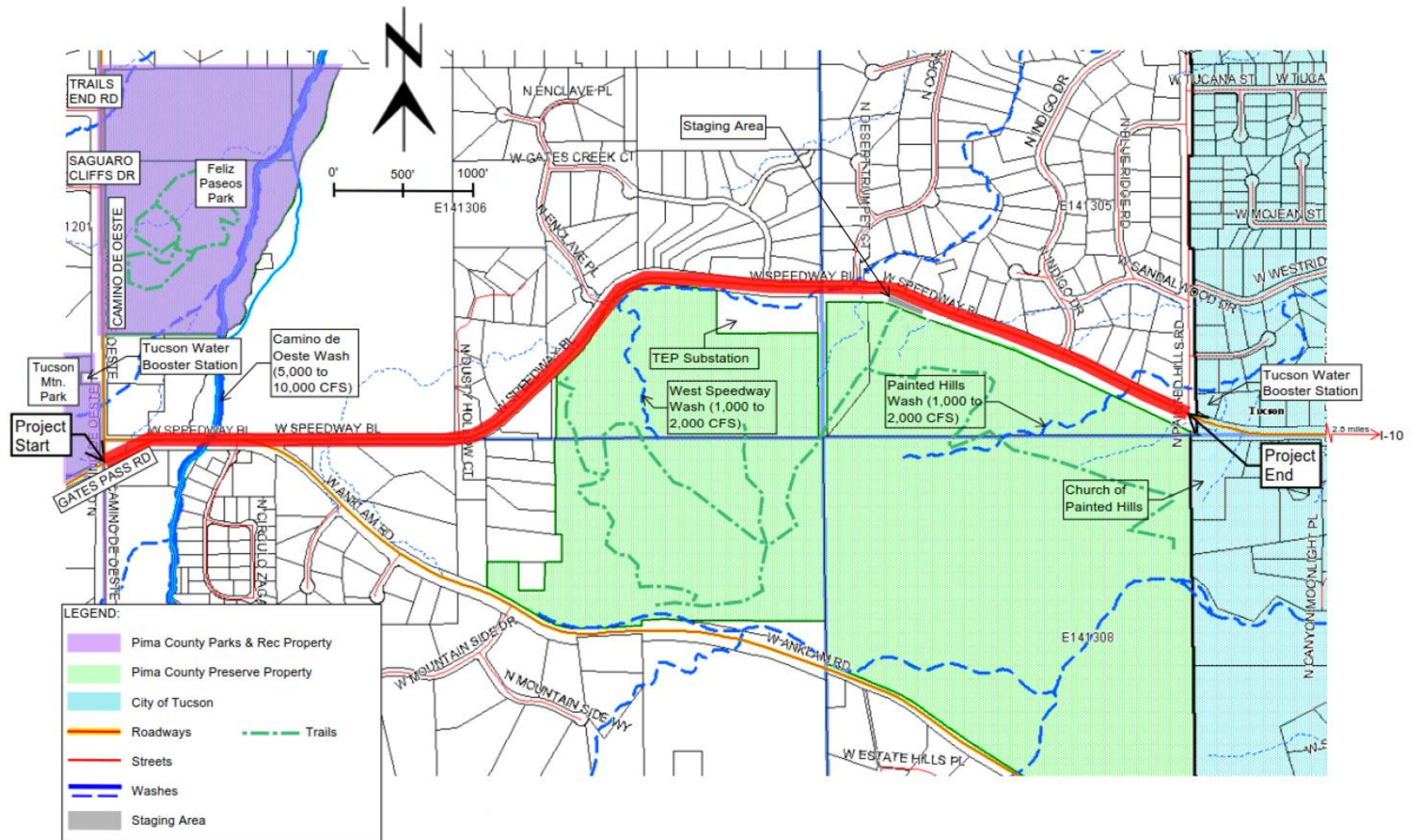


Figure 6 – Project Vicinity Map

4.0 PROJECT DEVELOPMENT CONSIDERATIONS

4.0.1 Drainage

The project will minimize impacts to existing drainage patterns and infrastructure. A drainage study/report is not scoped for this project, nor are hydrologic or hydraulic analyses.

For about 250 east of Indigo Drive, local drainage which travels along the north edge of Speedway Boulevard may need to be accommodated along proposed fill slopes.

The paved shoulder widening will require minor extensions to approximately five pipe culverts along the corridor; however, there will be no improvements to the Camino de Oeste Wash box culvert. Standard details will be used for any pipe extensions. Any angle break and/or changes to the outlet invert will be assessed to minimize impacts to the conveyance of the existing pipes.



Dual Pipe Culverts West of Enclave Place

All Pipe/culvert crossings along the corridor will be evaluated during final design to ensure that new cut and fill slopes, nor other improvements, do not adversely impact drainage.

No curbs or pavement drainage infrastructure will be proposed.

4.0.2 Landscaping

4.0.2.1 Existing Landscape

Existing native trees within the project limits include Blue and Foothills Palo Verde (*Parkinsonia spp.*), Velvet Mesquite (*Prosopis velutina*), and Catclaw Acacia (*Acacia greggii*). Existing native shrubs include Creosote (*Larrea tridentata*), Jojoba (*Simmondsia chinensis*), and Brittlebush (*Encelia farinosa*). Lastly, existing cacti include many Saguaros (*Carnegiea gigantea*), Fishhook barrels (*Ferocactus wislizeni*), and Cholla and Prickly Pear (*Opuntia spp.*). A complete inventory will be completed prior to the submittal of the 60% plans.

4.0.2.2 Proposed Landscape

Mitigation landscape to replace native plants disturbed by construction will be provided, based on Appendix 4D of the Environmentally Sensitive Roadway (ESR) Design Guidelines (Chapter 4 of the Roadway Design Guide). Mitigation landscape will also provide stabilization to newly graded slopes adjacent to the paved shoulder. Per the ESR Guidelines, mitigation landscape is required for all areas disturbed by construction, based on a native plant inventory. Disturbed areas to be revegetated and restored include all contractor work areas, including staging and storage areas. The project team will coordinate with the Pima County Native Plant Nursery to salvage cacti within the project limits. Existing native plants will be preserved in place where feasible with protective fencing. Plants that can be preserved but which may interfere with construction will be pruned prior to construction. In addition to plants, inorganic material, i.e. rock and riprap, may be required for stabilization. Buffelgrass and other invasive plants will be eradicated prior to utility work and construction. Eradication will continue during construction.



Check dams may be necessary to protect existing grades along the roadway.

4.1 Environmental Overview

Based on the scope of the project, it is anticipated that the project meets the criteria of a Categorical Exclusion as defined in 40 CFR 1508.4 and 23 CFR 771.117(c) and administered under the *Programmatic Agreement Between the Federal Highway Administration Arizona Division and Arizona Department of Transportation Regarding the Determination and Approval of Categorical Exclusion Actions for Federal-Aid Highway Projects*, dated July 2015. The project scope meets the criteria under 23 CFR 771.117 (c) (22) – Projects that would take place entirely within the existing operational right-of-way, and (23) Projects that receive less than \$5,000,000 of Federal funds. All relevant analyses and investigations will be subject to the FHWA/ADOT environmental approval process. Associated technical reports will be prepared. All documents will be reviewed by Pima County/PCDOT and the ADOT Environmental Planning.

The following environmental issues have been identified.

4.1.1 Species Investigation

The project area will be evaluated by a qualified biologist, and a Biological Evaluation Short Form (BESF) will be prepared. Developing this document will include reviewing and evaluating the U.S. Fish and Wildlife Service threatened and endangered species list and the Arizona Game and Fish Department (AGFD) Online Environmental Review Tool results. The document will also include the results of literature searches and the findings from agency staff interviews, as appropriate. Mitigation measures applicable to this project will be included, if needed, such as those for sensitive species.

The project will be evaluated for potential burrowing owl and Sonoran Desert tortoise presence as they are sensitive species for the AGFD. Saguaros and agaves (forage plants for lesser long-nosed bats) will be preserved in place where possible. Plants that cannot

be preserved will be replaced. The project area will be surveyed for Pima Pineapple Cactus. Mitigation measures applicable to this project will be included, as needed.

4.1.2 Wetland and Riparian Resources

There are no federal wetlands within the project corridor. Local Regulated Riparian Habitat (RRH) impacts greater than or equal to 1/3 acre will require mitigation via Pima County Regional Flood Control District (PCRFCDD) Riparian Ordinance.

4.1.3 Floodplains/Drainage

While other washes and tributaries are present, there is only one federally mapped floodplain within the project area, that being the Camino de Oeste Wash floodplain. Neither replacement of, nor modifications to the existing 7-cell, 12-foot by 8-foot concrete box culvert are included in the scope of work. Constructing paved shoulders over the existing drainage structure will not impact the mapped floodplain. See Appendix D – FEMA Maps (Map Numbers 04019C2260L, and 04019C2255L, specifically).

1% chance peak floodplains have not been mapped for the 850 cfs unnamed wash or the West Speedway Wash.

The paved shoulder design will match existing cross slopes, maintaining existing flow patterns, and not changing existing drainage areas.

The project will minimize impacts to existing drainage areas.

Pipe extensions will be designed to match existing culvert slopes.

4.1.4 Section 401/404

There are several known Waters of the US within the project area. Potential impacts to the current Ordinary High Water Mark will likely trigger a Preliminary Jurisdictional Delineation (PJD) and Section 401/404 permitting. A PJD has been completed, including a map of the proposed waters of the US (see Appendix I).

The PJD will be reviewed and forwarded to the ACOE via ADOT's Water Quality Group.

4.1.5 AZPDES Stormwater Permit

Any construction project that will disturb 1 or more acres of land will require an Arizona Pollutant Discharge Elimination Systems (AZPDES) general permit. This project will disturb more than 1 acre; therefore, a AZPDES permit will be required. The AZPDES NOI/NOT will be sent to the Pima County MS4 agency.

4.1.6 Section 4(f) Impacts

There are no schools within the project vicinity; however, the following items are located near the project area and require a 4(f) review (refer to Figure 6 – Project Vicinity Map):

- Feliz Paseos Park and Shay Park Trail #TP010 are located north of Speedway Boulevard along Camino de Oeste.
- Tucson Mountain Park is located to the west along Gates Pass.
- Greasewood Loop Trail #129 crosses under Speedway Boulevard through the existing box culvert at the Camino de Oeste wash. While this trail crosses project footprint, it is outside of the project disturbance area as no work will be performed within the Camino de Oeste wash.

- Painted Hills Trail is located south of Speedway just east of Coral Bells Drive, extending to the south and west to Ankham Road.

ADOT will determine if scoping letters are required for any of the items listed above.

4.1.7 Section 6(f) Impacts

There are no Section 6(f) land and water conservation fund areas within the project vicinity.

4.1.8 Potential Contaminants

A regulatory database search will be conducted to determine if hazardous materials or incidents relating to the release of hazardous materials has occurred in the project vicinity.

A Preliminary Initial Site Assessment, Lead-Based Paint Report, and Asbestos Containing Materials Report will be prepared during the environmental clearance process.

A Phase 1 Environmental Site Assessment (ESA) will be performed in order to process the ROW acquisitions.

4.1.9 Social or Economic Impacts

This intersection improvement project is not expected to result in substantive detrimental effects on the surrounding area, and would improve traffic operations and public safety with the addition of paved shoulders. Temporary construction impacts are expected; however, local and through access to residences and business would be maintained during construction.

4.1.10 Cultural Resource Investigations/Historic Route

A request for Archaeological Records Research will be submitted to the Arizona State Museum (ASM).

A cultural resources Class III field survey and report of the project Area of Potential Effect (APE) will occur as part of the environmental clearance. Section 106 consultation will be conducted during the environmental clearance process.

Speedway Boulevard is not a historic route.

4.1.11 Visual and Scenic Route

Speedway Boulevard is a county roadway and a Scenic, Major Route. A visual assessment will be required for this project.

4.1.12 Public Outreach

Public involvement will occur during the preparation of the Final PA, and also during final design. Project scoping letters will be mailed to local residents and appropriate agencies by Pima County. It is planned that an open house would be held to communicate project specifics to stakeholders and address stakeholder concerns. A summary of public outreach information will be submitted to ADOT during the environmental clearance process.

4.1.13 Sole Source Aquifer

Sole Source Aquifer notification to the Environmental Protection Agency Region 9 is not required per the scope of work for this project.

4.1.14 Air Quality

Because this project will not add capacity or alter the existing roadway alignment, this project is believed to be exempt with no meaningful potential Mobile Source Air Toxic effects. A fugitive dust activity permit from the Pima County Department of Environmental Quality will be obtained prior to construction activities.

4.1.15 Noise

The project scope does not meet the criteria under 23 CFR 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise, and therefore does not require a noise analysis. Shoulder widening is considered to be a Type III project as it does not meet the classifications of a Type I nor a Type II project. Per 23 CFR 772, Type III projects do not require a noise analysis.

During construction, the contractor shall comply with the Pima County noise ordinance (Pima County Code Chapter 9.30.070), which sets construction start and stop times to avoid nighttime noise disruptions. If nighttime work is required, the contractor shall obtain a permit from Pima County.

4.1.16 Geotechnical

An updated Geotechnical Engineering Report and an updated Pavement Design Summary will be provided for this project, utilizing the Geotechnical Engineering Report and Pavement Design Summary previously prepared in May of 2001. Recommendations for slope stability, new pavement sections, and mill and replace pavement sections will be provided in these documents. The estimated pavement sections are included in the Stage I Plans. Geotechnical borings are anticipated to be 5 feet deep.

While it is currently not anticipated, should utility potholing be required, it will be done during final design and will be within the existing ROW and within the area reviewed for environmental clearance. Utility potholing explorations are anticipated to be a maximum of 15 feet deep.

4.2 Critical Outside Agency Involvement

The project will be within Pima County ROW; however, ROW acquisition is required for 3 parcels. Construction Easements (TCEs) will be used throughout the project to match existing driveways and side streets to the widened pavement. Pima County Real Property will provide acquisition services and obtain rights of entry for private property access.

ADOT serves as the administrator for this project. ADOT Environmental staff will provide review and approval of environmental documents. ADOT Enhancement Staff will provide approval of planning documents based on environmental scope. Pima County will be impacted by this project and traveling public in the area may experience minor delays associated with the construction of this project. The County will coordinate construction activities with the Pima County Sheriff Department and local fire districts to keep them informed of all construction and lane restrictions. Adjacent property owners will be notified two weeks in advance of any access restrictions.

4.3 Right of Way Requirements

The majority of the project will be within existing Pima County ROW; however, acquisitions will be required at three parcels immediately east of Coral Bells Drive. This acquisition will be purchased prior to the request for funding authorization.

As shown in Figure 7 below, the anticipated ROW acquisition involves approximately 11,900 square feet from parcel number 116-04-159C, 9,200 square feet from parcel number 116-04-159K and 9,000 square feet from parcel number 116-04-159L. The acquired ROW will become Pima County roadway ROW.



Figure 7 – Proposed ROW Acquisitions

As shown in Stage I plans, TCEs are anticipated for driveway and private side street intersection reconstruction. These proposed TCEs are depicted in the Preliminary Roadway Plans (Appendix G).

Documentation of date and method of property acquisition will be submitted to ADOT Right-of-Way Group for certification prior to submittal of the request for funding authorization. Pima County Real Property Division will issue the right of way certification on this project.

4.4 Utility Relocation Requirements

An assessment of the existing clear zone has been performed and based upon a 16-foot clear zone width, it is anticipated that approximately 16 power poles will need to be relocated. This work will require close coordination with TEP, including considerations for their relocation schedule in conjunction with the overall construction schedule.

Minor adjustments to sanitary sewer manholes will be required as a result of this project. Other minor utility modification may be necessary. These adjustments will be made during

project construction and will be included in the final plans and specifications. The County has certification acceptance, however, documentation of utility clearance will be submitted to ADOT Utility and Railroads Section for certification prior to the submittal of the request for funding authorization. Pima County will issue the utility certification on this project.

4.5 Seasonal Considerations

Placement of concrete and bituminous compounds will be conducted in accordance with temperature requirements as specified in the *2015 Pima Association of Governments (PAG) standards*. Local events will not be impacted by the construction phasing since lane restrictions or closures are not anticipated.

The relocation of TEP poles will be performed within their construction window of late fall to early spring.

Removal of vegetation shall be performed between September 1st and February 28th.

4.6 Traffic Requirements

Traffic control will maintain one travel lane in each direction on Speedway Boulevard for the duration of the construction project.

All business and residential access will be maintained at all times. The contractor shall notify all businesses and residences regarding any driveway pavement work prior to construction.

4.7 Design Criteria

The design criteria for the project shall be per these references:

- American Association of State Highway and Transportation Officials (AASHTO) *A Policy on Geometric Design of Highways and Streets*, 6th Edition, 2011
- American Association of State Highway and Transportation Officials (AASHTO) *Roadside Design Guide*, 4th Edition, 2011
- Pima County Roadway Design Manual, Fourth Edition, 2013
- Manual of Uniform Traffic Control Devices, (MUTCD), 2009
- Pima County/City of Tucson Signing Manual, 2002
- Pima Association of Governments Standard Specifications for Public Improvements, 2015
- Pima Association of Governments Standard Details for Public Improvements, 2015
- PCDOT/City of Tucson Pavement Marking Design Manual, Second Edition 2008

4.8 Material Storage, Staging and Stockpile Areas

The Special Provisions for this project will include requirements to minimize potential impacts anticipated for project staging and material storage. This language will clearly require that all project staging, including equipment and material storage, take place within existing ROW, or on paved areas, or within the previously disturbed roadway shoulder, or in the Construction Contractor's privately owned construction yard.

One area has been identified for staging within the existing ROW and within the area reviewed for environmental clearance by the project. It is located east of Coral Bells Drive, on the south side of Speedway Boulevard. An area of 30 by 250 feet (7500 SF or 0.17

Acres) is available for staging in an area that is relatively flat ($\pm 2.0\%$ longitudinal slope) and in an area that appears to have been cleared previously for utility installation.

Environmentally Sensitive Roadway (ESR) mitigation will be provided, as needed, in conjunction with the planned staging area.



Figure 8 – Proposed Staging Area

4.9 Maintenance

Pima County will assume maintenance responsibilities upon the completion of the project.

5.0 OTHER REQUIREMENTS

Construction contract method will be awarded using a design bid/build process. The Pima County Department of Transportation (PCDOT) will administer the design and construction of this project.