Statewide Shoulders Study

Task MPD 059-14

Final Report

August 2015

Prepared by

JACOBS

Table of Contents

List of Tables

List of Tables (Continued)

List of Figures

List of Figures (Continued)

1. Study Overview

Located adjacent to a roadway's travel lanes, highway shoulders are essential components on any road section. Highway shoulders serve several purposes:

- Creates a safe zone for vehicles to safely exit travel lanes during emergency situations
- Allows motorists an area to maneuver if they exit the travel lane
- Increases sight distance of horizontal curves
- Provides bicyclists with a safe area adjacent to vehicle travel lanes
- Increases driver's sense of safety
- Provides structural support to highway pavement
- Protects the highway surface from damage caused by water flow
- Creates a storage area during snow removal

Shoulder improvements can lead to a plethora of safety and operational improvements, such as reduction in crashes, safe pedestrian and bicycle facilities, mitigation of drainage issues, and increased roadway capacity. Potential safety hazards can occur when a vehicle leaves the travel way and there is a significant material and elevation difference between highway pavement and shoulder surfaces. This elevation difference can affect vehicle stability, reduce a driver's ability to handle the vehicle, and often cause head-on, sideswipe, rollover, and fixed object crashes. Shoulder paving is recognized as a positive countermeasure to reduce a shoulder drop-off hazard that will accommodate stopped vehicles to avoid encroachment from the travel way, facilitate maintenance work, provide access for emergency vehicles, and protect pavement structural integrity. A paved shoulder can also assist in preventing damage to the road structure caused by water infiltration and can provide motorists with a warning system when veering off the roadway (i.e., rumble strips).

Purpose and Need

With the ultimate purpose of enhancing safety and improving mobility, the *Statewide Shoulders Stud*y was initiated to develop a prioritized list of candidate locations for shoulder improvements. The need for this study stems directly from ADOT's desire to increase safety and mobility along the Arizona State Highway System. The project purpose is demonstrated with the following statement of need:

- **Create Methodology.** As the first statewide, shoulder improvement prioritization project conducted in Arizona, a methodology needs to be developed that utilizes available data to accurately identify deficiencies. A statewide and district-level prioritization is needed in order to appropriate limited funds for priority projects.
- **Develop List of Shoulder Improvement Locations.** Currently, there is no statewide or ADOT Engineering District-wide listing of prioritized locations for shoulder improvement projects. This document will serve as

guidance for determining priority roadway segments within each ADOT District and throughout the State that require funding.

- **Develop Feasible, Cost Effective Implementation Plan.** High priority projects need to be evaluated for feasibility and cost-effectiveness. Due to limited funding, innovative and cost effective alternatives beyond traditional pavement applications need to be explored.

Technical Advisory Committee

This study was guided by a Technical Advisory Committee (TAC). The role of the TAC was to provide technical guidance, support, advice, suggestions, recommendations, and to perform document reviews throughout the study process. TAC members included representatives from:

- ADOT Multimodal Planning Division
- ADOT Phoenix Engineering District
- ADOT Tucson Engineering District
- ADOT Prescott Engineering District
- ADOT Yuma Engineering District
- ADOT Flagstaff Engineering District
- ADOT Holbrook Engineering District
- ADOT Kingman Engineering District
- ADOT Globe Engineering District
- ADOT Safford Engineering District
- ADOT Roadway Engineering Group
- ADOT Maintenance Group
- ADOT Bridge Group
- ADOT Right of Way
- ADOT Traffic Safety Section
- Federal Highway Administration (FHWA)

2. Literature Review and Design Standards

Reviewing current practices and methodologies utilized by state Department of Transportation (DOT) agencies and relevant technical literature often provides insight into best practices that ADOT can utilize to enhance or streamline the identification and prioritization of shoulder improvement projects.

Nationally Recommended Shoulder Guidelines

The American Association of State Highway and Transportation Officials (AASHTO) *A Policy on Geometric Design of Highways and Streets* provides shoulder width standards on the national level. Table 2.1 summarizes minimum shoulder width per AASHTO guidelines. The standards displayed in the table represent design values for usable and paved shoulders – usable shoulder width is the actual width utilized by motorists and is measured from the edge of the travel lane. For interstates with six or more lanes AASHTO recommends that the right shoulder width not be less than 10 feet. Additionally, AASHTO recommends a paved 12 foot right shoulder on interstates with six or more lanes and truck traffic exceeds 250 DDHV (directional design hour volume).

Table 2.1: AASHTO Shoulder Width Design Guidelines

Type of Roadway	Rural		Urban	
	US (Feet)	Metric (Meters)	US (Feet)	Metric (Meters)
Freeway	4 - 12	1.2 - 3.6	4 - 12	1.2 - 3.6
Ramps (1-Lane)	1 - 10	0.3 - 3.0	1 - 10	0.3 - 3.0
Arterial	2 - 8	0.6 - 2.4	2 - 8	0.6 - 2.4
Collector	2 - 8	0.6 - 2.4	2 - 8	0.6 - 2.4
Local	2 - 8	0.6 - 2.4	-	-

Source: AASHTO A Policy on Geometric Design of Highways and Streets

ADOT Shoulder Design Standards

Table 2.2 summarizes the minimum shoulder width per ADOT's Roadway Design Guidelines.

Table 2.2: ADOT Shoulder Width Design Guidelines

Highway Type	Paved Shoulder Width (Feet)	
	Left	Right
Controlled Access Highways		
4 lanes	4	10
6 or more lanes	10	10
Auxiliary lanes	-	10
1-lane freeway to freeway directional ramp	6	10
2-lane freeway to freeway directional ramp	4	8
1-lane and 2-lane ramps	2	8
Ramp termini at crossroad	2	2

Table 2.2: ADOT Shoulder Width Design Guidelines (Continued)

Highway Type	Paved Shoulder Width (Feet)	
	Left	Right
Non-Controlled Access Highways		
Rural multi-lane divided	4	10
Rural 2-Lane: DHV > 200 vph	-	8
Rural 2-Lane: DHV < 200 vph	-	6
Urban multi-lane divided	2	4
Urban multi-lane undivided: 5 or more lanes	-	4
Urban multi-lane undivided: 4 lanes	-	4

Source: ADOT Roadway Design Guidelines

Highway Safety Manual (HSM)

A crash modification factor (CMF) is a multiplicative factor used to compute the expected number of crashes after implementing a given countermeasure at a specific site. The HSM provides CMFs for the widening of highway shoulder on rural two-lane roadway segments (See Table 2.3). According to the HSM, for roadways with an AADT of 400 or less, shoulder width has a small crash effect. On roadway segments with an AADT of greater than 2000, shoulder widths less than 6 FT are predicted to experience significantly more crashes than roadway segments with 8 FT shoulders.

Table 2.3: Crash Modification Factor for Shoulder Width on Rural Two-Lane Roadway Segments

Shoulder Width	Average Annual Daily Traffic (vehicle/day)		
	<400	400 - 2000	>2000
0 FT	1.10	1.10 + .00025 (AADT - 400)	1.50
2 FT	1.07	1.07 + .000143 (AADT - 400)	1.30
4 FT	1.02	1.02 + .00008125 (AADT - 400)	1.15
6 FT	1.00	1.00	1.00
8 FT of More	0.98	0.98 + .00006875 (AADT - 400)	0.87

Source: Highway Safety Manual

Note: The collision types related to shoulder width to which this CMF applies include single-vehicle run off the road and multiple-vehicle head-on, opposite direction sideswipe, and same-direction sideswipe crashes.

Standard error of the CMF is unknown.

To determine the CMF for changing paved shoulder width and/or AADT, divide the "new" condition CMF by the "existing" condition CMF.

On divided roadway segments, the HSM provides CMFs if base condition shoulders (8 FT) are reduced. Table 4.2 provides a table of the potential crash effects if right shoulder widths are reduced on divided roadway segments. As shown in the table, on divided segments a roadway segment with a 0 FT shoulder is predicted to experience 18% more crashes than a roadway segment with an 8 FT shoulder.

Table 2.4: Potential Crash Effects of Paved Right Shoulder Width on Divided Roadways

Treatment	Setting (Road Type)	Traffic Volume	Crash Type (Severity)	CMF	Std. Error
8 FT to 6 FT Conversion	Rural (Multilane Highway)	Unspecified	All Types (Unspecified)	1.04	N/A
8 FT to 4 FT Conversion				1.09	
8 FT to 2 FT Conversion				1.13	
8 FT to 0 FT Conversion				1.18	

Source: Highway Safety Manual
Note: Base conditions = 8 FT wide shoulders
N/A = Standard error of CMF is unknown

Bicycle and Pedestrian Shoulder Guidelines

Per the Arizona State Department of Transportation State Transportation Board's Policies, it is a policy of the Board to encourage bicycling and walking as a viable transportation mode and to actively work toward improving Arizona's transportation network to accommodate these modes. To accommodate bicycle travel, AASHTO recommends that paved shoulders be at least four feet wide – this measurement does not include the width of rumble strips.

3. Existing Conditons Assessment

Data Collection

ADOT's GIS section, Bridge group, and Traffic Records Division now manage a robust and more accurate repository of transportation databases. At the onset of the study, the study team met with the GIS Section and ADOT PM to obtain the data identified in Table 3.1. Each database was reviewed for quality and the data was adjusted where appropriate.

Table 3.1: Data Items and Sources

Dataset	Source
Shoulder Conditions - Paved shoulders - Unpaved shoulders - Guardrail - Barriers	ADOT GIS section
Accident Location Information and Surveillance System (ALISS) Crash Database	ADOT Traffic Records
Traffic volumes (AADT) - Current and past 5 years - Vehicle classification, K & D factors - Seasonal adjustment factors	ADOT GIS section
Future traffic volumes	ADOT GIS section
Functional classification	ADOT GIS section
Highway video log	ADOT GIS section
Highway centerline GPS data	ADOT GIS section
Highway log - Median type - Lane width - Grade/Terrain - Speed - Traffic Signals	ADOT GIS section
ATIS Dataset	ADOT GIS section
Statewide Transportation Improvement Program (STIP)	ADOT MPD

Table 3.1: Data Items and Sources (Continued)

Dataset	Source
Highway Performance Monitoring System (HPMS) - Beginning MP, Ending MP - Ownership - Lanes - Access Center Lane - Median and median width - Curve and Curve Length - Horizontal Alignment - Vertical Alignment - Urban and Rural	ADOT GIS section
Transportation Data Management System (TDMS)	ADOT GIS section
Bridges and Structures	ADOT Bridge Group
As-built drawings	ADOT ROW

Existing Shoulder Widths

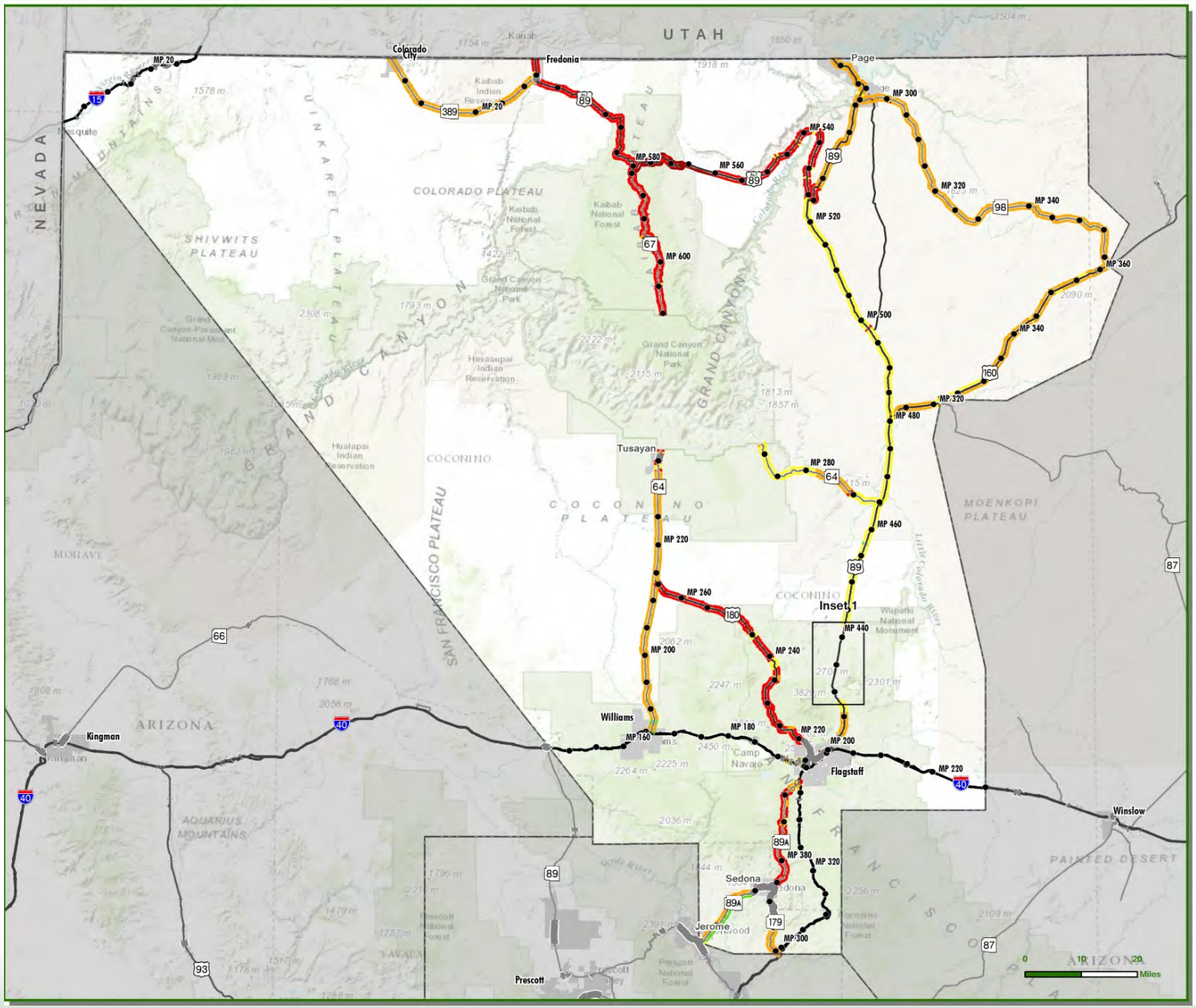
Compiling a comprehensive inventory of existing shoulder locations and conditions is an essential first step before evaluating the need for improving highway shoulders. ADOT's existing shoulder data set was used as the starting point. Verification of the shoulder width data was broken into three steps: District Engineer consultation, verification of corridors using ADOT's videolog, and finally verification of randomly selected locations based on shoulder related crash frequency using ADOT's videolog. ADOT's District Engineers have a first-hand understanding on the roadway conditions within their district. The study team met with each District to obtain feedback on shoulder width conditions based on ADOT's GIS dataset. Thirteen highway corridors were recommended by the ADOT District staff for review; and based on measurements acquired from ADOT's PhotoLog, shoulder widths were updated. Table 3.2 provides a summary of the accuracy rating of the shoulder width GIS dataset against manually acquired measurements.

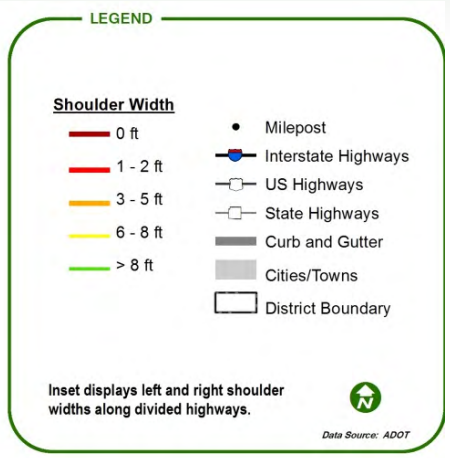
Table 3.2: Manual Verification of Shoulder Width GIS Data Accuracy

Shoulder Width Range	Number of Segments Recommended for Review	Percent of PhotoLog Observations Matching GIS Data
0 FT	1	100%
1 - 2 FT	11	91%
3 - 5 FT	26	92%
6 - 8 FT	14	100%
> 8 FT	11	100%

Figures 3.1 to 3.16 illustrate the existing shoulder width conditions in each ADOT District.

Figure 3.1: Existing Shoulder Conditions - Flagstaff District





Inset 1 - US 89: MP 428 - MP 442

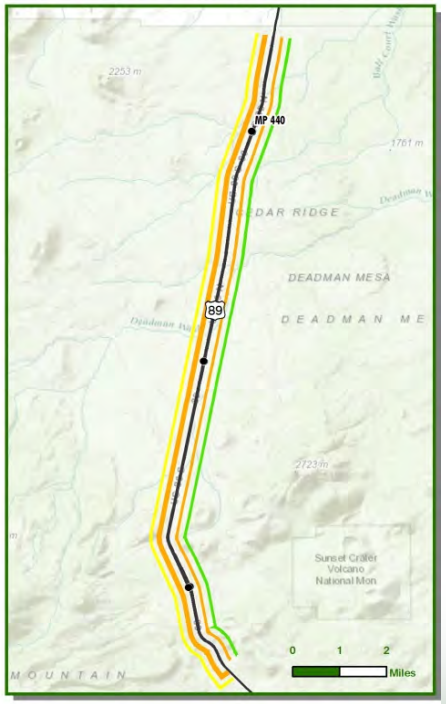


Figure 3.2: Existing Shoulder Conditions - Flagstaff District (Divided Highways)

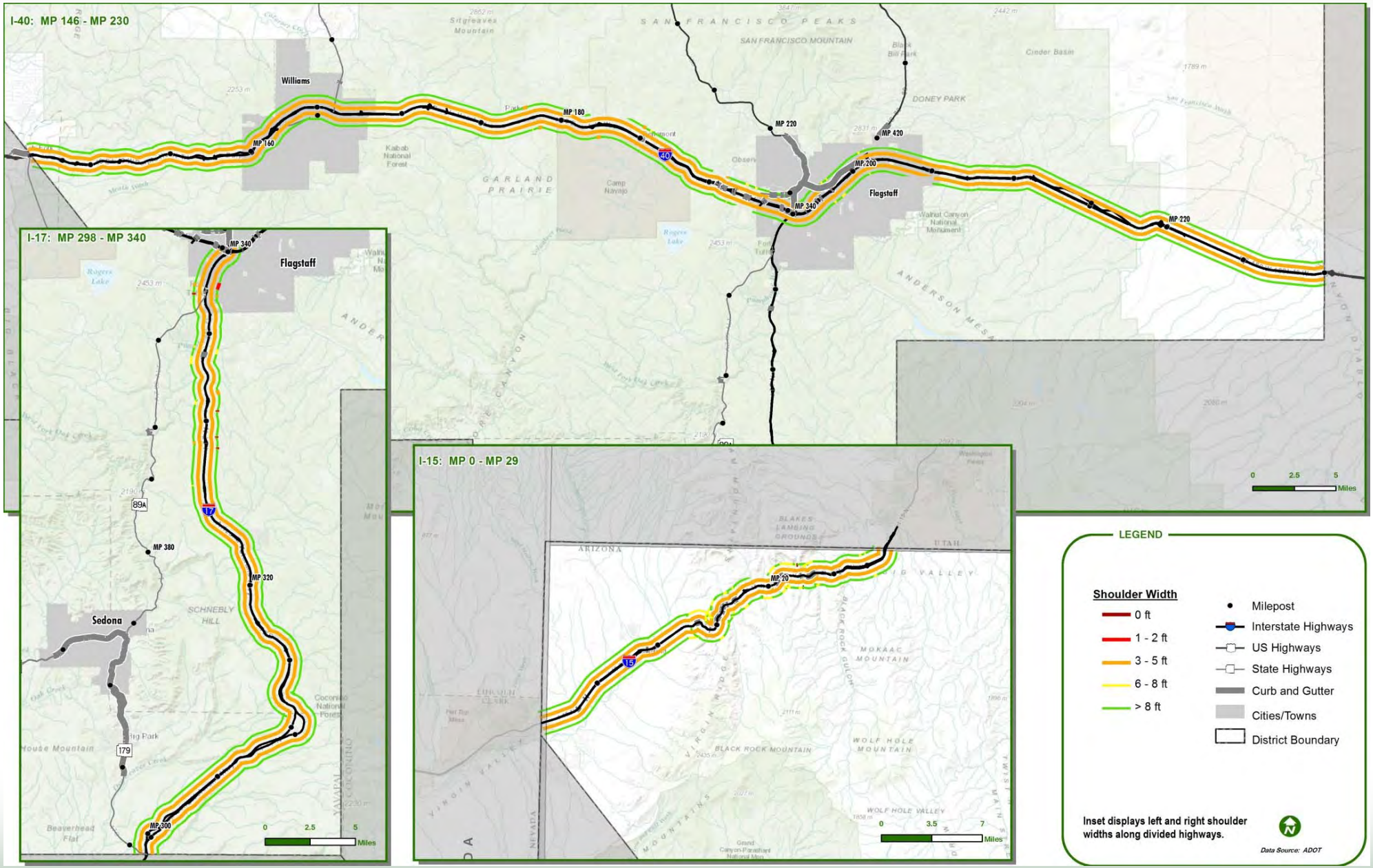


Figure 3.3: Existing Shoulder Conditions - Globe District

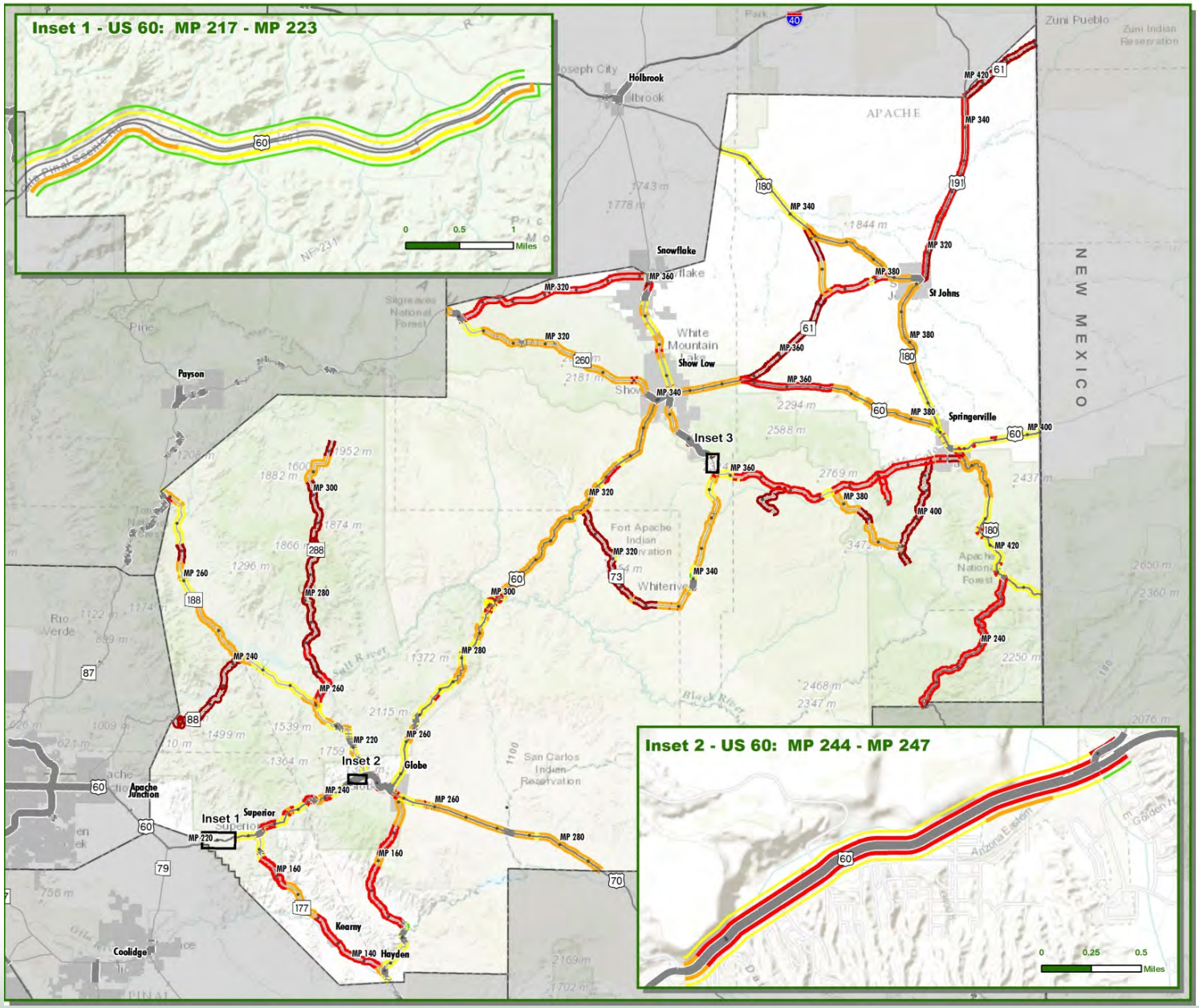


Figure 3.4: Existing Shoulder Conditions - Holbrook District

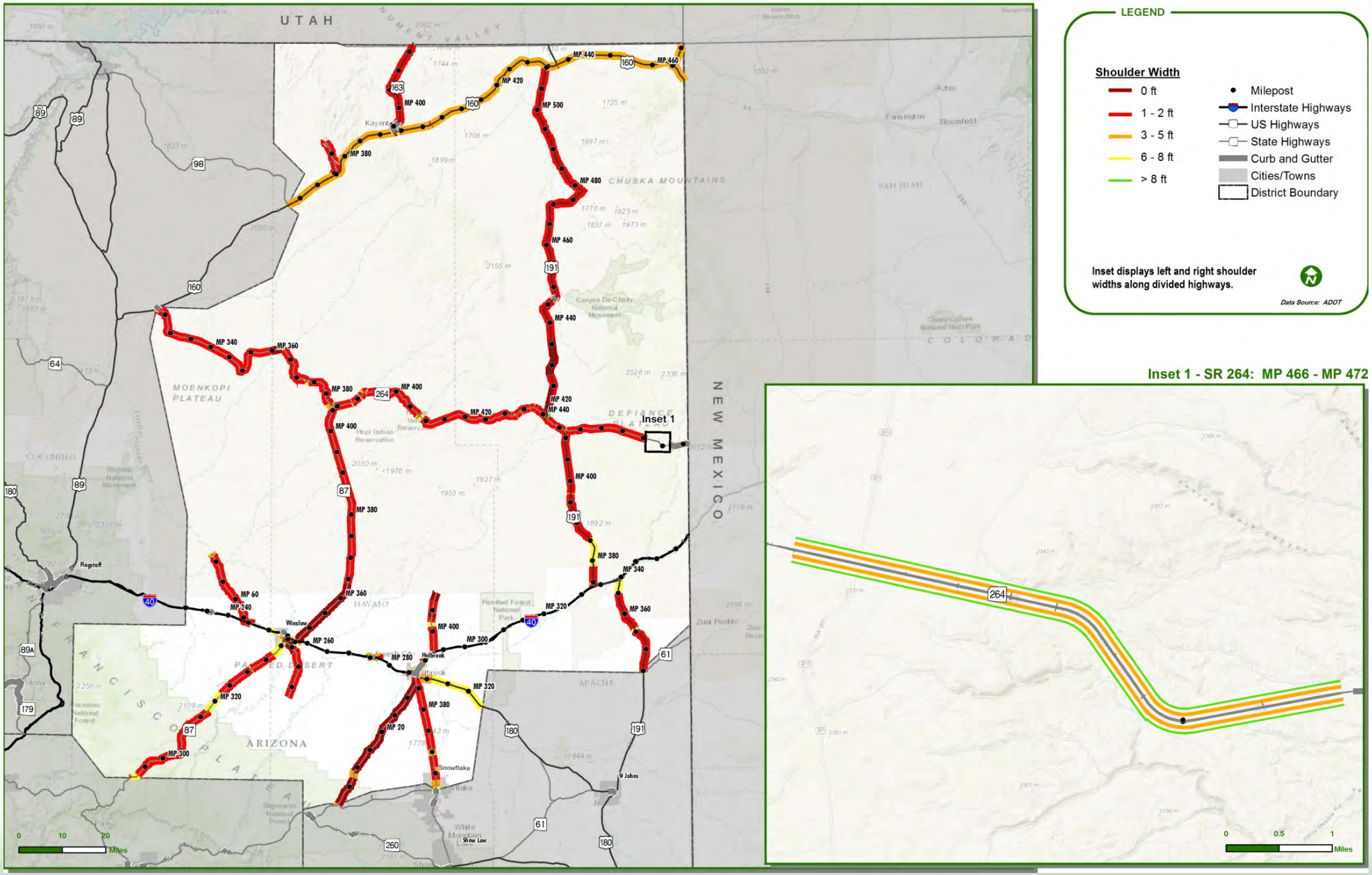


Figure 3.5: Existing Shoulder Conditions - Holbrook District (Divided Highways)

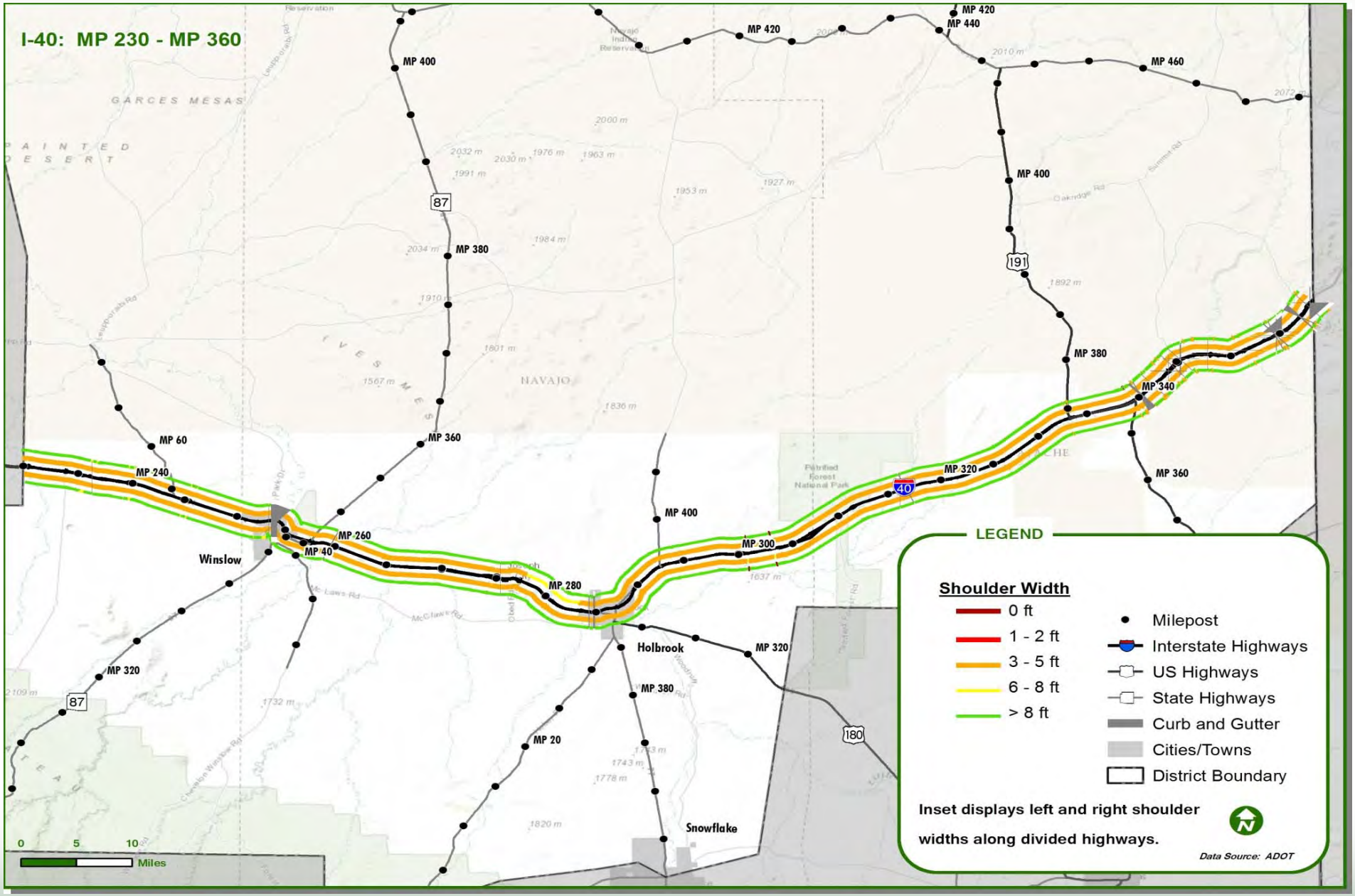


Figure 3.6: Existing Shoulder Conditions - Kingman District

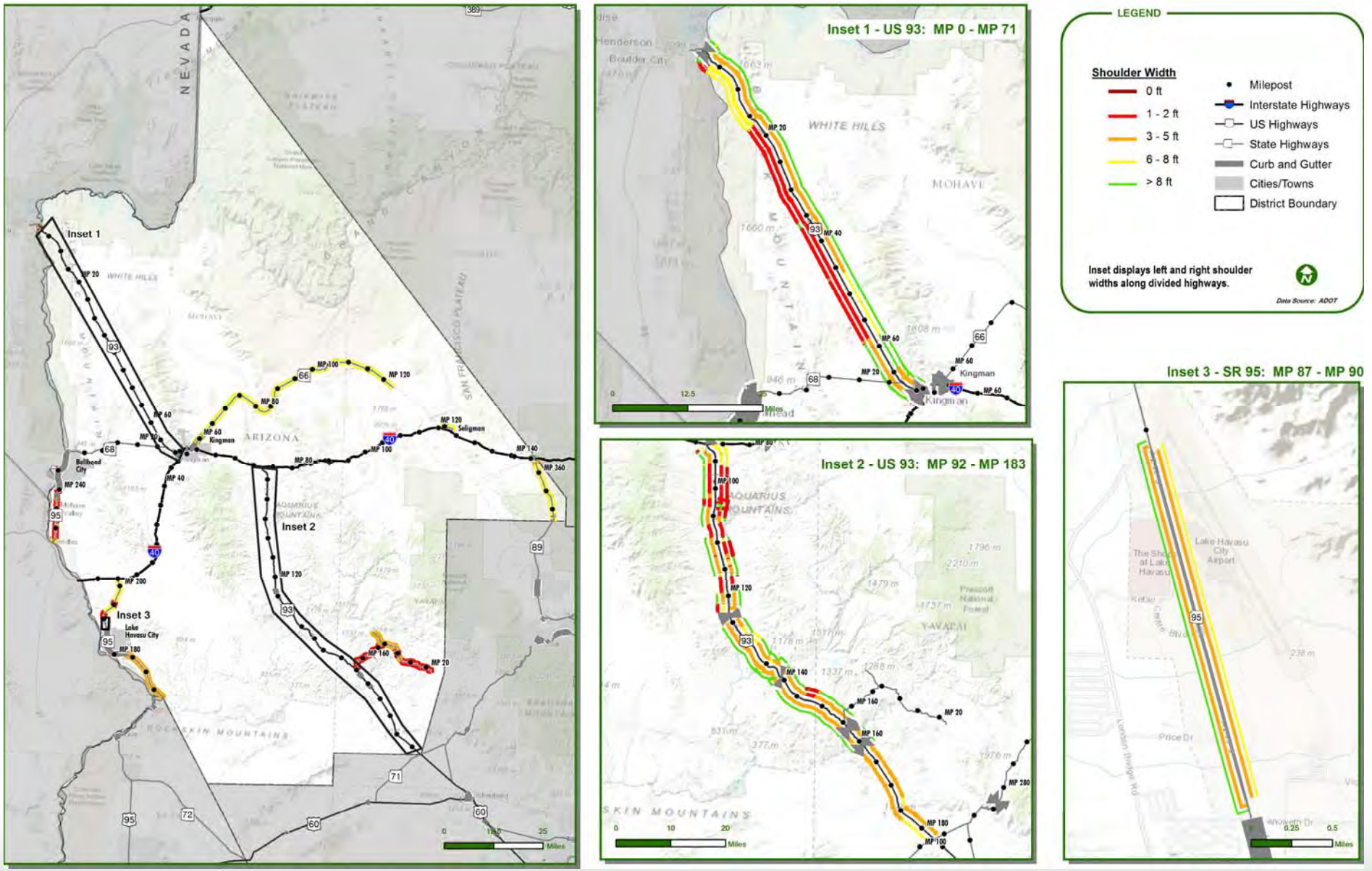


Figure 3.7: Existing Shoulder Conditions - Kingman District (Divided Highways)

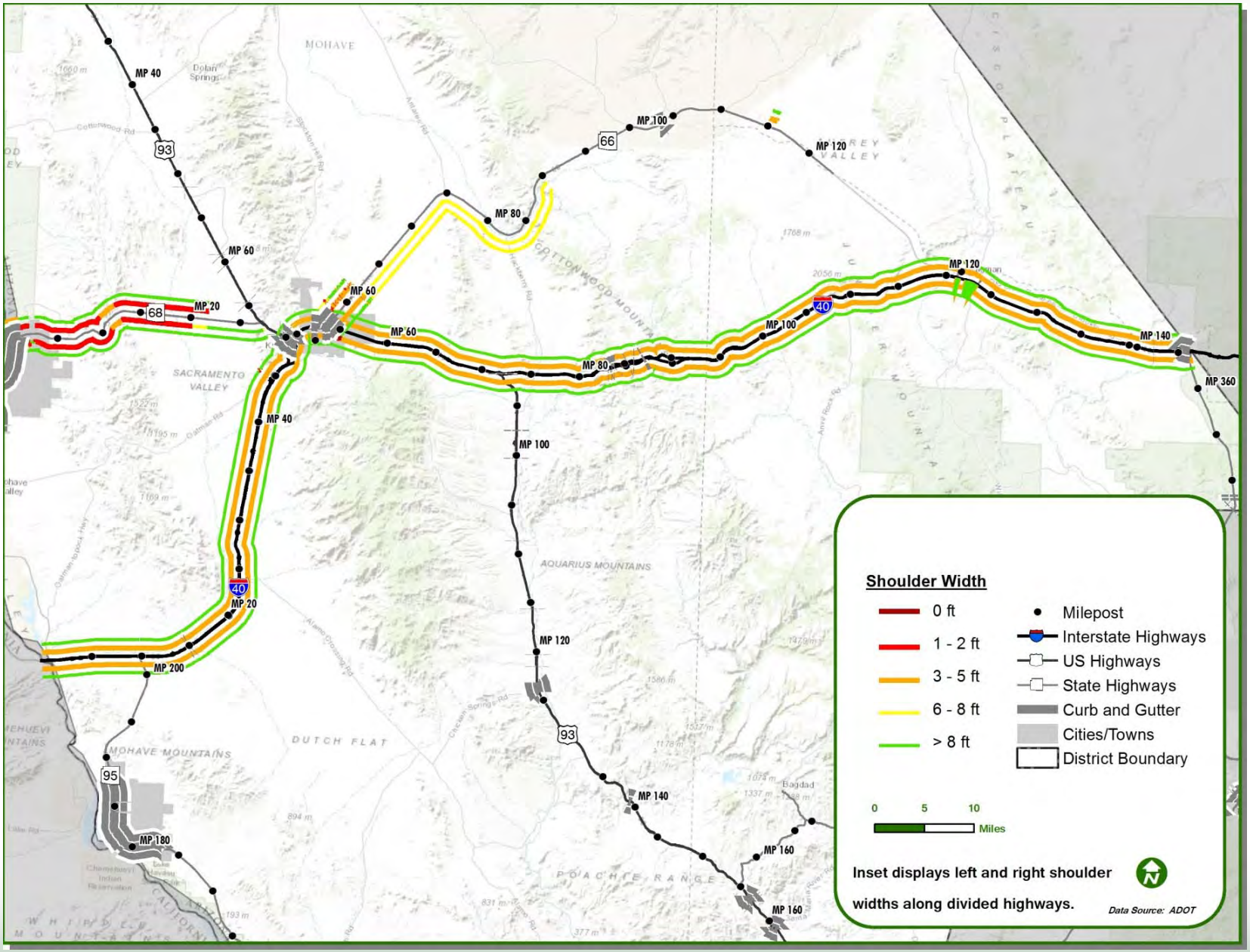


Figure 3.8: Existing Shoulder Conditions - Phoenix Maintenance District

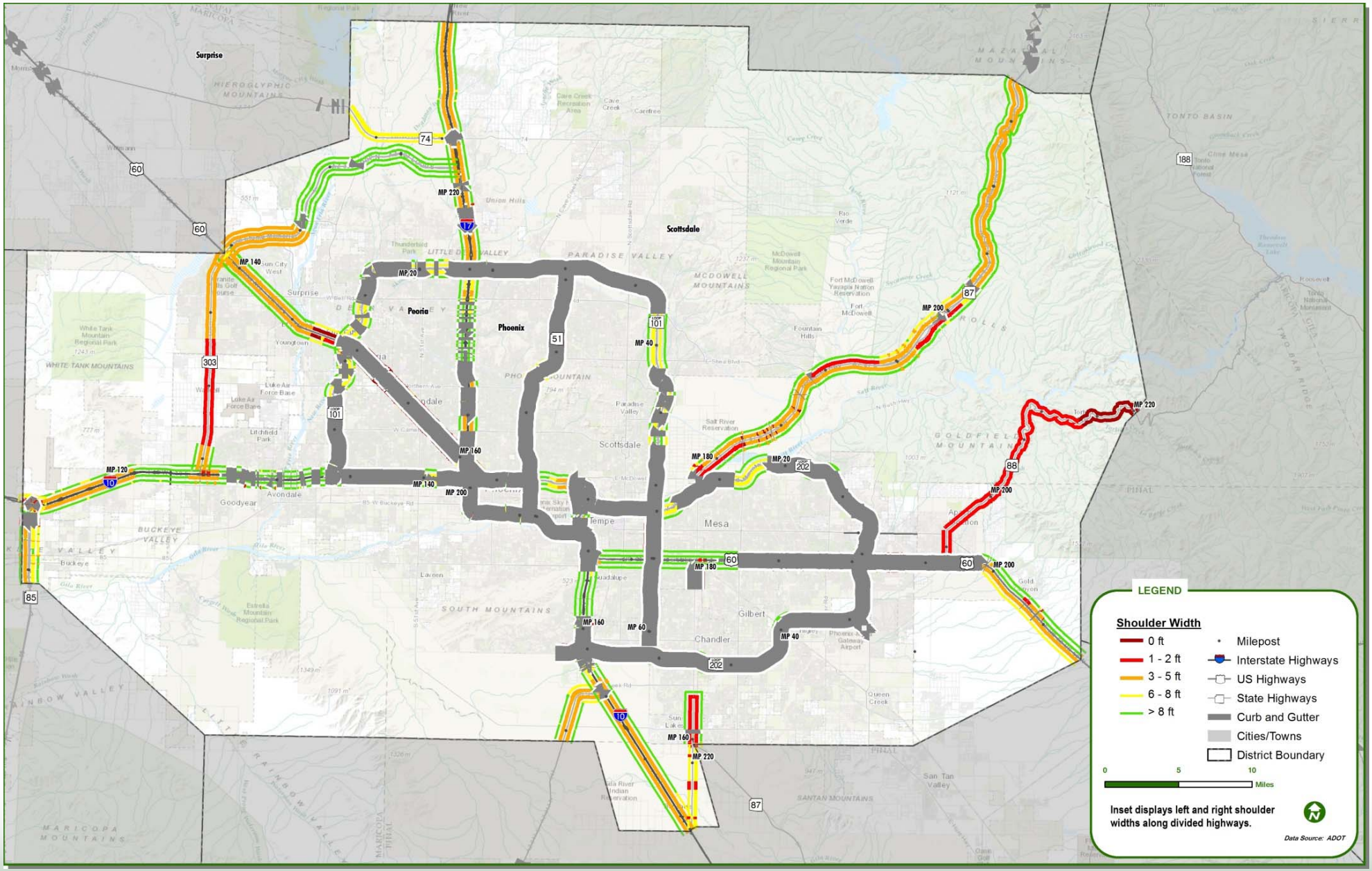
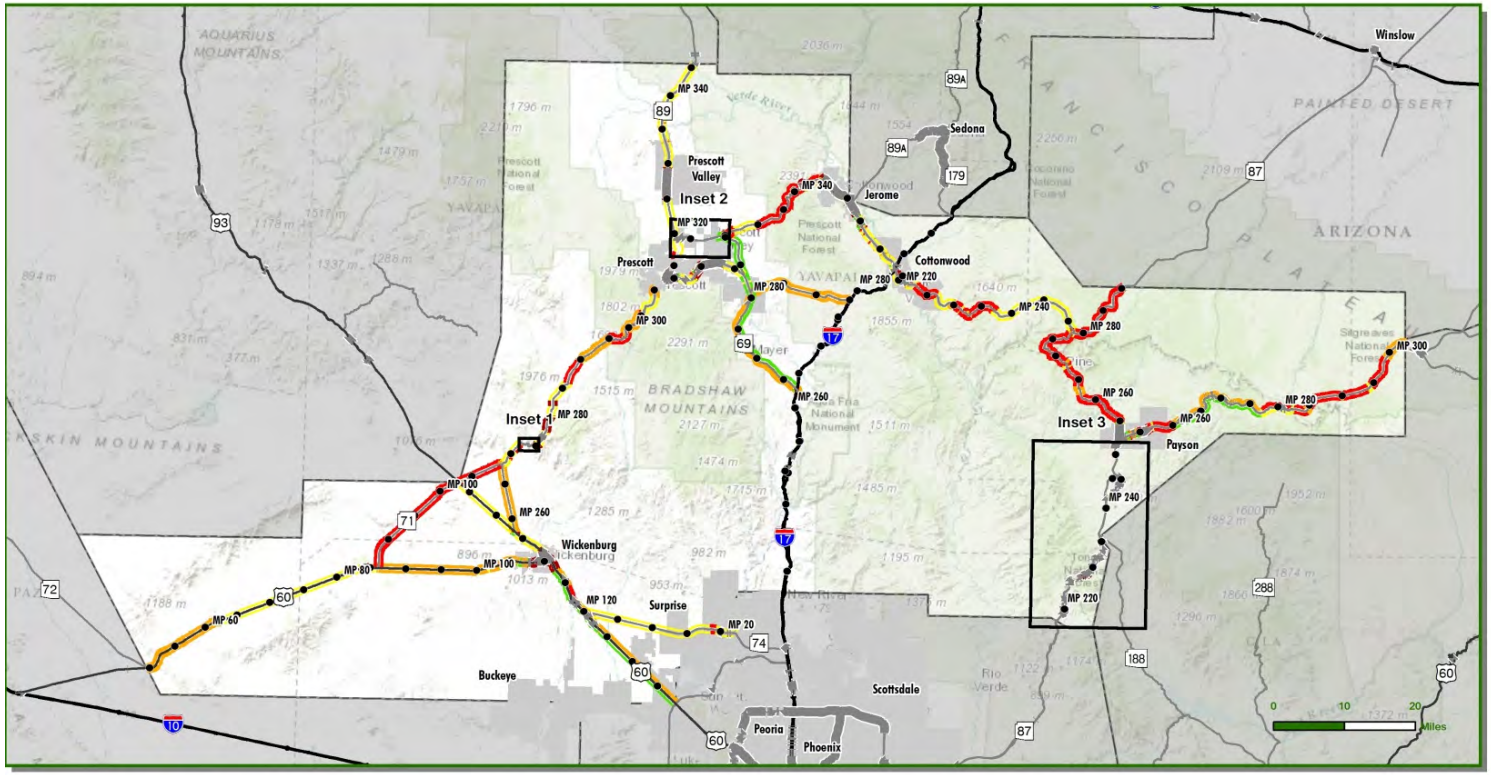
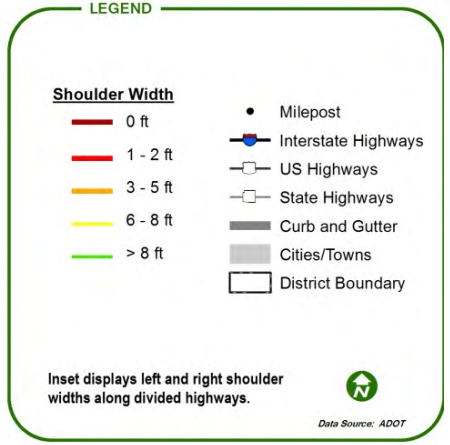
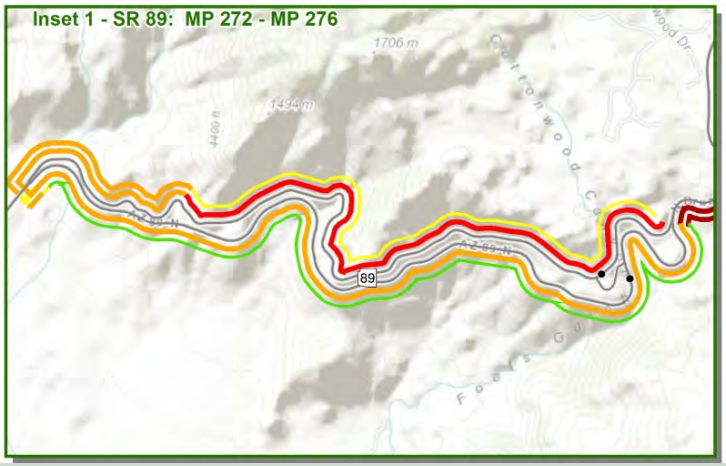
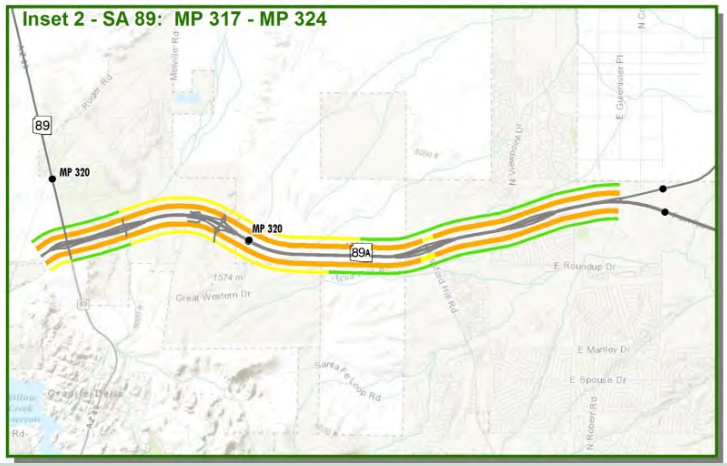


Figure 3.9: Existing Shoulder Conditions - Prescott District









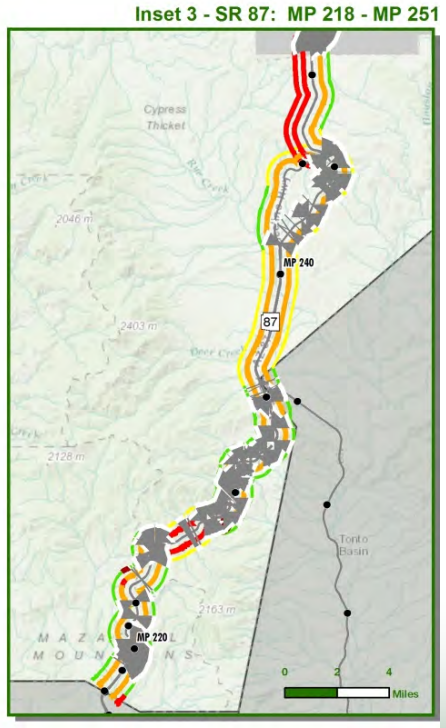
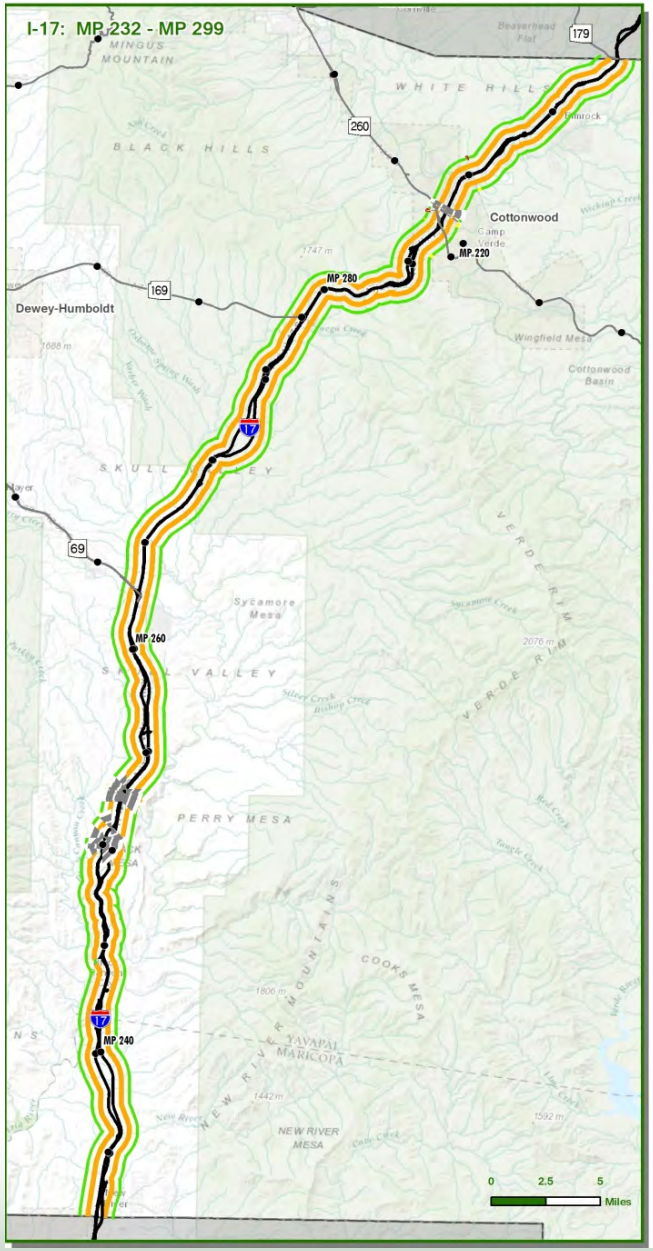
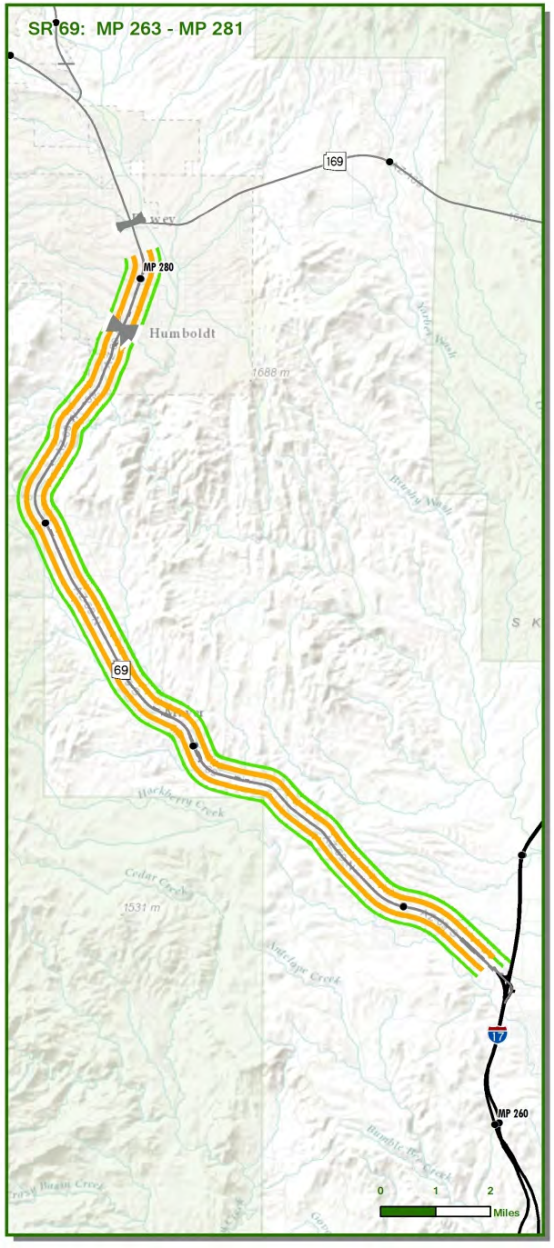
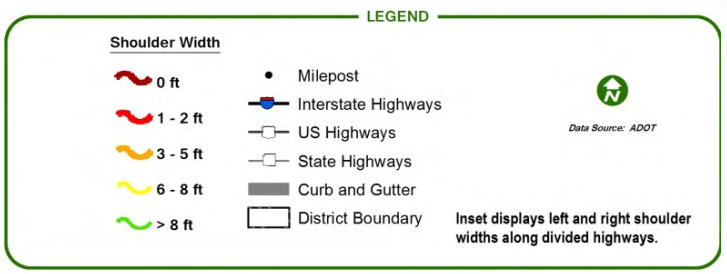
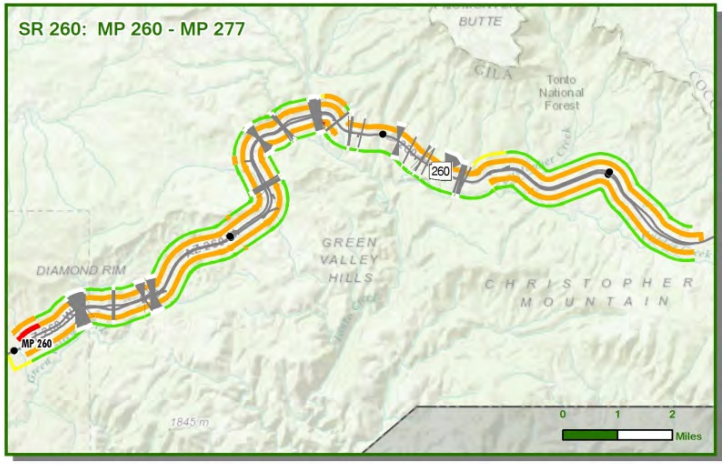


Figure 3.10: Existing Shoulder Conditions - Prescott District (Divided Highways)









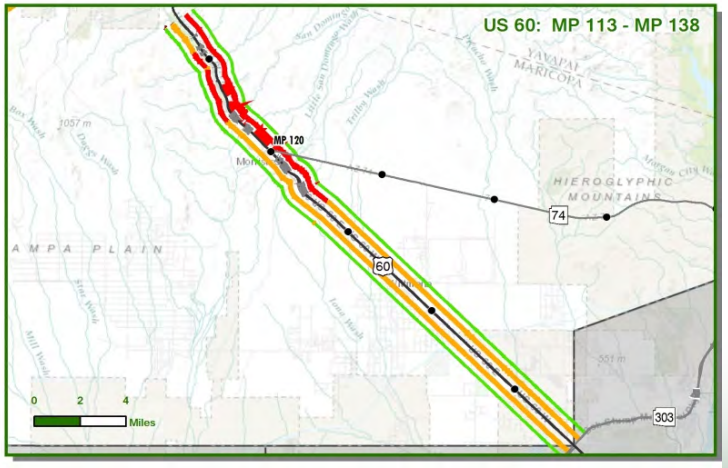
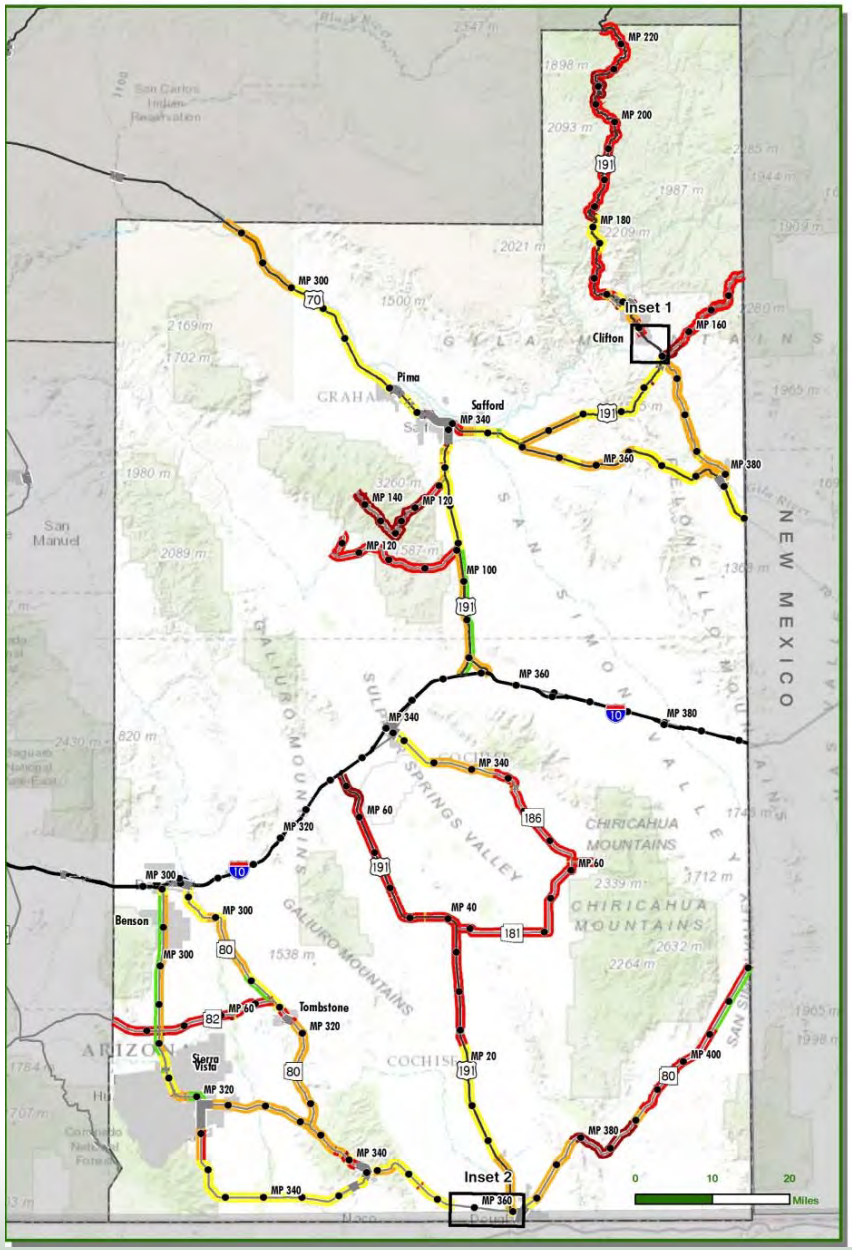


Figure 3.11: Existing Shoulder Conditions - Safford District



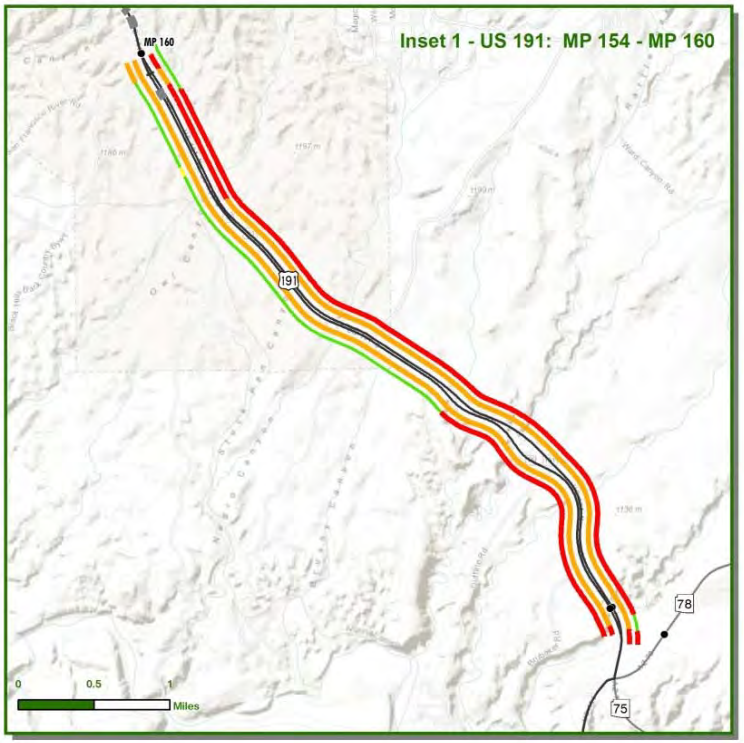


Figure 3.12: Existing Shoulder Conditions - Safford District (Divided Highways)

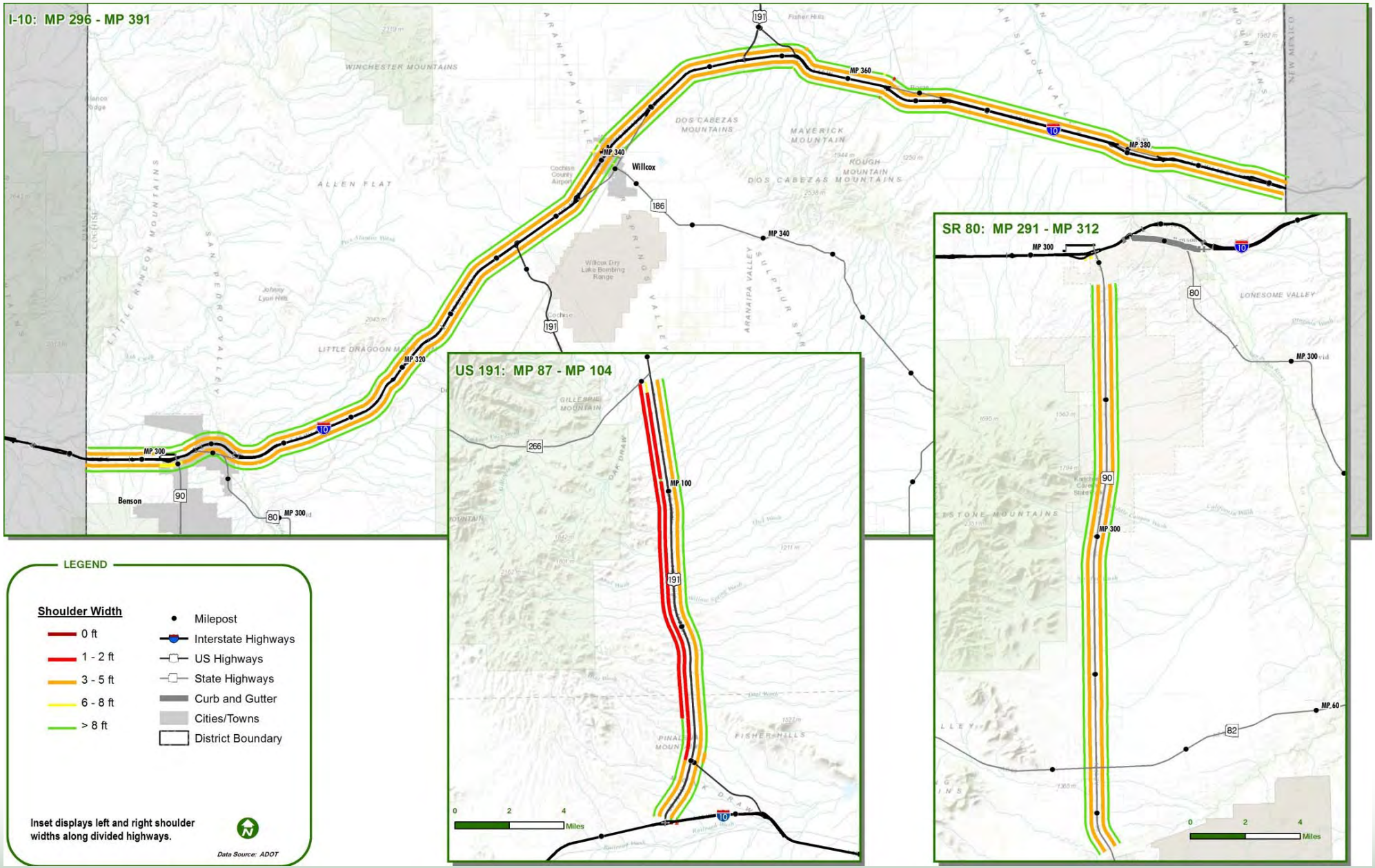


Figure 3.13: Existing Shoulder Conditions - Tucson District

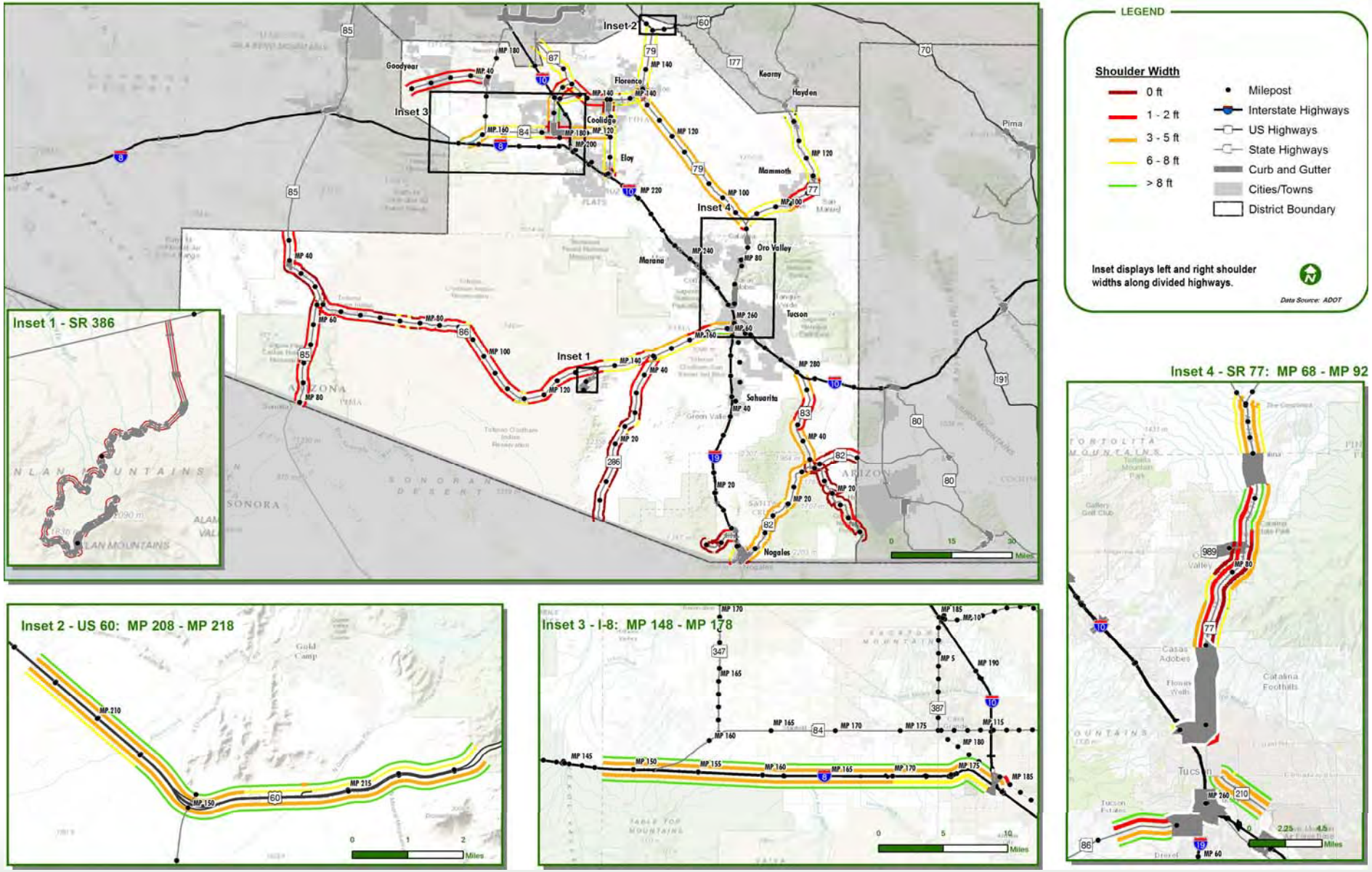


Figure 3.14: Existing Shoulder Conditions - Tucson District (Divided Highways)

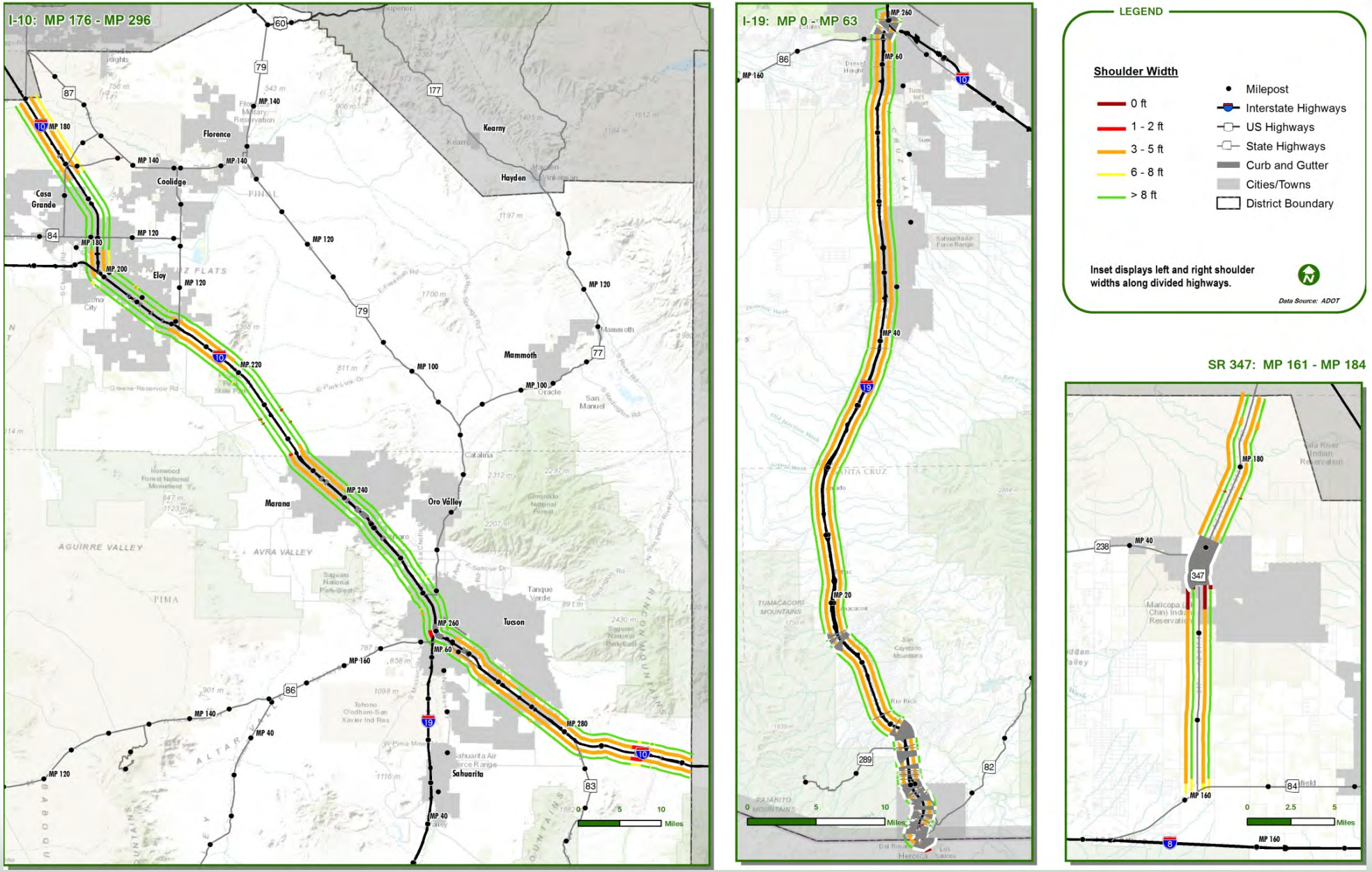


Figure 3.15: Existing Shoulder Conditions - Yuma District

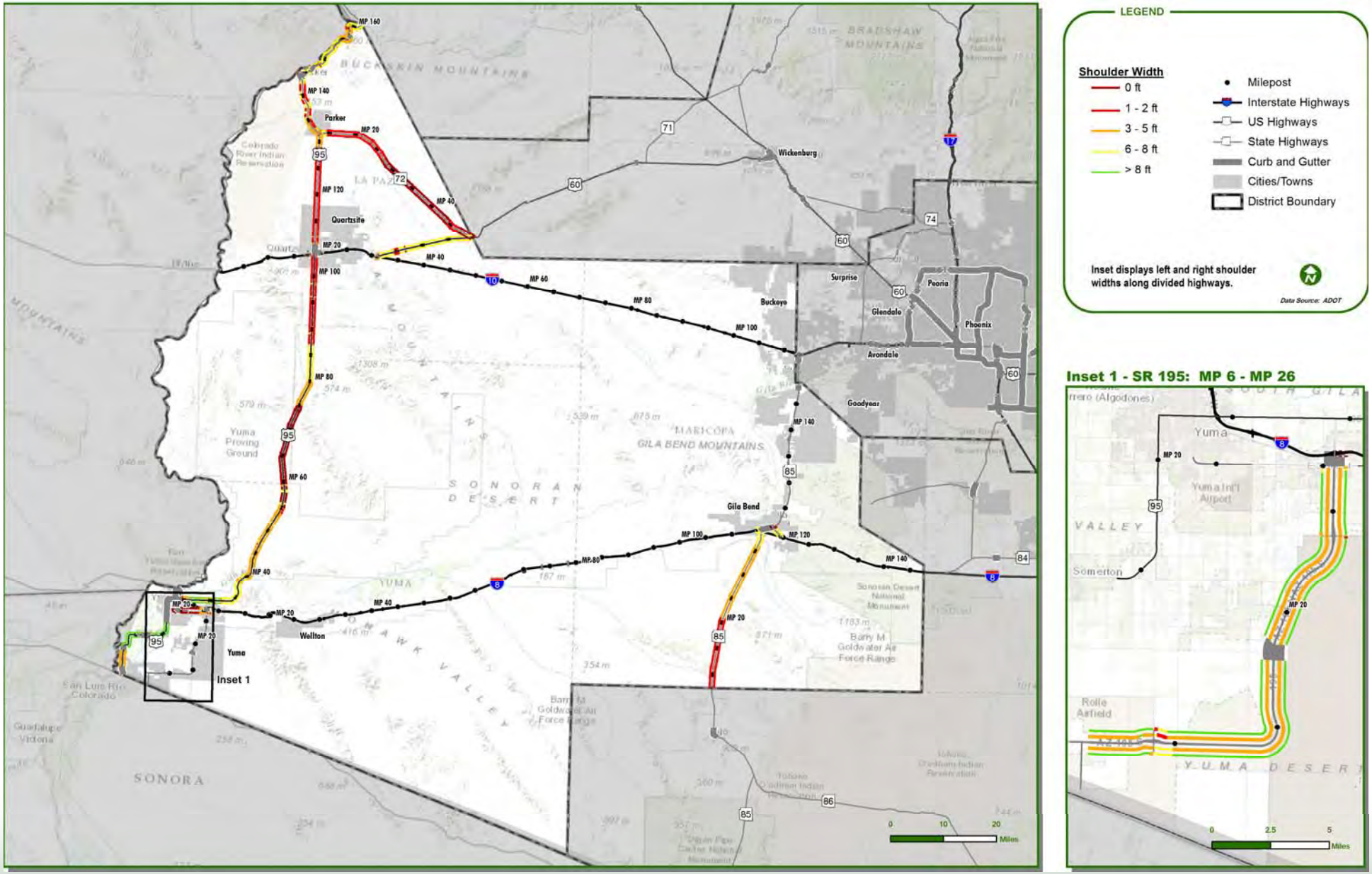
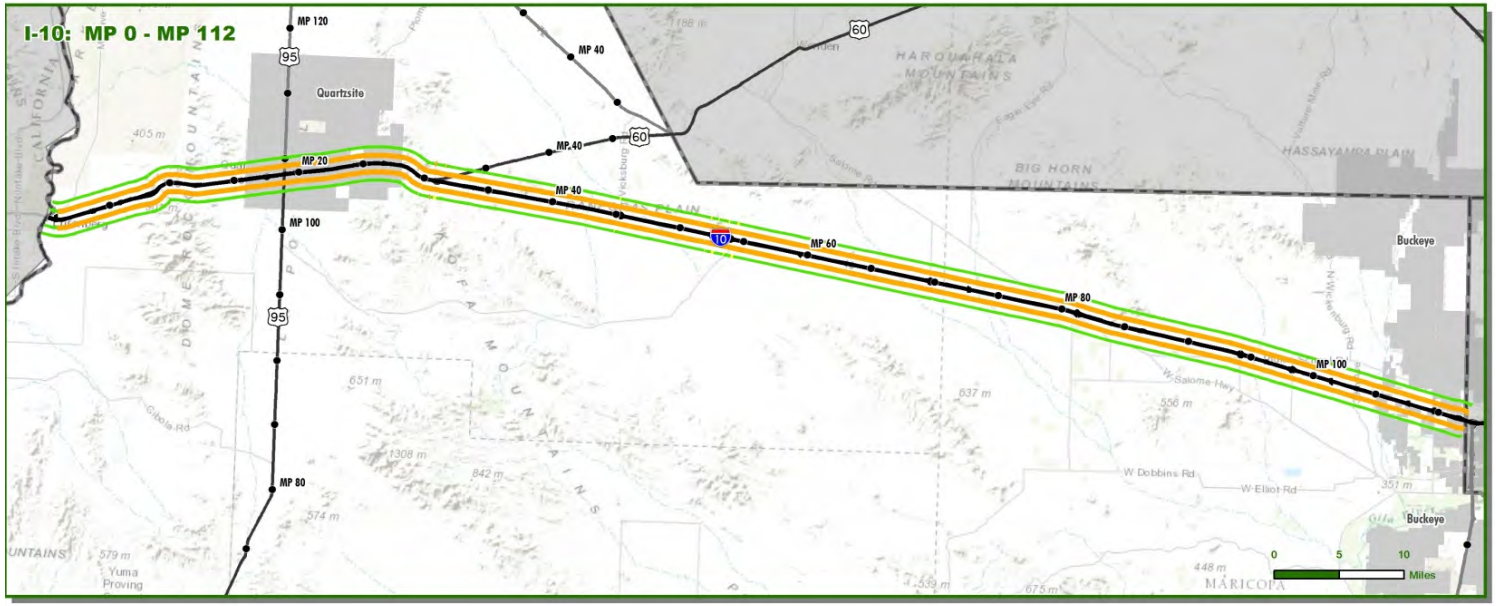
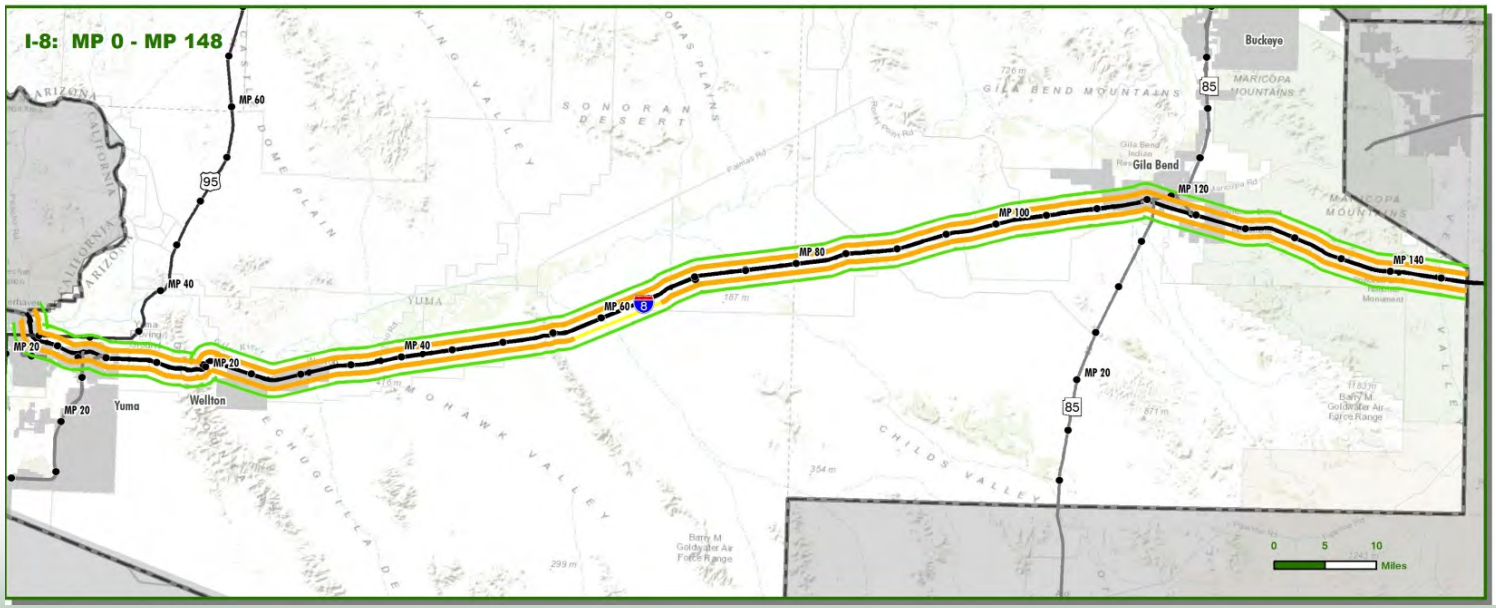
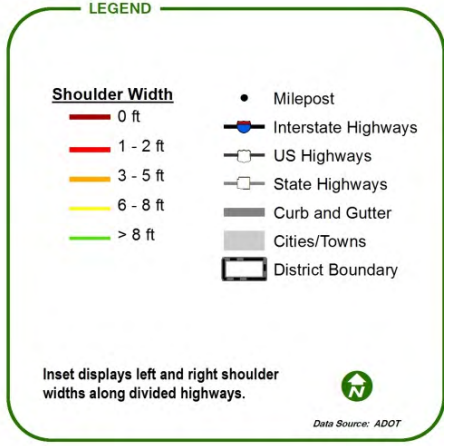
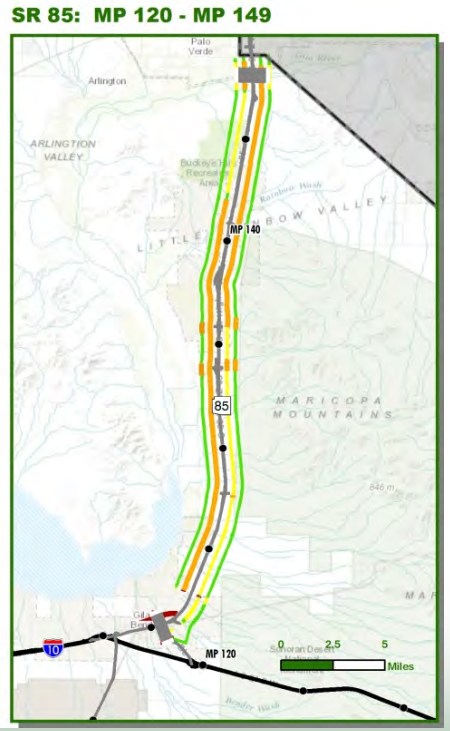


Figure 3.16: Existing Shoulder Conditions - Yuma District (Divided Highways)







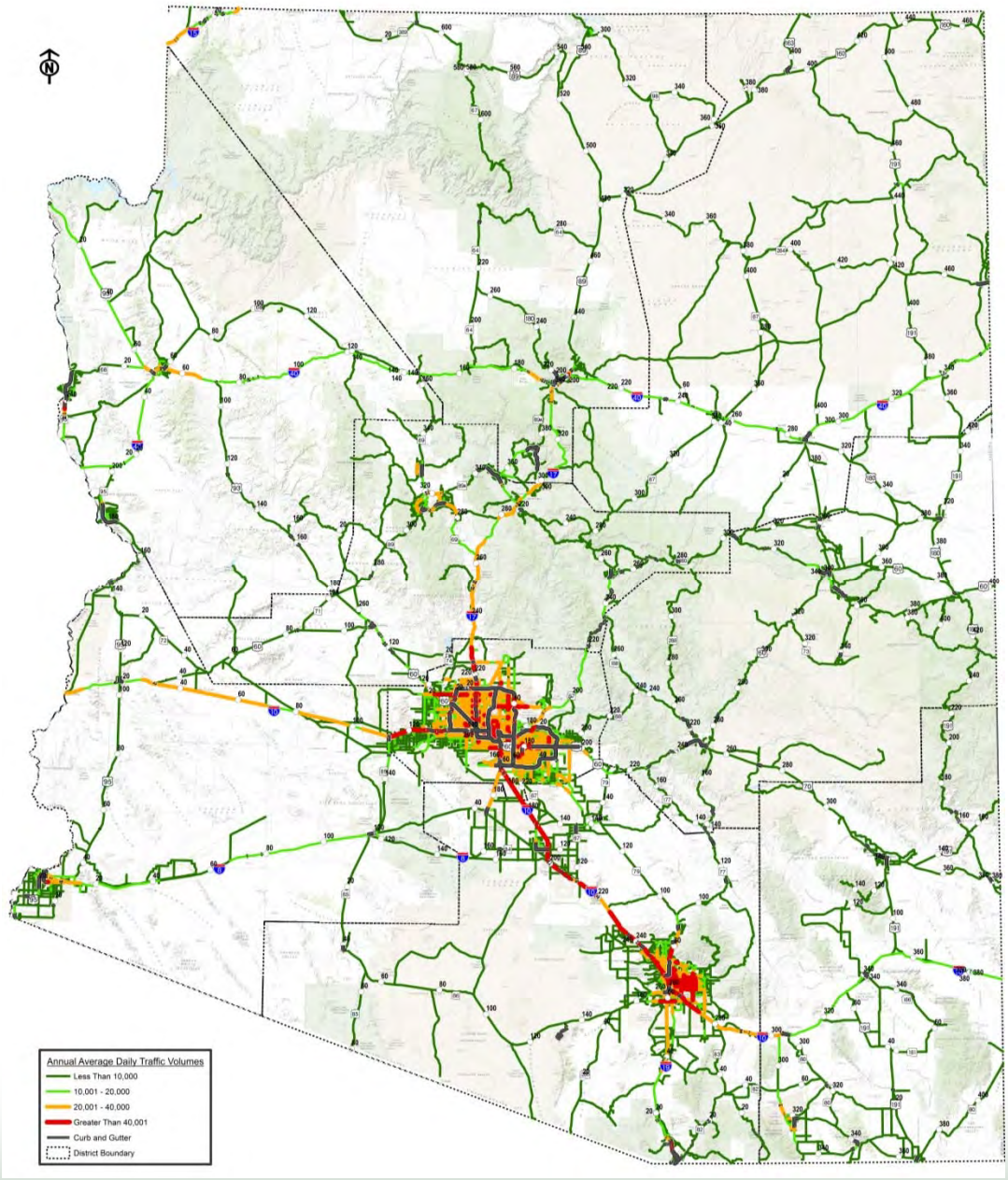


Existing Traffic Conditions

Existing traffic count data was obtained from ADOT to determine the existing traffic conditions on Arizona's State Highway System. Figure 3.17 illustrates the existing traffic conditions. Key traffic condition information illustrated in the figures includes:

- Highest traffic volumes are located within the Phoenix metropolitan area, along the I-10 corridor between Phoenix and Tucson, within the Tucson metropolitan area, and along interstates and highways entering urban areas.
- US 93, US 95, SR 89, SR 89A, SR 69, SR 87, US 60, and SR 90 have portions of the highway that have traffic volumes of over 10,000 AADT.

Figure 3.17: Existing Traffic Conditions

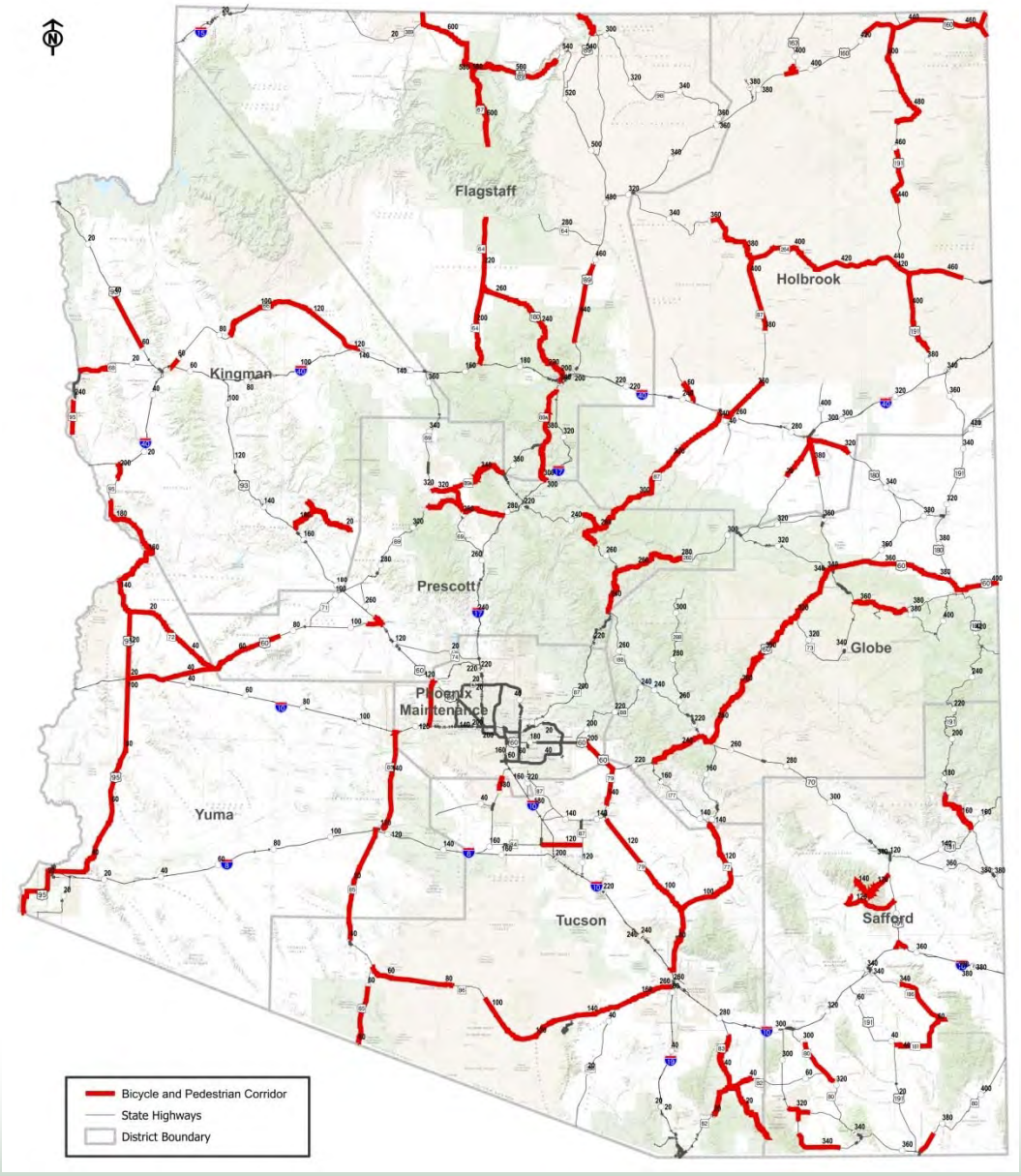


Pedestrian and Bicycle Routes

Sufficient shoulders are not only advantageous for motorists; shoulders provide bicyclist and pedestrians that utilize highways for recreational purposes or for general mobility, a safer alternative than riding within the travel lanes. In an effort to encourage bicycling and walking, the ADOT State Transportation Board initiated a policy of "promoting increased use of bicycling and walking, and accommodating bicycle and pedestrian needs in the planning, design, and construction of transportation facilities alongside state highways."

To assist in obtaining funding, shoulder conditions were analyzed against safety performance measures. Deficient road segments that are heavily utilized by pedestrians and/or bicyclists would receive a higher priority since the routes may not provide safe shoulder conditions. Figure 3.18 provides an illustration of the corridors that ADOT District Engineers deemed as high pedestrian/bicycle corridors.

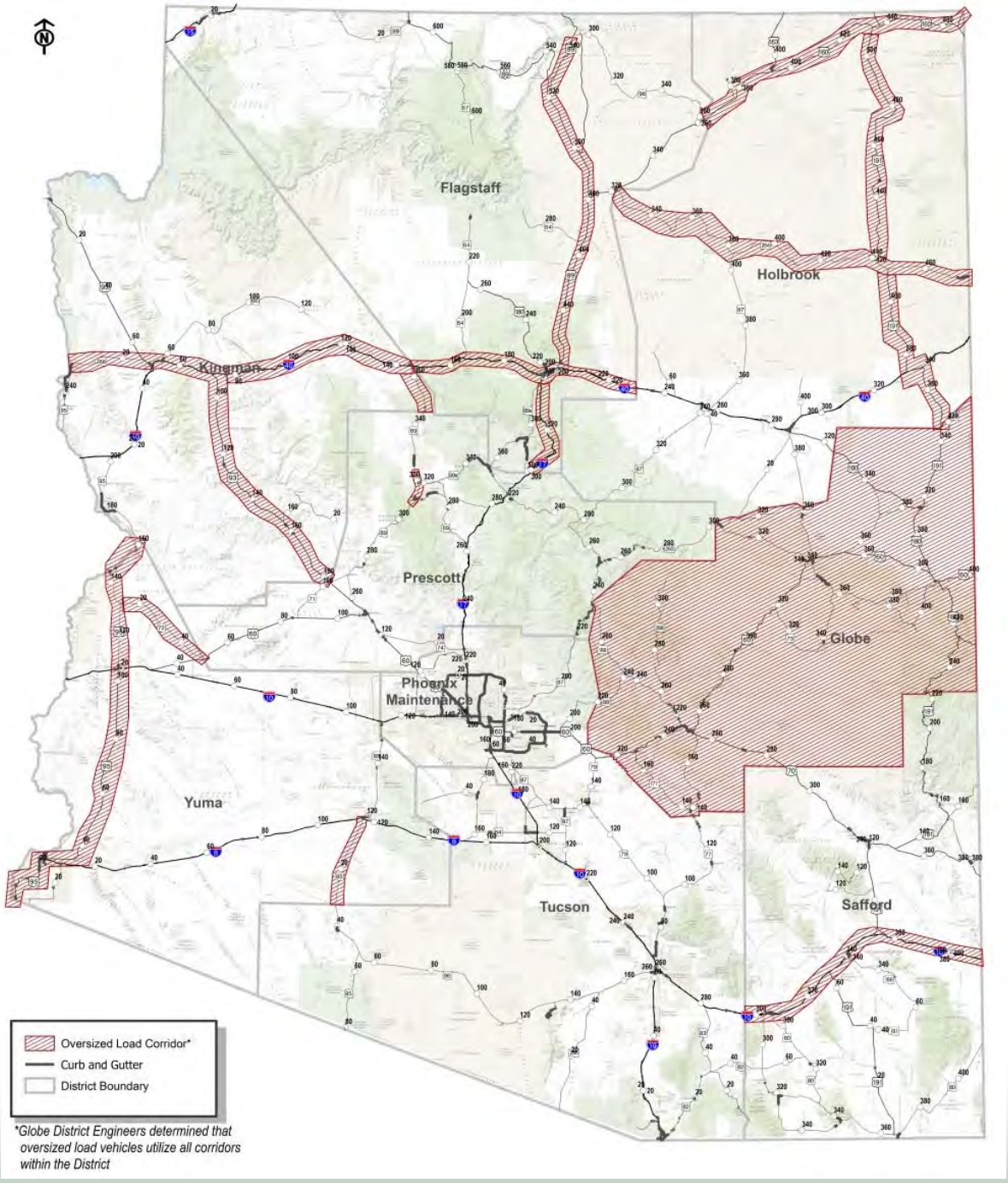
Figure 3.18: Pedestrian and Bicycle Corridors



Oversized Load Corridors

An oversized load is a vehicle that exceeds the standard legal size and/or weight limit for a roadway. Examples of oversize loads include construction machines, pre-built homes, shipping containers, etc. In Arizona, vehicles that exceed the legal dimensions are required to obtain a special permit to travel on state routes and may require an escort. Oversized loads often have a width greater than the standard travel lane width; therefore, on-coming traffic must utilize shoulders to allow the oversized loads to safely pass. In order to identify roadway segments that need to be improved to accommodate oversized vehicles, ADOT District Engineers were asked to identify oversized load corridors (See Figure 3.19).

Figure 3.19: Oversized Load Corridors



Crash Analysis

Crash analysis was conducted to identify trends, high crash rate corridors, and safety hazard locations that need to be addressed to improve safety. Data was obtained from ADOT's Accident Location Identification Surveillance System (ALISS) database for all crashes occurring between November 2008 and November 2013. The total number of crashes, crash rate, injury crash rate, and number of *equivalent property damage only crashes* (EPDO: Equivalent Property Damage Only) were estimated for each highway.

Crash rates are calculated to determine relative safety compared to other roadways, segments, or intersections. The combination of crash frequency (crashes per year) and vehicle exposure (traffic volumes or miles traveled) results in a crash rate. Crash rates are expressed in terms of crashes per million vehicle miles traveled for roadway segments. Figure 3.20 and Figure 3.21 illustrate crash rates along the Arizona State Highway System for 2-lane and multilane roadways, respectively.

Equivalent Property Damage Only

EPDO represents the relative number of Property Damage Only (PDO) or non-injury crashes. It takes into account the number of crashes and the severity of the crashes. Each crash is converted to an equivalent PDO using a multiplier for each crash type. Table 3.3 lists the multipliers used to derive the EPDO value. Figure 3.22 and Figure 3.23 illustrate the EPDO per lane along the Arizona State Highway System for 2-lane and multilane roadways, respectively.

Table 3.3: EPDO Conversion Factors

Crash Type	Equivalent PDO Crashes (multiplier)
Non-injury or Property Damage Only (PDO)	1
Possible Injury	2
Minor Injury	4
Severe Injury	7
Fatal	12

Figure 3.20: Crash Severity (Crash Rate) – Two-Lane Highways

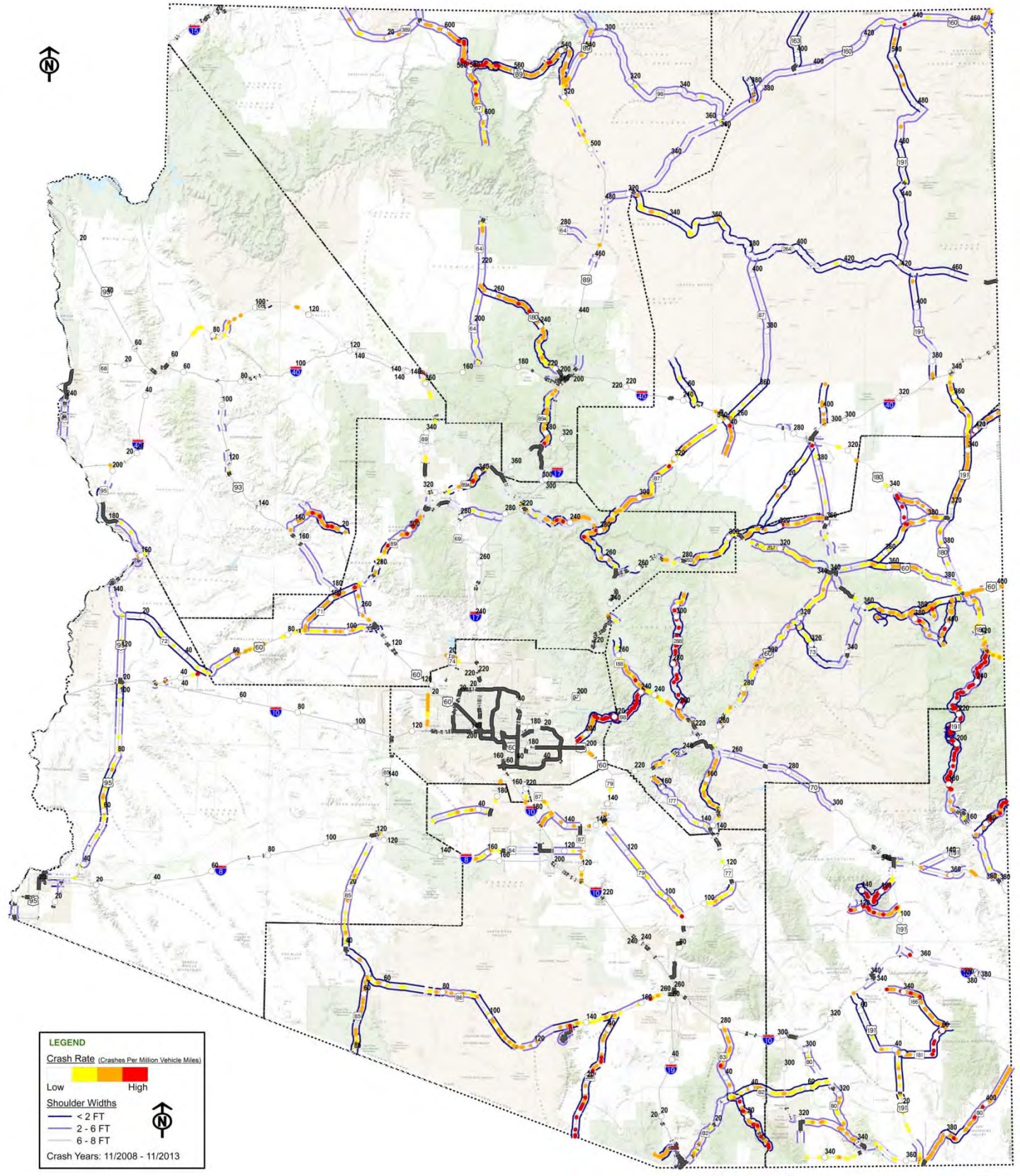


Figure 3.21: Crash Severity (Crash Rate) – Multilane Highways

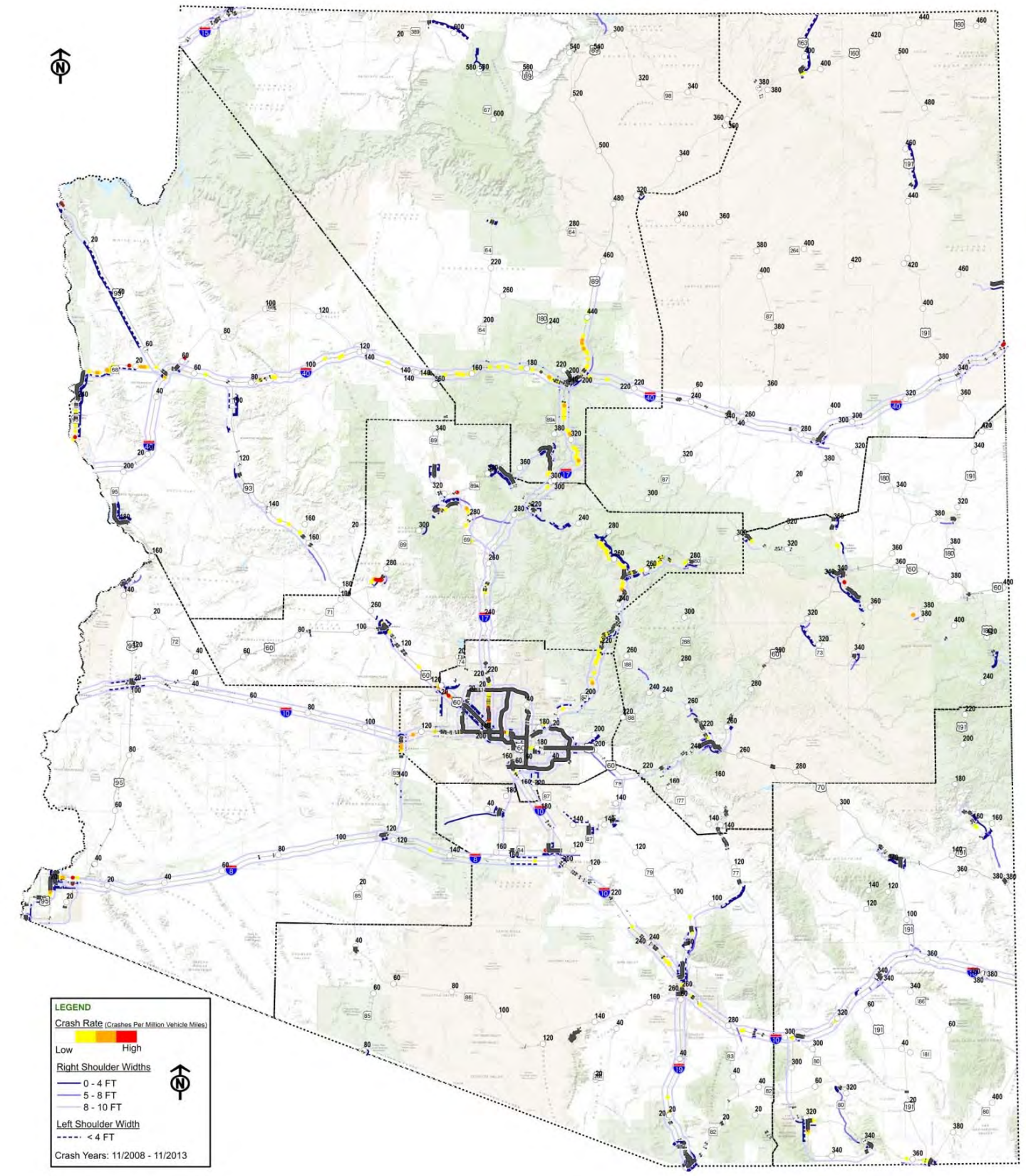


Figure 3.22: Crash Severity (EPDO) – Two-Lane Highways

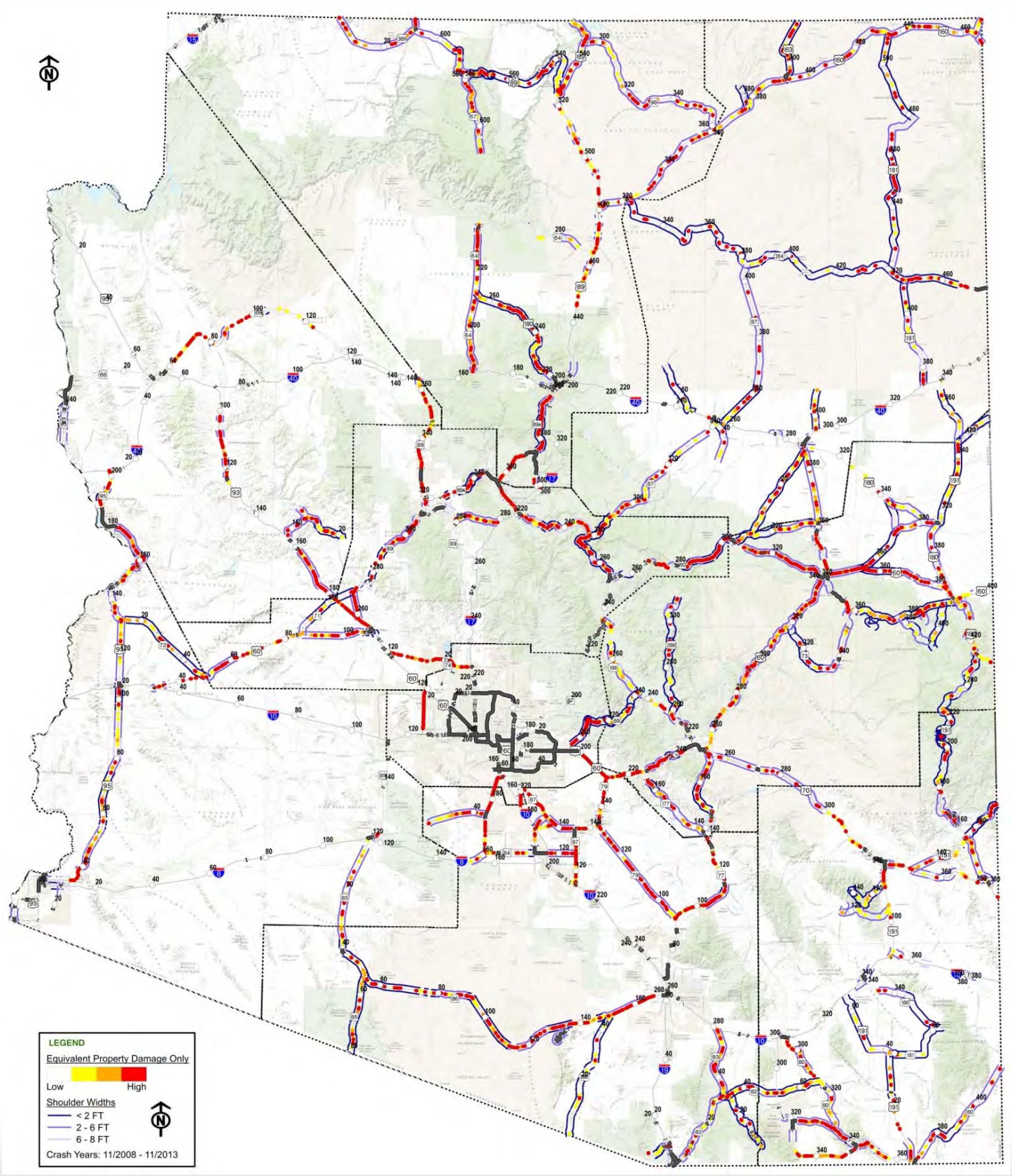
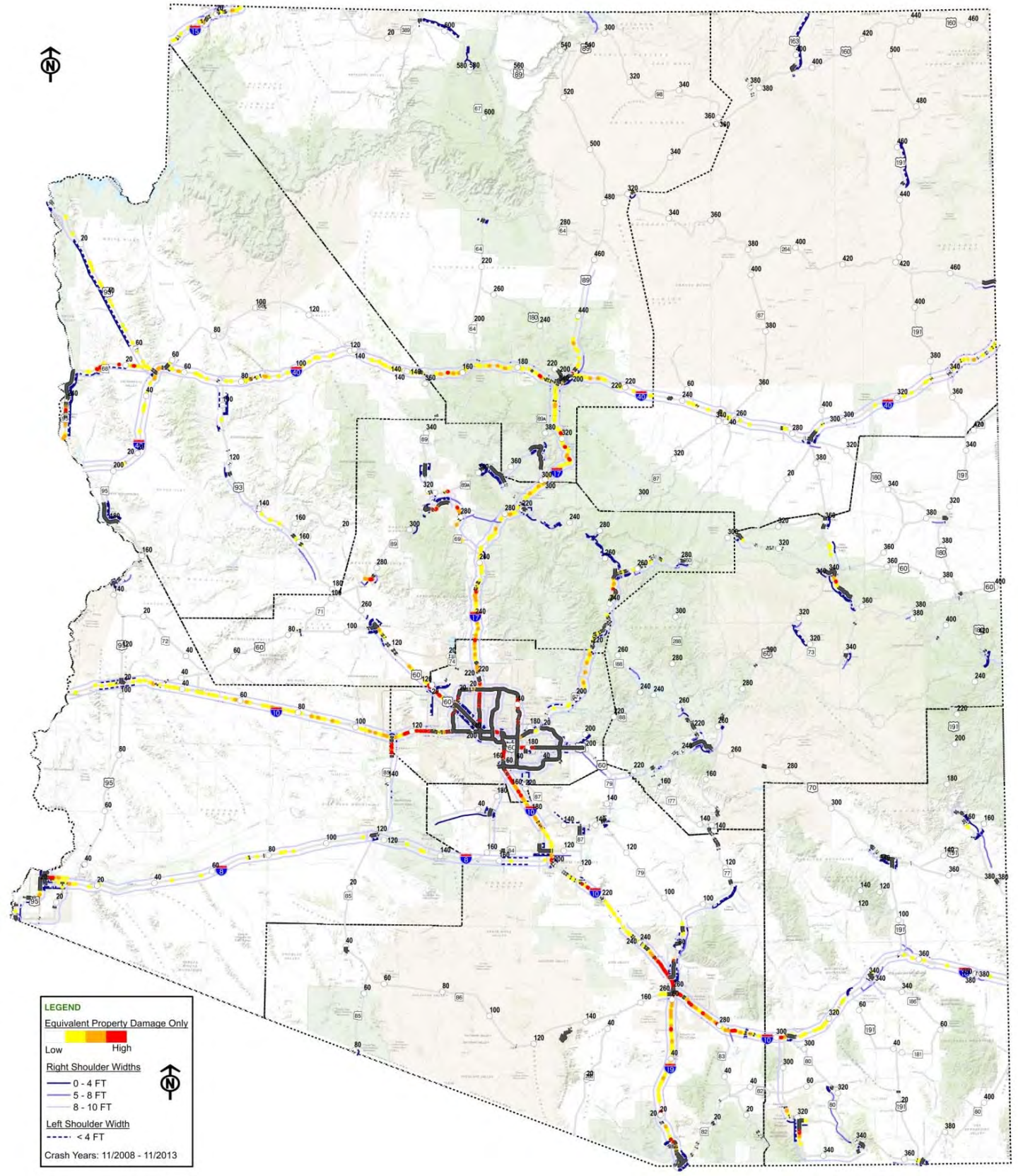


Figure 3.23: Crash Severity (EPDO) – Multilane Highways



Stakeholder Outreach - Phase I

Stakeholder Outreach - Phase I included individual meetings with each ADOT District staff. Meetings with the Districts were conducted April 22-April 30, 2014. The primary purpose of these meetings was to obtain feedback from each of the Districts about the following:

- Review and verify existing shoulder width conditions
- Review general and shoulder related crash data analysis results
- Identify any inconsistencies or errors in the background data
- Obtain Districts preference for preliminary project locations based on their understanding of local conditions
- Identify already planned and programmed improvements, if any
- Obtain consensus on evaluation criteria and preliminary prioritization methodology

Table 3.4 lists each District's suggested preliminary locations for shoulder improvements. The beginning and ending milepost ranges in the table represent the general problem area and not the exact location and length for shoulder improvements. A full summary of the feedback received from each District is included in *Working Paper 1: Existing Conditions*.

Table 3.4: ADOT District Engineer Recommended Shoulder Improvement Locations

Route	Direction	BMP	EMP	District	Priority*	Comments
SR 179	NB/SB	298.87	306.00	Flagstaff	4	SR 17: I-17 to Village of Oak Creek
SR 64	EB/WB	185.46	237.08	Flagstaff	5	Pockets from Williams to Tusayan
SR 89A	NB/SB	374.84	398.93	Flagstaff	2	Rim to Flagstaff (project in the works)
SR 98	EB/WB	297.46	361.56	Flagstaff	8	Sections of SR 98
US 160	EB/WB	311.46	361.56	Flagstaff	7	Sections of US 160
US 180	EB/WB	215.44	265.77	Flagstaff	3	Northwest of Flagstaff (project in the works)
US 89	SB	455.00	430.00	Flagstaff	1	Wauneta to Sunset Crater
US 89A	NB/SB	533.00	543.00	Flagstaff	6	Areas of US 89A near Marble Canyon
SR 188	EB/WB	269.00	264.00	Globe	Low priority	
SR 288	EB/WB	305.00	311.90	Globe	Low priority	
SR 61	NB/SB	352.88	381.86	Globe	Low priority	
US 60	EB/WB	242.00	227.00	Globe	N/A	
US 60	EB/WB	282.00	300.00	Globe	N/A	
US 60	EB/WB	346.00	353.00	Globe	N/A	
US 60	EB/WB	358.00	369.00	Globe	N/A	
SR 264	EB/WB	384.00	321.97	Holbrook	N/A	SR 264 west of SR87
SR 377	NB/SB	0.00	33.83	Holbrook	N/A	
US 191	NB/SB	448.00	510.34	Holbrook	N/A	US 191 north of Chinle
US 93	Both	144.00	151.00	Kingman	1	

**Priority rankings were provided by each District. Priorities listed as "N/A" were not given a priority by the District.*

Table 3.4: ADOT District Engineer Recommended Shoulder Improvement Locations (Continued)

Route	Direction	BMP	EMP	District	Priority*	Comments
SR 260	EB/WB	282.50	302.70	Prescott	N/A	H8245
SR 71	NB/SB	85.80	108.40	Prescott	N/A	
SR 71	NB/SB	108.80	109.60	Prescott	7	
SR 87	SB	246.20	250.90	Prescott	1	
SR 87	NB/SB	255.90	266.00	Prescott	2	
SR 87	NB/SB	268.20	270.50	Prescott	N/A	To be considered for climbing / passing lanes
SR 87	NB/SB	270.50	278.30	Prescott	6	
SR 87	NB/SB	278.70	290.10	Prescott	N/A	
SR 89	NB/SB	258.40	267.80	Prescott	3	
SR 89	NB/SB	278.20	282.70	Prescott	8	(280.4 - 281.9 exception)
SR 89	NB/SB	286.20	307.60	Prescott	N/A	
SR 89	NB/SB	307.60	309.50	Prescott	4	
SR 89A	NB/SB	324.80	326.10	Prescott	5	
SR 89A	NB/SB	329.80	331.20	Prescott	N/A	H8377
SR 89A	NB/SB	331.60	333.00	Prescott	10	
SR 89A	NB/SB	346.10	349.00	Prescott	9	
SR 72	EB/WB	13.11	49.91	Yuma	1	
SR 85	NB/SB	0.00	32.50	Yuma	3	SR 85 South
SR 95	NB/SB	132.00	143.93	Yuma	2	SR 72 Jct.-Parker
US 95	NB/SB	47.00	104.51	Yuma	4	Aberdeen Road-Quartzsite

**Priority rankings were provided by each District. Priorities listed as "N/A" were not given a priority by the District.*

4. Identification and Prioritization Methodology

Two-lane highways and multilane highways have different physical and traffic characteristics and their mobility and safety performance is evaluated using different parameters. For this reason, separate methodologies were developed to identify and prioritize:

- Shoulder improvements on two-lane highways
- Shoulder improvements on multilane highways

Methodology to Identify Shoulder Improvements on Two-Lane Highways

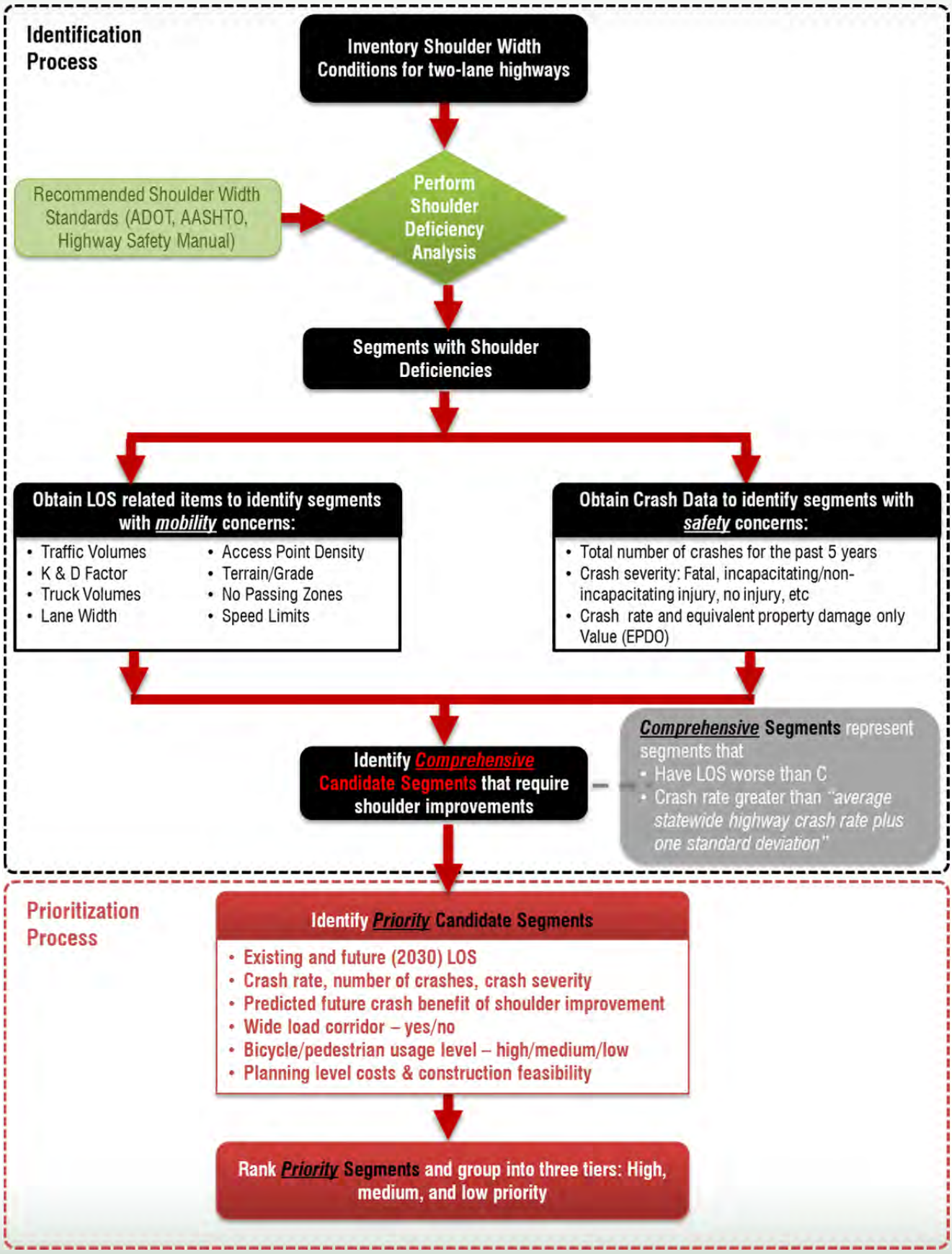
Figure 4.1 illustrates the steps utilized to identify and prioritize potential locations for shoulder improvements on two-lane highways. Once preliminary lists of potential candidates were identified, they were ranked on a statewide basis using the criteria and score ranges listed in Table 4.1.

Table 4.1: Prioritization Criteria for Shoulder Improvements on Two-Lane Highways

Criteria	Max Points	Points Distribution
Mobility – 25%	**25**	
Existing LOS: PTSF – Percent Time Spent Following	5	Z-score method*
Existing LOS: PFFS – Percent of Free Flow Speed	5	Z-score method*
Future LOS: PTSF – Percent Time Spent Following	5	Z-score method*
Future LOS: PFFS – Percent of Free Flow Speed	5	Z-score method*
Wide Load Corridor	5	5 points if segment was a wide load corridor; 0 points if NOT a wide load corridor
Safety – 50%	**50**	
Existing Crash Rate	15	Z-score method*
Existing Crash Severity (EPDO)	15	Z-score method*
Future Crash Severity (Potential Future Crash Benefit)	10	Z-score method*
Bicycle/Pedestrian Usage Level	10	10 points for segments with high bike/ped usage; 0 points if NOT a bike/ped corridor
Construction Feasibility - 25%	**25**	
Cost Per Lane Mile	10	Proportional distribution of points based on cost per lane mile
Potential Number of Bridges that Require Widening	15	0 bridges = 15 pts; 1 bridge = 12 pts; 2 bridges = 10 pts; 3 bridges = 8 pts; 4 bridges = 6 pts; 5 bridges = 4 pts; 6 bridges = 2 pts; Greater than 6 bridges = 0 pts

**Each record's z-score was determined based on its relative distance from the mean of all records. Based on the record's z-score, a proportional point value between 0 and Max Points was then assigned to each record.*

Figure 4.1: Identification Process for Shoulder Improvements on Two-Lane Highways



Methodology to Identify Shoulder Improvements on Multilane Highways

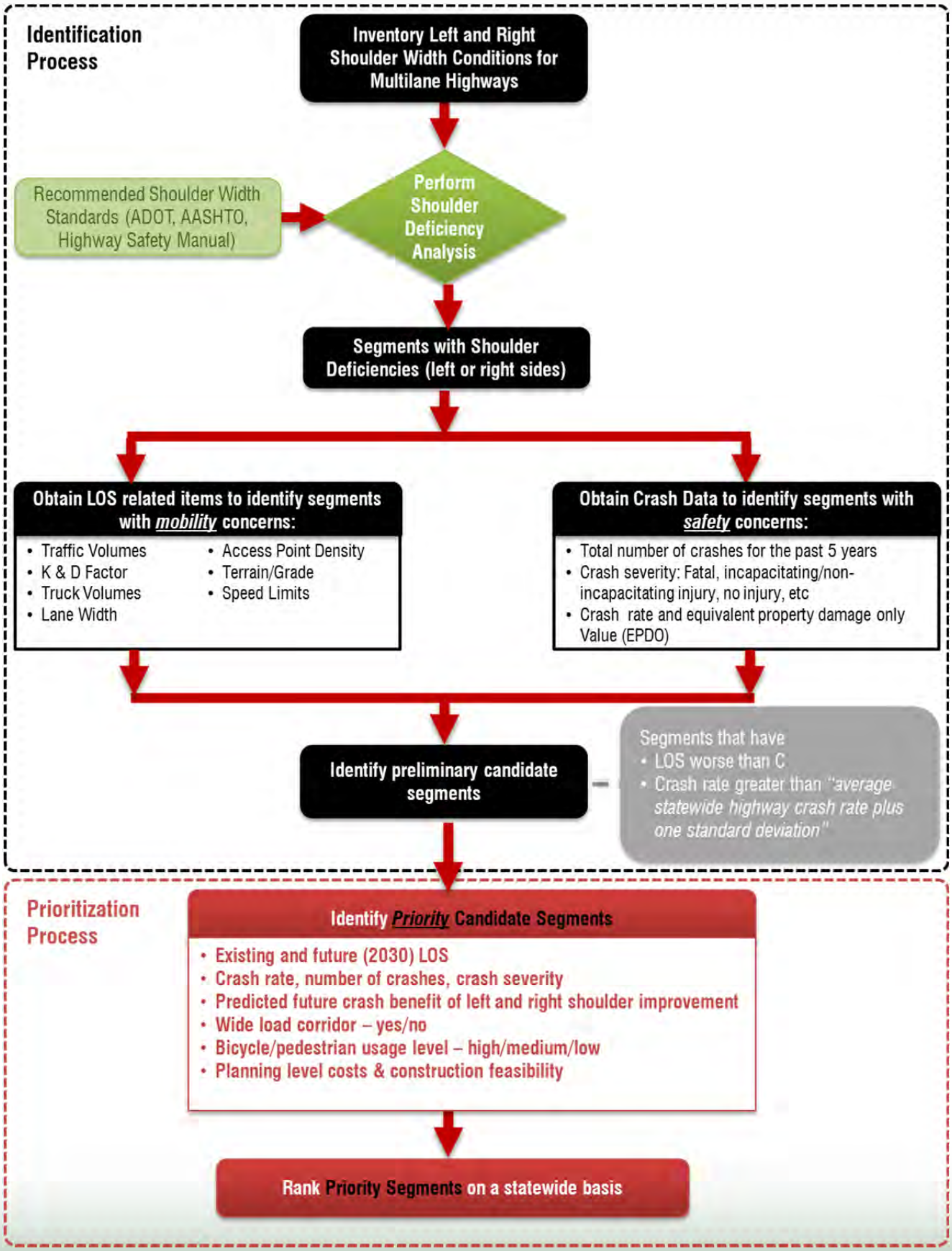
Figure 4.2 illustrates the steps utilized to identify and prioritize potential locations for shoulder improvements on multilane highways. Once preliminary lists of potential candidates were identified, they were ranked on a statewide basis using the criteria and score ranges listed in Table 4.2.

Table 4.2: Prioritization Criteria for Shoulder Improvements on Multilane Highways

Criteria	Max Points	Points Distribution
Mobility – 25%	**25**	
Existing LOS: Density	10	Z-score method*
Future LOS: Density	10	Z-score method*
Wide Load Corridor	5	5 points if segment was a wide load corridor; 0 points if NOT a wide load corridor
Safety – 50%	**50**	
Existing Crash Rate	15	Z-score method*
Existing Crash Severity (EPDO)	15	Z-score method*
Potential Future Crash Reduction Level – Right Shoulder	12	Z-score method*
Potential Future Crash Reduction Level – Left Shoulder	3	Z-score method*
Bicycle/Pedestrian Usage Level	5	10 points for segments with high bike/ped usage; 0 points if NOT a bike/ped corridor
Construction Feasibility 25%	**25**	
Cost Per Lane Mile	10	Proportional distribution of points based on cost per lane mile
Potential Number of Bridges that Require Widening	15	0 bridges = 15 pts; 1 bridge = 12 pts; 2 bridges = 10 pts; 3 bridges = 8 pts; 4 bridges = 6 pts; 5 bridges = 4 pts; 6 bridges = 2 pts; Greater than 6 bridges = 0 pts

***** *Each record's z-score was determined based on its relative distance from the mean of all records. Based on the record's z-score, a proportional point value between 0 and Max Points was then assigned to each record.*

Figure 4.2: Identification Process for Shoulder Improvements on Multilane Highways



Stakeholder Outreach – Phase II

The second phase of stakeholder outreach included individual meetings with each ADOT District staff. Meetings with the Districts were conducted October 8 – 15, 2014. The primary purpose of these meetings was to review:

- Design guidelines used to define deficiencies
- Listing of preliminary candidate locations
- District suggested locations
- Crash data analysis results
- Recommended ranking/prioritization criteria

The study team presented the design guidelines used to define shoulder deficiencies. 2014 ADOT Roadway Design Guidelines, the AASHTO Design Guidelines, and the Highway Safety Manual (HSM) criteria were evaluated. ADOT's Roadway Design Guidelines were used as the primary criteria to identify shoulder deficiencies.

HSM indicated that widening the shoulder from 6 – 8 ft may not yield a significant reduction in crashes; the study team recommended that roadway segments that had at least 6 ft of shoulder width be eliminated from consideration for two-lane highways. District staff concurred with the recommendation and asked the study team to confirm that shoulder related crashes were not a concern before eliminating those segments from consideration. District staff also concurred with the study team's suggestion to remove segments that have 8 – 10 ft shoulder on multilane highways unless crash analysis warrants the need for shoulder improvements.

A full summary of the feedback received from each District is included in *Working Paper 2: Evaluation Criteria and Plan for Improvements.*

5. Summary Results – Shoulder Improvements on Two-Lane Highways

For two-lane highways, a shoulder deficiency analysis was conducted to identify all highway segments that did not meet minimum shoulder width standards. These segments were then evaluated against the following criteria to identify ***comprehensive candidate locations*** for shoulder improvements.

- LOS C or worse
- Crash rate is greater than "average statewide highway crash rate plus one standard deviation"

A review of the ***comprehensive candidate locations*** revealed that several segments were too long and may not be feasible for implementation. To help the Districts further prioritize the segments, each larger segment was divided into smaller segments. These smaller segments were evaluated against the following additional set of criteria to generate a list of **priority candidate locations** that would be easier to implement.

- Existing and future (2030) LOS
- Crash rate, number of crashes, crash severity
- Predicted future crash benefit of shoulder improvement
- Wide load corridor – yes/no
- Bicycle/pedestrian usage level – high/medium/low
- Planning level costs & construction feasibility

Example:

Comprehensive **Candidate Location** Vs ***Priority*** **Candidate Location**

Example:

SR 64: MP 196 to MP 233 ----> ***Comprehensive*** Candidate Location

SR 64: MP 202 to MP 204
SR 64: MP 218 to MP 220
SR 64: MP 224 to MP 226
----> ***Priority*** Candidate Locations

The **priority candidate locations** were scored and ranked at both Statewide and District level and grouped into three tiers – high, medium, and low priority. The results for each District are summarized in the following sections:

- ***Comprehensive candidate locations*** that need shoulder improvements
- Priority segments for shoulder improvements.

Figures 5.1 to 5.9 illustrate the shoulder improvements locations in each District followed by project summary sheets for the Tier 1 locations.

Locations identified for shoulder improvements in Tables 5.1 – 5.18 represent only the general problem area and not the exact location and length of the shoulder improvements.

Planning Level Cost Estimates

Planning level cost estimates were developed based on typical per-mile/foot construction costs for widening and are expressed in 2015 dollars and have not been field verified. The following assumptions were used to derive the planning level cost estimates for the Tier 1 (priority) candidate segments:

- Widening shoulder to 8 FT: $900,000/mile for flat terrain
    - For each segment, the actual footage of additional shoulder width needed was estimated and the cost was then prorated. For example, if the candidate segment currently has a 2 FT shoulder, the prorated cost to widen the shoulder an additional 6 FT to meet the 8 FT standard was estimated.
    - Existing actual shoulder widths varied within each candidate segment; therefore, segments were divided into 0-2 FT, 3-5 FT, 5-8 FT, and 8 FT or greater shoulder widths. The midpoint of the candidate segments shoulder width range was utilized as the basis for calculating cost estimates. For example, an average shoulder width of 1 FT was utilized for candidate segments with a shoulder width range between 0-2 FT, 4 FT for segments with a 3-5 FT range, and so forth.
- Topographical constraints:
    - Segments with rolling terrain – an additional 10% was added to the base widening cost
    - Segments with mountainous terrain: an additional 20% was added to the base widening cost
- Bridge Widening: $200/SQFT
    - The number of bridges within each candidate segment was obtained from the National Bridge Inventory database. Each bridge's overall length, width, and deck width was also obtained.
    - For each bridge, the additional square footage needed to widen the bridge was determined.
    - The cost to widen each bridge was then estimated.
- Costs associated with acquiring right-of-way, widening culverts, and environmental mitigation are not included in estimates.
- Unless otherwise noted, recommended projects are not yet funded.

Due to topographical or other physical constraints adjustment factors may need to be applied to the cost estimates to account for increased construction costs. During project implementation the costs for each project may vary; therefore, during the design phase a detailed analysis should be performed to determine actual costs.

Flagstaff District

Table 5.1 presents the list of candidate locations for shoulder improvements on two-lane highways in the Flagstaff District. The candidate locations are ranked at the statewide and district level and grouped into three tiers – high, medium, and low priority. Table 5.2 summarizes the priority candidate improvement locations by tier. Figure 5.1 illustrates the prioritization of improvement projects within the District.

Table 5.1: Two-Lane Highways - Candidate Shoulder Improvement Locations in Flagstaff District

Route	Dir	BMP	EMP	Priority Segments: (Segments that exceed LOS and Crash Rate Threshold)*
Flagstaff District				
S 064	Both	185.6	187.2	MP185.6 - MP187.2
S 064	Both	187.9	194.0	MP187.9 - MP190
				MP190 - MP192
				MP192 - MP194
S 064	Both	196.0	233.6	MP196 - MP198
				MP198 - MP200
				MP200 - MP202
				MP202 - MP204
				MP204 - MP206
				MP210 - MP212
				MP212 - MP214
				MP214 - MP216
				MP216 - MP218
				MP218 - MP220
				MP220 - MP222
				MP222 - MP224
				MP224 - MP226
				MP226 - MP228
				MP228 - MP230
				MP230 - MP232
S 064	Westbound	234.3	235.3	MP234.3 - MP235.3
S 064	Both	236.0	237.0	MP267 - MP268
S 064	Both	281.7	289.5	MP284 - MP286
S 067	Both	579.0	610.0	
S 098	Both	294.0	361.0	MP298 - MP300
				MP300 - MP302
				MP302 - MP304
				MP308 - MP310
				MP318 - MP320
				MP328 - MP330

Table 5.1: Two-Lane Highways - Candidate Shoulder Improvement Locations in Flagstaff District (Continued)

Route	Dir	BMP	EMP	Priority Segments: (Segments that exceed LOS and Crash Rate Threshold)*
Flagstaff District				
				MP330 - MP332
				MP342 - MP344
				MP344 - MP346
				MP348 - MP350
				MP350 - MP352
				MP352 - MP354
				MP354 - MP356
S 179	Both	299.0	304.5	MP299 - MP302
				MP302 - MP304.5
S 389	Both	0.0	32.1	
SA089	Both	374.0	389.8	MP374 - MP376
				MP380 - MP382
				MP384 - MP386
				MP386 - MP389.8
SA089	Both	390.4	398.7	
U 089	Both	456.6	461.8	MP461.8 - MP460.7
U 089	Both	469.6	470.8	MP469.6 - MP470.8
U 089	Both	471.6	472.3	MP471.6 - MP472.3
U 089	Both	474.5	475.4	MP474.5 - MP475.4
U 089	Both	477.4	478.3	MP477.4 - MP478.3
U 089	Both	493.1	494.1	MP493.1 - MP494.1
U 089	Both	505.7	507.1	MP505.7 - MP507.1
U 089	Both	509.2	512.2	MP509.2 - MP512.2
U 089	Both	519.9	521.2	MP519.9 - MP521.2
U 089	Both	524.4	556.8	MP548 - MP550
				MP550 - MP552
				MP552 - MP554
				MP554 - MP556.8
U 160	Both	311.0	324.0	MP311 - MP314
				MP314 - MP316
				MP316 - MP318
				MP318 - MP320
U 160	Eastbound	324.0	332.0	

Table 5.1: Two-Lane Highways - Candidate Shoulder Improvement Locations in Flagstaff District (Continued)

Route	Dir	BMP	EMP	Priority Segments: (Segments that exceed LOS and Crash Rate Threshold)*
Flagstaff District				
U 160	Both	332.0	356.0	MP336 - MP338
				MP340 - MP342
				MP342 - MP344
				MP344 - MP346
				MP346 - MP348
				MP350 - MP352
				MP352 - MP354
				MP354 - MP356
U 160	Eastbound	356.0	358.0	MP356 - MP358
U 160	Both	358.0	362.0	MP358 - MP360
				MP360 - MP362
U 180	Both	218.0	237.4	MP218 - MP220 MP220 - MP223.2 MP223.2 - MP226
U 180	Both	239.4	244.2	
U 180	Both	245.4	264.0	
U 180	Eastbound	264.0	265.6	
UA089	Both	524.0	537.3	
UA089	Both	538.5	546.0	
UA089	Southbound	546.0	548.0	
UA089	Both	548.0	609.0	MP590 - MP592
UA089	Both	610.2	612.3	

Priority segments represent segments that
- Have LOS worse than C
- Crash rate greater than "average statewide highway crash rate plus one standard deviation"
District Rankings are Provided in the Following Table

Table 5.2: Two-Lane Highways - Ranking of Priority Candidate Locations in Flagstaff District

Route	Direction	BMP	EMP	Total Points	Tier Level	District Rank	Statewide Rank	Cost Estimate*
S 064	Both	185.6	187.2	79.33	1	1	6	$1,458,000
SA089	Both	374.0	376.0	76.02	1	2	23	$3,780,000
S 064	Both	187.9	190.0	75.49	1	3	28	$1,881,000
S 064	Both	236.0	237.0	72.80	1	4	45	$990,000
S 064	Both	224.0	226.0	71.35	1	5	55	$1,800,000
S 064	Both	230.0	232.0	71.01	1	6	57	$1,980,000
U 089	Both	474.5	475.4	70.65	1	7	60	$819,000
S 064	Westbound	234.3	235.3	70.57	1	8	61	$459,000
S 064	Both	226.0	228.0	70.57	1	9	62	$1,980,000
S 064	Both	218.0	220.0	70.39	1	10	63	$1,800,000
S 064	Both	222.0	224.0	70.24	1	11	65	$1,800,000
U 089	Both	461.8	460.7	70.12	1	12	67	$981,000
S 064	Both	228.0	230.0	69.96	1	13	68	$1,980,000
S 064	Both	190.0	192.0	69.75	1	14	72	$1,980,000
S 064	Both	216.0	218.0	69.65	1	15	75	$1,800,000
S 064	Both	220.0	222.0	69.58	1	16	77	$1,800,000
S 064	Both	198.0	200.0	69.49	1	17	82	$1,980,000
S 064	Both	212.0	214.0	69.24	1	19	89	$1,800,000
U 089	Both	469.6	470.8	69.21	1	20	90	$1,044,000
S 064	Both	200.0	202.0	69.12	1	21	94	$1,980,000
S 064	Both	196.0	198.0	69.10	1	22	96	$1,980,000
S 064	Both	202.0	204.0	68.95	1	23	101	$1,980,000
S 064	Both	192.0	194.0	68.95	1	24	102	$1,980,000
U 089	Both	471.6	472.3	68.79	1	25	106	$657,000
S 064	Both	210.0	212.0	68.20	2	26	117	
S 064	Both	204.0	206.0	67.68	2	27	121	
S 064	Both	214.0	216.0	67.57	2	28	124	
SA089	Both	380.0	382.0	67.30	2	29	126	
SA089	Both	384.0	386.0	67.24	2	30	127	
SA089	Both	386.0	389.8	65.85	2	31	138	
U 089	Both	548.0	550.0	65.82	2	32	139	
U 089	Both	477.4	478.3	65.81	2	33	140	

** Planning level cost estimates were developed for Tier 1 candidate locations only. Cost Estimates developed based on typical per-mile/foot construction costs for widening and are expressed in 2015 dollars and have not been field verified. Costs associated with acquiring right-of-way, widening culverts, and environmental mitigation are not included in estimates. Due to topographical or other physical constraints adjustment factors may need to be applied to the cost estimates to account for increased construction costs. During project implementation, the costs for each project may vary; therefore, during the design phase a detailed analysis should be performed to determine actual costs. Unless otherwise noted, the recommended projects are not yet funded.*

Table 5.2: Two-Lane Highways - Ranking of Priority Candidate Locations in Flagstaff District (Continued)

Route	Direction	BMP	EMP	Total Points	Tier Level	District Rank	Statewide Rank	Cost Estimate*
U 180	Both	218.0	220.0	65.73	2	34	143	
U 180	Both	220.0	223.2	65.37	2	35	149	
S 179	Both	302.0	304.5	64.48	2	36	164	
U 089	Both	550.0	552.0	64.21	2	37	172	
U 160	Both	318.0	320.0	64.16	2	38	177	
U 089	Both	554.0	556.8	63.79	2	39	184	
U 180	Both	223.2	226.0	63.79	2	40	185	
U 160	Both	316.0	318.0	63.78	2	41	186	
S 179	Both	299.0	302.0	63.63	2	42	189	
U 089	Both	552.0	554.0	63.60	2	43	191	
U 160	Both	311.0	314.0	61.32	2	44	224	
UA089	Both	590.0	592.0	59.92	2	45	241	
U 160	Both	340.0	342.0	59.55	2	46	249	
U 160	Both	336.0	338.0	59.24	2	47	252	
S 098	Both	300.0	302.0	59.04	2	48	255	
U 160	Both	314.0	316.0	58.89	2	49	256	
S 098	Both	298.0	300.0	58.81	2	50	258	
U 160	Both	360.0	362.0	56.72	2	51	283	
U 160	Both	342.0	344.0	55.44	3	52	298	
U 160	Both	358.0	360.0	55.37	3	53	300	
U 160	Eastbound	356.0	358.0	54.88	3	54	304	
U 089	Both	493.1	494.1	54.57	3	55	307	
U 160	Both	352.0	354.0	54.37	3	56	311	
U 160	Both	350.0	352.0	54.16	3	57	312	
U 089	Both	519.9	521.2	53.89	3	58	314	
S 098	Both	354.0	356.0	53.24	3	59	318	
U 160	Both	344.0	346.0	51.70	3	60	324	
U 160	Both	354.0	356.0	51.51	3	61	328	
U 160	Both	346.0	348.0	51.12	3	62	329	
S 098	Both	352.0	354.0	50.75	3	63	331	

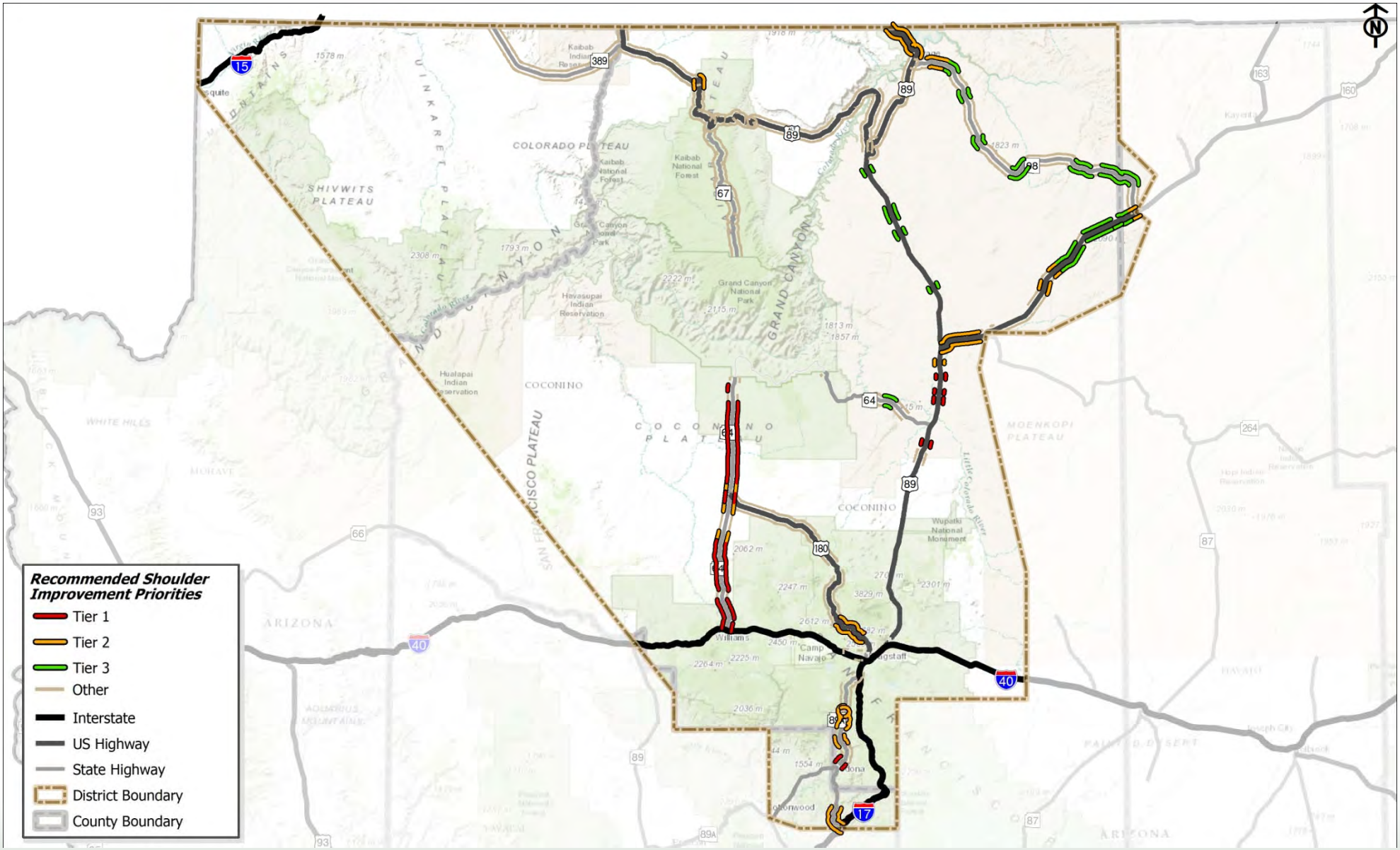
** Planning level cost estimates were developed for Tier 1 candidate locations only. Cost Estimates developed based on typical per-mile/foot construction costs for widening and are expressed in 2015 dollars and have not been field verified. Costs associated with acquiring right-of-way, widening culverts, and environmental mitigation are not included in estimates. Due to topographical or other physical constraints adjustment factors may need to be applied to the cost estimates to account for increased construction costs. During project implementation, the costs for each project may vary; therefore, during the design phase a detailed analysis should be performed to determine actual costs. Unless otherwise noted, the recommended projects are not yet funded.*

Table 5.2: Two-Lane Highways - Ranking of Priority Candidate Locations in Flagstaff District (Continued)

Route	Direction	BMP	EMP	Total Points	Tier Level	District Rank	Statewide Rank	Cost Estimate*
S 098	Both	350.0	352.0	50.57	3	64	333	
S 098	Both	328.0	330.0	49.23	3	65	341	
U 089	Both	505.7	507.1	49.03	3	66	345	
S 098	Both	318.0	320.0	48.80	3	67	348	
S 098	Both	308.0	310.0	48.61	3	68	349	
S 098	Both	348.0	350.0	48.59	3	69	350	
S 098	Both	302.0	304.0	48.58	3	70	351	
S 098	Both	342.0	344.0	48.45	3	71	356	
S 098	Both	344.0	346.0	48.35	3	72	358	
S 098	Both	330.0	332.0	48.29	3	73	360	
U 089	Both	509.2	512.2	46.43	3	74	370	
S 064	Both	284.0	286.0	43.40	3	75	374	

** Planning level cost estimates were developed for Tier 1 candidate locations only. Cost Estimates developed based on typical per-mile/foot construction costs for widening and are expressed in 2015 dollars and have not been field verified. Costs associated with acquiring right-of-way, widening culverts, and environmental mitigation are not included in estimates. Due to topographical or other physical constraints adjustment factors may need to be applied to the cost estimates to account for increased construction costs. During project implementation, the costs for each project may vary; therefore, during the design phase a detailed analysis should be performed to determine actual costs. Unless otherwise noted, the recommended projects are not yet funded.*

Figure 5.1: Two-Lane Highways - Priority Candidate Locations in Flagstaff District



Globe District

Table 5.3 presents the list of candidate locations for shoulder improvements on two-lane highways in the Globe District. The candidate locations are ranked at the statewide and district level and grouped into three tiers – high, medium, and low priority. Table 5.4 summarizes the priority candidate improvement locations by tier. Figure 5.2 illustrates the prioritization of improvement projects within the District.

Table 5.3: Two-Lane Highways - Candidate Shoulder Improvement Locations in Globe District

Route	Dir	BMP	EMP	Priority Segments: (Segments that exceed LOS and Crash Rate Threshold)*
Globe District				
S 061	Both	353.0	372.0	MP353 - MP356
				MP356 - MP358
				MP358 - MP360
				MP360 - MP362
				MP362 - MP364
				MP364 - MP366
				MP366 - MP368
S 061	Both	374.0	378.9	
S 061	Both	379.6	381.0	
S 061	Both	416.6	430.0	
S 073	Both	310.0	338.0	
S 073	Both	342.0	353.2	MP342 - MP344 MP348 - MP350 MP350 - MP352 MP352 - MP353.2
S 077	Both	138.6	145.2	
S 077	Both	147.3	170.0	
S 077	Both	343.3	343.4	MP343.3 - MP343.4
S 077	Both	353.7	356.5	
S 177	Both	136.5	164.7	MP136.5 - MP140
S 188	Both	218.8	219.6	
S 188	Both	222.9	224.6	
S 188	Westbound	225.7	227.0	
S 188	Both	227.0	232.5	
S 188	Both	236.5	236.6	
S 188	Both	240.8	241.0	
S 188	Both	242.0	257.0	
S 188	Both	260.6	266.6	
S 188	Both	272.9	276.3	

Table 5.3: Two-Lane Highways - Candidate Shoulder Improvement Locations in Globe District (Continued)

Route	Dir	BMP	EMP	Priority Segments: (Segments that exceed LOS and Crash Rate Threshold)*
Globe District				
S 260	Both	309.7	338.1	MP309.7 - MP312
				MP312 - MP314
				MP314 - MP316
				MP316 - MP318
				MP318 - MP320
				MP320 - MP322
				MP322 - MP324
				MP324 - MP326
				MP330 - MP332
				MP332 - MP334
				MP334 - MP336
				MP336 - MP338.1
S 260	Eastbound	355.0	358.0	MP355 - MP358
S 260	Both	360.5	398.0	MP360.51 - MP362
S 261	Both	394.0	412.0	
S 273	Both	377.0	397.0	
S 277	Both	306.0	335.6	MP306 - MP308
				MP324 - MP326
S 288	Both	258.0	311.0	
S 373	Both	385.0	390.0	
S 473	Both	0.0	9.0	
SA180	Both	343.0	354.0	
SS277	Both	321.0	322.0	
U 060	Both	227.1	230.2	MP227.1 - MP230.2
U 060	Both	232.7	234.4	MP232.7 - MP234.4
U 060	Both	236.2	241.7	MP236.2 - MP238
				MP238 - MP240
				MP240 - MP241.7
U 060	Both	260.3	262.7	MP260.3 - MP262.7
U 060	Both	275.8	278.9	MP275.8 - MP278.9
U 060	Both	284.0	323.2	MP284 - MP286
				MP286 - MP288
				MP288 - MP290
				MP290 - MP292
				MP292 - MP294
				MP296 - MP298
				MP298 - MP300

Table 5.3: Two-Lane Highways - Candidate Shoulder Improvement Locations in Globe District (Continued)

Route	Dir	BMP	EMP	Priority Segments: (Segments that exceed LOS and Crash Rate Threshold)*
Globe District				
U 060	Both	284.0	323.2	MP300 - MP302
				MP302 - MP304
				MP304 - MP306
				MP306 - MP308
				MP308 - MP310
				MP310 - MP312
				MP312 - MP314
				MP314 - MP316
				MP316 - MP318
				MP318 - MP320
U 060	Both	324.0	327.8	MP324 - MP326
U 060	Both	329.0	338.0	MP332 - MP334
				MP334 - MP336
				MP336 - MP338
U 060	Eastbound	338.0	339.6	
U 060	Both	342.5	371.3	MP342.5 - MP344
				MP344 - MP346
				MP346 - MP348
				MP348 - MP350
				MP350 - MP352.8
				MP352.8 - MP356
				MP358 - MP360
U 060	Both	372.2	383.3	
U 060	Eastbound	391.2	391.9	
U 060	Westbound	394.3	395.4	
U 060	Eastbound	397.9	399.0	
U 070	Both	253.3	254.1	
U 070	Both	255.3	271.0	
U 070	Both	272.7	288.0	MP272.7 - MP276
				MP276 - MP278
				MP278 - MP280
				MP280 - MP282
				MP282 - MP284
				MP286 - MP288
U 180	Both	342.8	358.5	
U 180	Both	364.1	367.6	

Table 5.3: Two-Lane Highways - Candidate Shoulder Improvement Locations in Globe District (Continued)

Route	Dir	BMP	EMP	Priority Segments: (Segments that exceed LOS and Crash Rate Threshold)*
Globe District				
U 180	Both	369.5	394.0	MP382 - MP384
				MP384 - MP386
				MP386 - MP388
U 180	Both	400.0	411.9	
U 180	Both	416.5	418.8	
U 180	Both	423.2	425.2	
U 191	Both	226.0	253.7	
U 191	Both	315.7	346.0	

Priority segments represent segments that
- Have LOS worse than C
- Crash rate greater than "average statewide highway crash rate plus one standard deviation"
District Rankings are Provided in the Following Table

Table 5.4: Two-Lane Highways - Ranking of Priority Candidate Locations in Globe District

Route	Direction	BMP	EMP	Total Points	Tier Level	District Rank	Statewide Rank	Cost Estimate*
U 060	Both	236.2	238.0	77.37	1	1	18	$3,527,992
U 060	Both	238.0	240.0	77.09	1	2	19	$3,433,622
U 060	Both	350.0	352.8	76.25	1	3	22	$2,772,000
U 060	Both	348.0	350.0	75.77	1	4	24	$2,030,394
U 060	Both	342.5	344.0	75.77	1	5	25	$1,535,394
U 060	Both	240.0	241.7	75.26	1	6	29	$554,050
U 060	Both	232.7	234.4	74.39	1	7	34	$2,024,966
U 060	Both	352.8	356.0	74.32	1	8	35	$5,544,000
U 060	Both	227.1	230.2	73.79	1	9	40	$3,515,874
U 060	Both	346.0	348.0	73.68	1	10	41	$2,159,922
U 060	Both	332.0	334.0	70.23	1	11	66	$1,980,000
U 060	Both	324.0	326.0	69.92	1	12	70	$1,980,000
U 060	Both	336.0	338.0	69.79	1	13	71	$1,980,000
S 077	Both	343.3	343.4	69.64	1	14	76	$225,225
U 060	Both	344.0	346.0	69.53	1	15	81	$1,980,000
U 060	Both	290.0	292.0	69.35	1	16	86	$540,000
S 260	Both	334.0	336.0	68.78	1	17	107	$1,980,000
U 060	Both	358.0	360.0	68.56	1	18	111	$3,522,480
U 060	Both	288.0	290.0	67.07	2	19	130	
U 060	Both	334.0	336.0	66.63	2	20	133	
U 060	Both	296.0	298.0	66.45	2	21	135	
U 060	Both	260.3	262.7	65.21	2	22	153	
S 260	Both	330.0	332.0	65.20	2	23	154	
U 060	Both	275.8	278.9	64.63	2	24	162	
U 060	Both	312.0	314.0	64.53	2	25	163	
U 060	Both	306.0	308.0	64.46	2	26	165	
U 060	Both	298.0	300.0	64.37	2	27	168	
S 260	Both	360.5	362.0	64.19	2	28	173	
U 060	Both	308.0	310.0	64.18	2	29	174	
U 060	Both	284.0	286.0	64.18	2	30	175	

** Planning level cost estimates were developed for Tier 1 candidate locations only. Cost Estimates developed based on typical per-mile/foot construction costs for widening and are expressed in 2015 dollars and have not been field verified. Costs associated with acquiring right-of-way, widening culverts, and environmental mitigation are not included in estimates. Due to topographical or other physical constraints adjustment factors may need to be applied to the cost estimates to account for increased construction costs. During project implementation, the costs for each project may vary; therefore, during the design phase a detailed analysis should be performed to determine actual costs. Unless otherwise noted, the recommended projects are not yet funded.*

Table 5.4: Two-Lane Highways - Ranking of Priority Candidate Locations in Globe District (Continued)

Route	Direction	BMP	EMP	Total Points	Tier Level	District Rank	Statewide Rank	Cost Estimate*
U 060	Both	316.0	318.0	64.02	2	31	180	
U 060	Both	302.0	304.0	63.67	2	32	187	
U 060	Both	318.0	320.0	63.38	2	33	199	
S 260	Both	336.0	338.1	63.07	2	34	202	
U 060	Both	286.0	288.0	61.55	2	35	222	
S 260	Both	318.0	320.0	61.32	2	36	223	
U 060	Both	310.0	312.0	60.80	2	37	230	
U 060	Both	292.0	294.0	60.56	2	38	232	
U 060	Both	304.0	306.0	60.38	2	39	235	
S 260	Both	332.0	334.0	60.18	2	40	238	
S 260	Both	322.0	324.0	59.80	2	41	244	
S 260	Both	324.0	326.0	59.44	2	42	250	
U 070	Both	278.0	280.0	59.07	2	43	253	
U 060	Both	314.0	316.0	58.85	2	44	257	
U 060	Both	300.0	302.0	58.81	2	45	259	
U 070	Both	280.0	282.0	58.06	2	46	266	
S 260	Both	316.0	318.0	57.90	2	47	268	
S 260	Both	314.0	316.0	57.83	2	48	269	
S 260	Eastbound	355.0	358.0	57.80	2	49	270	
S 260	Both	312.0	314.0	57.30	2	50	277	
S 260	Both	320.0	322.0	57.09	2	51	281	
S 277	Both	306.0	308.0	55.77	2	52	292	
U 070	Both	276.0	278.0	55.52	3	53	297	
S 260	Both	309.7	312.0	55.00	3	54	303	
S 073	Both	342.0	344.0	53.29	3	55	317	
U 070	Both	272.7	276.0	53.24	3	56	319	
S 073	Both	352.0	353.2	52.11	3	57	323	
U 070	Both	282.0	284.0	50.90	3	58	330	
S 061	Both	356.0	358.0	50.08	3	59	334	

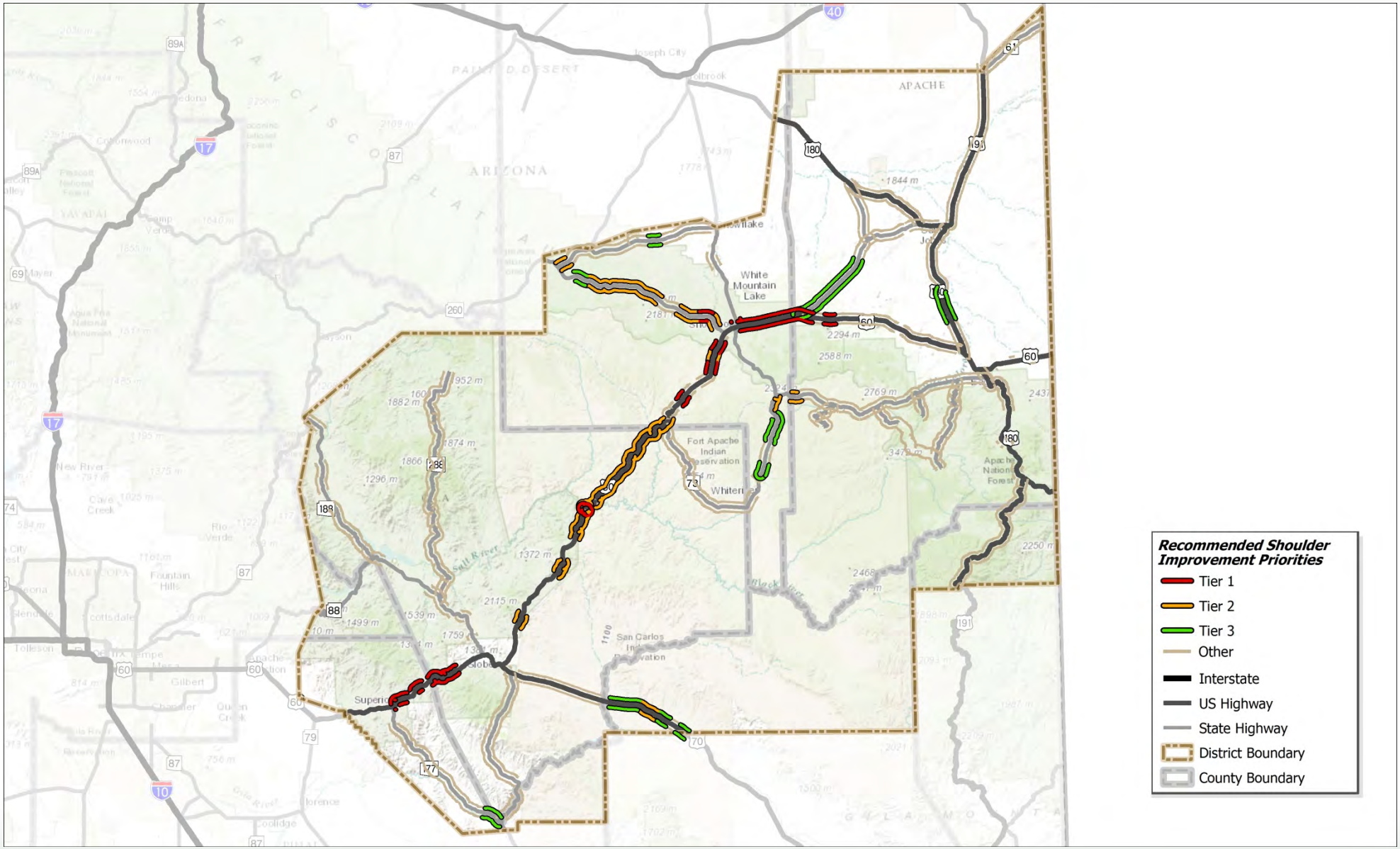
** Planning level cost estimates were developed for Tier 1 candidate locations only. Cost Estimates developed based on typical per-mile/foot construction costs for widening and are expressed in 2015 dollars and have not been field verified. Costs associated with acquiring right-of-way, widening culverts, and environmental mitigation are not included in estimates. Due to topographical or other physical constraints adjustment factors may need to be applied to the cost estimates to account for increased construction costs. During project implementation, the costs for each project may vary; therefore, during the design phase a detailed analysis should be performed to determine actual costs. Unless otherwise noted, the recommended projects are not yet funded.*

Table 5.4: Two-Lane Highways - Ranking of Priority Candidate Locations in Globe District (Continued)

Route	Direction	BMP	EMP	Total Points	Tier Level	District Rank	Statewide Rank	Cost Estimate*
S 061	Both	358.0	360.0	49.54	3	60	338	
S 073	Both	348.0	350.0	49.50	3	61	339	
S 061	Both	353.0	356.0	49.40	3	62	340	
U 070	Both	286.0	288.0	49.07	3	63	344	
S 073	Both	350.0	352.0	48.94	3	64	346	
S 061	Both	360.0	362.0	48.84	3	65	347	
U 180	Both	382.0	384.0	48.46	3	66	355	
S 061	Both	364.0	366.0	48.40	3	67	357	
S 061	Both	366.0	368.0	48.30	3	68	359	
S 061	Both	362.0	364.0	48.27	3	69	362	
U 180	Both	384.0	386.0	47.89	3	70	365	
S 277	Both	324.0	326.0	47.62	3	71	367	
S 177	Both	136.5	140.0	47.51	3	72	368	
U 180	Both	386.0	388.0	45.71	3	73	371	

** Planning level cost estimates were developed for Tier 1 candidate locations only. Cost Estimates developed based on typical per-mile/foot construction costs for widening and are expressed in 2015 dollars and have not been field verified. Costs associated with acquiring right-of-way, widening culverts, and environmental mitigation are not included in estimates. Due to topographical or other physical constraints adjustment factors may need to be applied to the cost estimates to account for increased construction costs. During project implementation, the costs for each project may vary; therefore, during the design phase a detailed analysis should be performed to determine actual costs. Unless otherwise noted, the recommended projects are not yet funded.*

Figure 5.2: Two-Lane Highways - Priority Candidate Locations in Globe District



Holbrook District

Table 5.5 presents the list of candidate locations for shoulder improvements on two-lane highways in the Holbrook District. The candidate locations are ranked at the statewide and district level and grouped into three tiers – high, medium, and low priority. Table 5.6 summarizes the priority candidate improvement locations by tier. Figure 5.3 illustrates the prioritization of improvement projects within the District.

Table 5.5: Two-Lane Highways - Candidate Shoulder Improvement Locations in Holbrook District

Route	Dir	BMP	EMP	Priority Segments: (Segments that exceed LOS and Crash Rate Threshold)*
Holbrook District				
S 077	Both	361.2	387.8	MP366 - MP368
				MP370 - MP372
				MP372 - MP374
				MP374 - MP376
				MP376 - MP378
				MP378 - MP380
				MP384 - MP386
				MP386 - MP387.8
S 077	Both	395.1	401.1	
S 077	Both	402.2	408.0	
S 087	Both	292.5	317.0	
S 087	Both	322.1	342.0	
S 087	Both	346.0	406.0	
S 099	Both	27.0	42.0	
S 099	Both	52.7	72.0	
S 264	Both	322.8	408.1	MP376 - MP378
				MP378 - MP380
				MP380 - MP382
				MP382 - MP384
				MP384 - MP386
				MP388 - MP390
S 264	Both	409.0	465.7	MP442 - MP444
				MP444 - MP446
				MP446 - MP448
				MP448 - MP450

Table 5.5: Two-Lane Highways - Candidate Shoulder Improvement Locations in Holbrook District (Continued)

Route	Dir	BMP	EMP	Priority Segments: (Segments that exceed LOS and Crash Rate Threshold)*
Holbrook District				
S 264	Both	409.0	465.7	MP450 - MP452
				MP452 - MP454
				MP454 - MP456
				MP456 - MP458
				MP458 - MP460
				MP460 - MP462
				MP462 - MP464
				MP464 - MP465.7
S 377	Both	0.0	33.0	
S 564	Both	374.0	383.0	
U 064	Both	465.0	469.5	
U 160	Both	362.0	394.0	MP364 - MP366
				MP366 - MP368
				MP368 - MP370
				MP370 - MP372
				MP372 - MP374
				MP374 - MP376
				MP376 - MP378
				MP378 - MP380
				MP380 - MP382
				MP382 - MP384
				MP384 - MP386
				MP386 - MP388
				MP388 - MP390
				MP390 - MP392
				MP392 - MP394
U 160	Both	396.0	436.0	MP398 - MP400
				MP400 - MP402
U 160	Eastbound	436.0	438.0	
U 160	Both	438.0	470.8	MP438 - MP440
				MP440 - MP442
				MP442 - MP444
				MP444 - MP446
				MP446 - MP448
				MP448 - MP450
				MP450 - MP452

Table 5.5: Two-Lane Highways - Candidate Shoulder Improvement Locations in Holbrook District (Continued)

Route	Dir	BMP	EMP	Priority Segments: (Segments that exceed LOS and Crash Rate Threshold)*
Holbrook District				
U 160	Both	438.0	470.8	MP452 - MP454
				MP454 - MP456
				MP456 - MP458
				MP458 - MP460
				MP460 - MP462
				MP462 - MP464
U 163	Both	396.4	416.0	MP396.37 - MP400
				MP404 - MP406
				MP406 - MP408
U 180	Both	307.0	311.1	
U 191	Both	346.0	364.9	
U 191	Both	374.0	411.6	
U 191	Southbound	417.1	419.2	
U 191	Both	420.0	446.5	MP430 - MP432
				MP444 - MP446.5
U 191	Both	447.5	510.0	MP447.5 - MP450
				MP454 - MP456
				MP460 - MP462

Priority segments represent segments that
- Have LOS worse than C
- Crash rate greater than "average statewide highway crash rate plus one standard deviation"
District Rankings are Provided in the Following Table

Table 5.6: Two-Lane Highways - Ranking of Priority Candidate Locations in Holbrook District

Route	Direction	BMP	EMP	Total Points	Tier Level	District Rank	Statewide Rank	Cost Estimate*
S 264	Both	458.0	460.0	78.76	1	1	8	$3,465,000
S 264	Both	456.0	458.0	78.55	1	2	9	$3,465,000
S 264	Both	460.0	462.0	78.44	1	3	11	$3,465,000
S 264	Both	464.0	465.7	78.37	1	4	13	$2,945,250
S 264	Both	454.0	456.0	78.29	1	5	14	$3,465,000
S 264	Both	462.0	464.0	78.18	1	6	15	$3,465,000
S 264	Both	452.0	454.0	77.97	1	7	16	$3,465,000
S 264	Both	442.0	444.0	77.64	1	8	17	$3,465,000
S 264	Both	450.0	452.0	75.72	1	9	26	$3,781,470
S 264	Both	444.0	446.0	74.79	1	10	31	$3,557,914
U 191	Both	447.5	450.0	74.62	1	11	32	$3,937,500
S 264	Both	448.0	450.0	73.90	1	12	38	$3,465,000
S 077	Both	386.0	387.8	73.27	1	13	43	$1,811,700
S 264	Both	446.0	448.0	71.63	1	14	52	$4,049,606
U 160	Both	390.0	392.0	71.50	1	15	53	$1,850,394
U 160	Both	448.0	450.0	70.83	1	16	58	$1,800,000
U 160	Both	392.0	394.0	70.36	1	17	64	$1,800,000
U 160	Both	382.0	384.0	69.95	1	18	69	$1,800,000
U 160	Both	446.0	448.0	69.70	1	19	73	$1,800,000
U 160	Both	378.0	380.0	69.58	1	20	78	$1,800,000
U 160	Both	440.0	442.0	69.55	1	21	80	$1,800,000
S 264	Both	380.0	382.0	69.44	1	22	83	$3,780,000
S 264	Both	378.0	380.0	69.36	1	23	85	$3,780,000
U 160	Both	374.0	376.0	69.31	1	24	87	$1,800,000
U 160	Both	380.0	382.0	69.27	1	25	88	$1,800,000
U 160	Both	376.0	378.0	69.21	1	26	91	$1,800,000
U 191	Both	454.0	456.0	69.14	1	27	92	$3,150,000
U 160	Both	370.0	372.0	69.13	1	28	93	$1,800,000
U 160	Both	460.0	462.0	69.10	1	29	95	$1,980,000
U 160	Both	450.0	452.0	69.10	1	30	97	$1,800,000
U 160	Both	442.0	444.0	69.06	1	31	98	$1,800,000
U 160	Both	366.0	368.0	69.05	1	32	99	$1,800,000
U 160	Both	368.0	370.0	68.97	1	33	100	$1,800,000

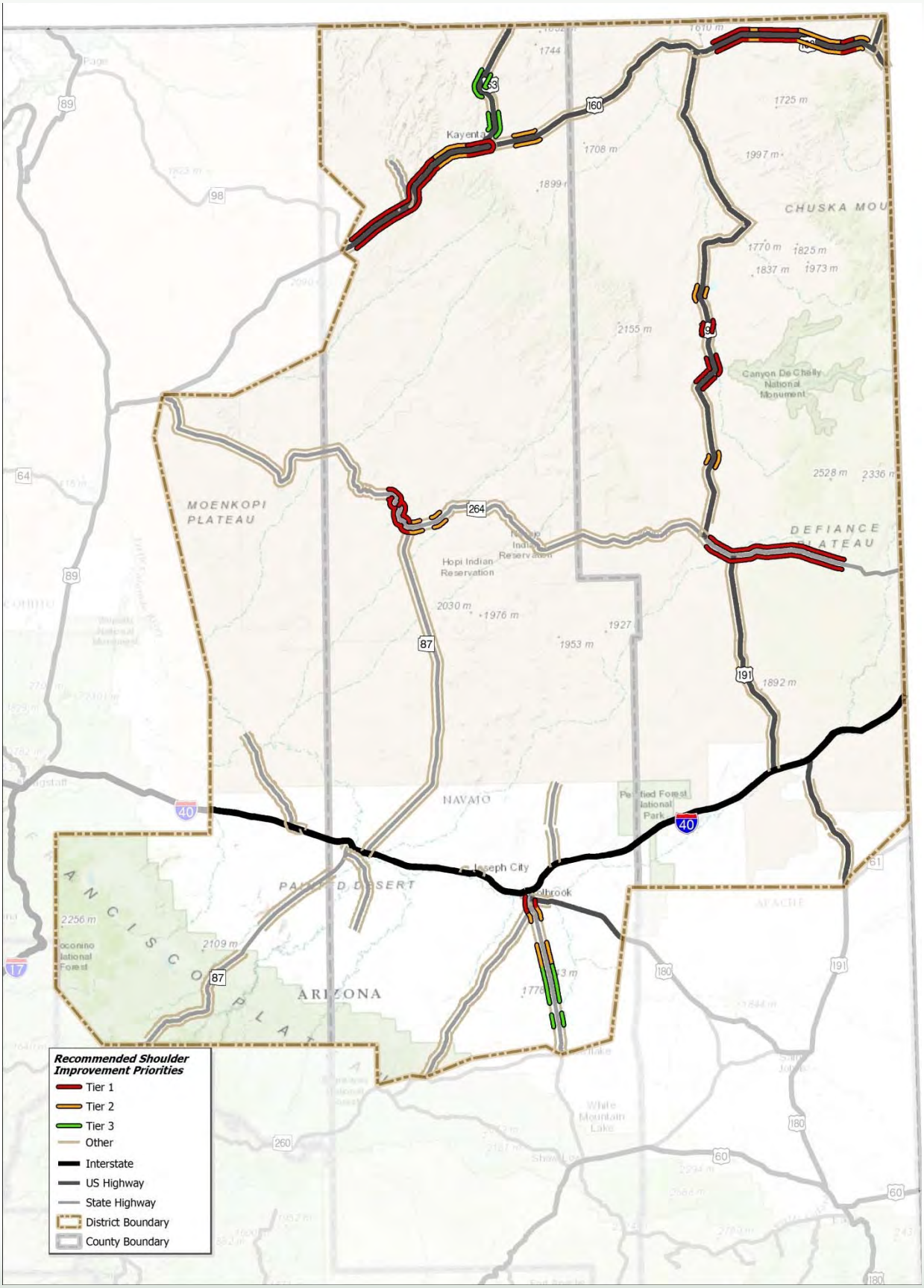
** Planning level cost estimates were developed for Tier 1 candidate locations only. Cost Estimates developed based on typical per-mile/foot construction costs for widening and are expressed in 2015 dollars and have not been field verified. Costs associated with acquiring right-of-way, widening culverts, and environmental mitigation are not included in estimates. Due to topographical or other physical constraints adjustment factors may need to be applied to the cost estimates to account for increased construction costs. During project implementation, the costs for each project may vary; therefore, during the design phase a detailed analysis should be performed to determine actual costs. Unless otherwise noted, the recommended projects are not yet funded.*

Table 5.6: Two-Lane Highways - Ranking of Priority Candidate Locations in Holbrook District (Continued)

Route	Direction	BMP	EMP	Total Points	Tier Level	District Rank	Statewide Rank	Cost Estimate*
U 160	Both	438.0	440.0	68.85	1	34	103	$1,800,000
S 264	Both	382.0	384.0	68.80	1	35	105	$3,780,000
U 191	Both	444.0	446.5	68.59	1	36	109	$3,937,500
U 160	Both	364.0	366.0	68.56	1	37	110	$1,800,000
U 160	Both	372.0	374.0	68.55	1	38	112	$1,800,000
S 264	Both	376.0	378.0	68.52	1	39	113	$3,780,000
U 191	Both	430.0	432.0	68.25	2	40	116	
S 264	Both	384.0	386.0	68.09	2	41	118	
U 160	Both	444.0	446.0	67.17	2	42	129	
U 160	Both	458.0	460.0	66.29	2	43	136	
U 160	Both	456.0	458.0	65.76	2	44	142	
U 160	Both	452.0	454.0	65.40	2	45	146	
S 264	Both	388.0	390.0	65.40	2	46	147	
U 160	Both	454.0	456.0	65.23	2	47	152	
U 160	Both	388.0	390.0	64.95	2	48	156	
U 160	Both	462.0	464.0	64.45	2	49	166	
U 160	Both	386.0	388.0	63.39	2	50	198	
S 077	Both	384.0	386.0	63.20	2	51	201	
S 077	Both	376.0	378.0	62.63	2	52	210	
U 191	Both	460.0	462.0	61.24	2	53	226	
U 160	Both	384.0	386.0	61.01	2	54	227	
U 160	Both	398.0	400.0	58.60	2	55	263	
S 077	Both	378.0	380.0	58.27	2	56	264	
U 160	Both	400.0	402.0	56.09	2	57	287	
S 077	Both	372.0	374.0	54.10	3	58	313	
S 077	Both	366.0	368.0	52.42	3	59	321	
S 077	Both	374.0	376.0	51.64	3	60	326	
U 163	Both	396.4	400.0	51.57	3	61	327	
U 163	Both	406.0	408.0	49.95	3	62	336	
U 163	Both	404.0	406.0	49.10	3	63	342	
S 077	Both	370.0	372.0	48.47	3	64	354	

** Planning level cost estimates were developed for Tier 1 candidate locations only. Cost Estimates developed based on typical per-mile/foot construction costs for widening and are expressed in 2015 dollars and have not been field verified. Costs associated with acquiring right-of-way, widening culverts, and environmental mitigation are not included in estimates. Due to topographical or other physical constraints adjustment factors may need to be applied to the cost estimates to account for increased construction costs. During project implementation, the costs for each project may vary; therefore, during the design phase a detailed analysis should be performed to determine actual costs. Unless otherwise noted, the recommended projects are not yet funded.*

Figure 5.3: Two-Lane Highways - Priority Candidate Locations in Holbrook District



Kingman District

Table 5.7 presents the list of candidate locations for shoulder improvements on two-lane highways in the Kingman District. The candidate locations are ranked at the statewide and district level and grouped into three tiers – high, medium, and low priority. Table 5.8 summarizes the priority candidate improvement locations by tier. Figure 5.4 illustrates the prioritization of improvement projects within the District.

Table 5.7: Two-Lane Highways - Candidate Shoulder Improvement Locations in Kingman District

Route	Dir	BMP	EMP	Priority Segments: (Segments that exceed LOS and Crash Rate Threshold)*
Kingman District				
S 066	Both	104.8	105.8	
S 066	Both	80.3	80.9	
S 066	Both	86.0	90.0	
S 089	Both	362.0	363.7	MP362 - MP363.7
S 095	Both	162.0	176.9	MP162 - MP164
				MP164 - MP166
				MP166 - MP168
				MP168 - MP170
				MP170 - MP172
				MP172 - MP174
				MP174 - MP176.9
S 095	Both	190.0	192.0	MP190 - MP192
S 095	Both	194.5	196.0	MP194.5 - MP196
S 095	Both	226.0	227.3	MP226 - MP227.3
S 096	Both	0.0	22.0	
S 097	Both	156.1	166.0	
U 093	Both	101.7	103.6	MP101.7 - MP103.6
U 093	Both	106.6	109.1	MP106.6 - MP109.1
U 093	Both	116.4	119.4	MP116.4 - MP119.4
U 093	Both	121.3	124.4	MP121.3 - MP124.4
U 093	Both	161.6	182.7	MP161.6 - MP164
				MP164 - MP166
				MP166 - MP168
				MP168 - MP170
				MP170 - MP172
				MP172 - MP174
				MP174 - MP176
				MP176 - MP178
				MP178 - MP180
				MP180 - MP182.7

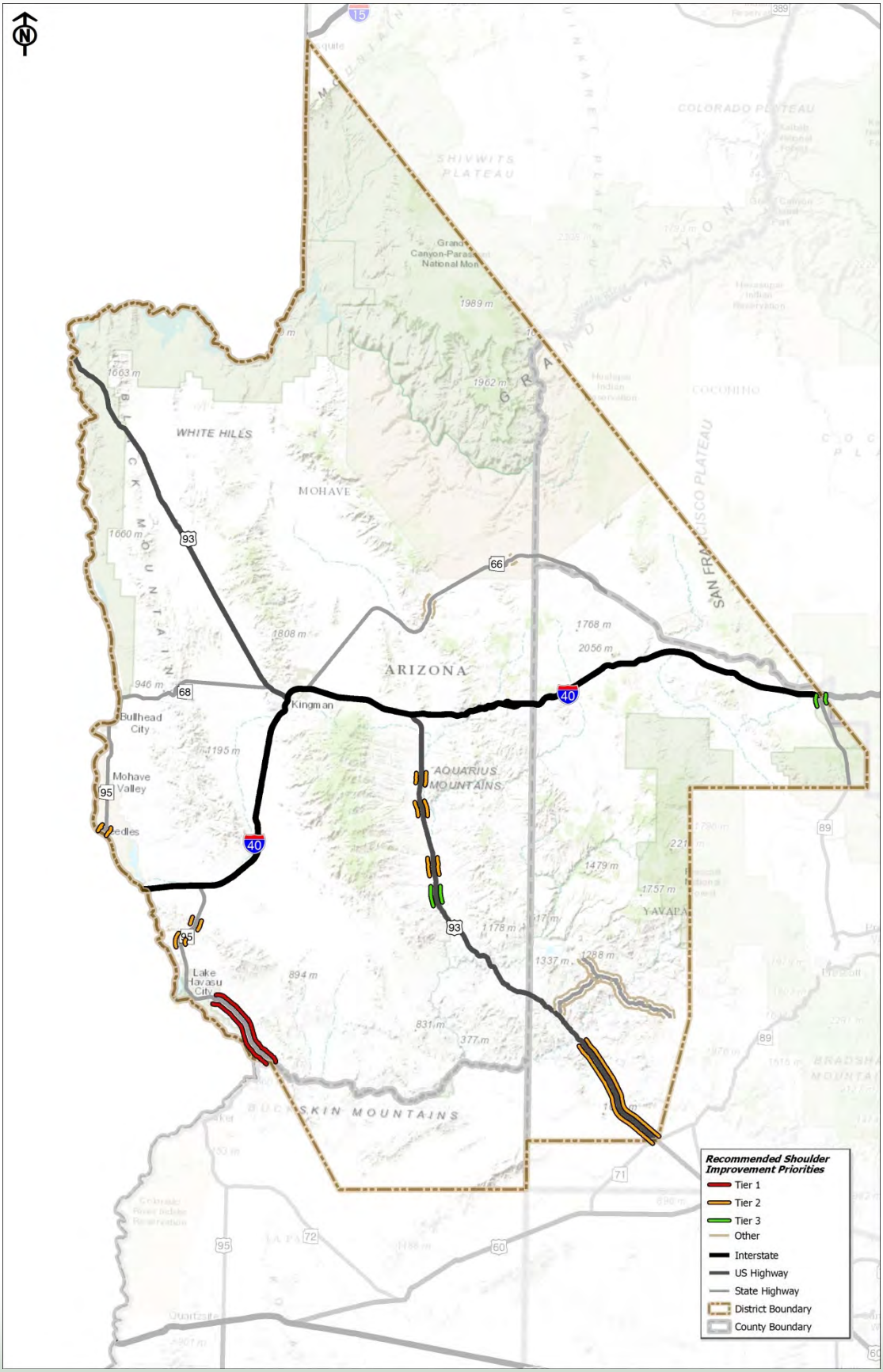
Priority segments represent segments that
- Have LOS worse than C
- Crash rate greater than "average statewide highway crash rate plus one standard deviation"
- District Rankings are provided in the following table

Table 5.8: Two-Lane Highways - Ranking of Priority Candidate Locations in Kingman District

Route	Direction	BMP	EMP	Total Points	Tier Level	District Rank	Statewide Rank	Cost Estimate*
S 095	Both	164.0	166.0	81.16	1	1	2	$2,160,000
S 095	Both	162.0	164.0	80.95	1	2	3	$2,160,000
S 095	Both	166.0	168.0	80.41	1	3	4	$2,160,000
S 095	Southbound	168.0	170.0	74.10	1	4	37	$1,183,700
S 095	Both	170.0	172.0	72.51	1	5	46	$2,281,576
S 095	Both	174.0	176.9	71.40	1	6	54	$2,762,528
S 095	Both	172.0	174.0	68.62	1	7	108	$2,298,110
U 093	Both	176.0	178.0	67.75	2	8	120	
U 093	Both	161.6	164.0	67.60	2	9	123	
U 093	Both	172.0	174.0	66.66	2	10	132	
S 095	Both	194.5	196.0	65.63	2	11	144	
S 095	Both	226.0	227.3	63.61	2	12	190	
U 093	Both	170.0	172.0	63.50	2	13	192	
U 093	Both	164.0	166.0	63.46	2	14	194	
U 093	Both	174.0	176.0	63.44	2	15	195	
U 093	Both	166.0	168.0	63.41	2	16	197	
U 093	Both	116.4	119.4	63.03	2	17	203	
U 093	Both	168.0	170.0	62.88	2	18	206	
U 093	Both	106.6	109.1	62.80	2	19	207	
S 095	Both	190.0	192.0	62.41	2	20	212	
U 093	Both	178.0	180.0	60.15	2	21	239	
U 093	Both	101.7	103.6	59.41	2	22	251	
U 093	Both	180.0	182.7	58.10	2	23	265	
S 089	Both	362.0	363.7	55.56	3	24	296	
U 093	Both	121.3	124.4	54.51	3	25	308	

** Planning level cost estimates were developed for Tier 1 candidate locations only. Cost Estimates developed based on typical per-mile/foot construction costs for widening and are expressed in 2015 dollars and have not been field verified. Costs associated with acquiring right-of-way, widening culverts, and environmental mitigation are not included in estimates. Due to topographical or other physical constraints adjustment factors may need to be applied to the cost estimates to account for increased construction costs. During project implementation, the costs for each project may vary; therefore, during the design phase a detailed analysis should be performed to determine actual costs. Unless otherwise noted, the recommended projects are not yet funded.*

Figure 5.4: Two-Lane Highways - Priority Candidate Locations in Kingman District



Phoenix Maintenance District

Table 5.9 presents the list of candidate locations for shoulder improvements on two-lane highways in the Phoenix Maintenance District. The candidate locations are ranked at the statewide and district level and grouped into three tiers – high, medium, and low priority. Table 5.10 summarizes the priority candidate improvement locations by tier. Figure 5.5 illustrates the prioritization of improvement projects within the District.

Table 5.9: Two-Lane Highways - Candidate Shoulder Improvement Locations in Phoenix Maintenance District

Route	Dir	BMP	EMP	Priority Segments: (Segments that exceed LOS and Crash Rate Threshold)*
Phoenix Maintenance District				
S 088	Both	196.2	220	MP200 - MP202
				MP202 - MP204
				MP204 - MP206
				MP206 - MP208
				MP208 - MP210
				MP210 - MP212
				MP212 - MP214
				MP218 - MP220
S 587	Both	219.5	224	MP219.5 - MP222
				MP222 - MP224

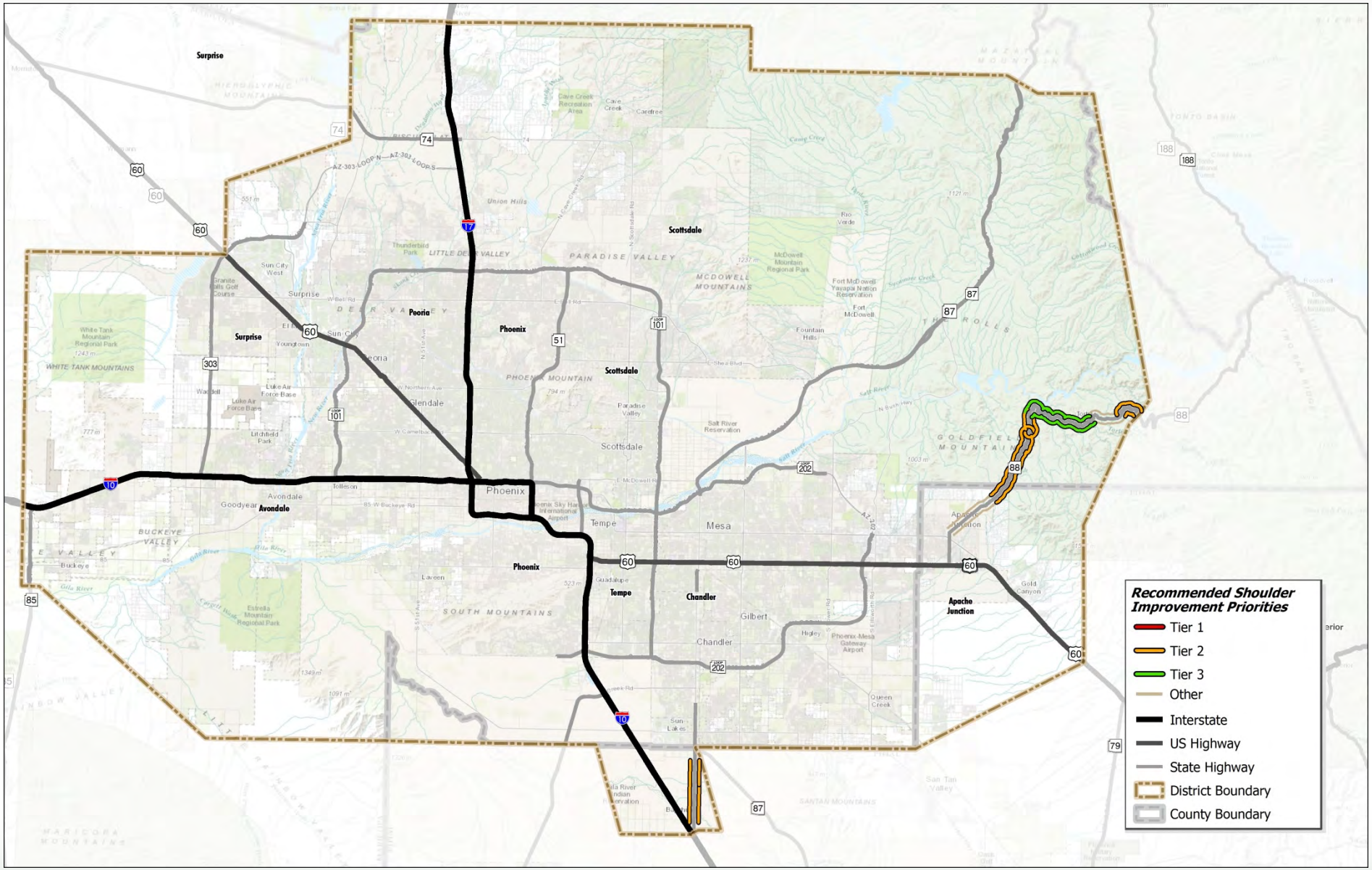
Priority segments represent segments that
- Have LOS worse than C
- Crash rate greater than "average statewide highway crash rate plus one standard deviation"
- District Rankings are provided in the following table

Table 5.10: Two-Lane Highways - Ranking of Priority Candidate Locations in Phoenix Maintenance District

Route	Direction	BMP	EMP	Total Points	Tier Level	District Rank	Statewide Rank	Cost Estimate*
S 088	Both	218.0	220.0	67.22	2	1	128	
S 088	Both	204.0	206.0	65.18	2	2	155	
S 088	Both	206.0	208.0	64.72	2	3	161	
S 088	Both	202.0	204.0	62.14	2	4	215	
S 587	Both	222.0	224.0	59.99	2	5	240	
S 088	Both	200.0	202.0	58.77	2	6	260	
S 587	Both	219.5	222.0	56.09	2	7	288	
S 088	Both	212.0	214.0	53.66	3	8	316	
S 088	Both	210.0	212.0	51.66	3	9	325	
S 088	Both	208.0	210.0	49.08	3	10	343	

** Planning level cost estimates were developed for Tier 1 candidate locations only.*

Figure 5.5: Two-Lane Highways - Priority Candidate Locations in Phoenix Maintenance District



Prescott District

Table 5.11 presents the list of candidate locations for shoulder improvements on two-lane highways in the Prescott District. The candidate locations are ranked at the statewide and district level and grouped into three tiers – high, medium, and low priority. Table 5.12 summarizes the priority candidate improvement locations by tier. Figure 5.5 illustrates the prioritization of improvement projects within the District.

Table 5.11: Two-Lane Highways - Candidate Shoulder Improvement Locations in Prescott District

Route	Dir	BMP	EMP	Priority Segments: (Segments that exceed LOS and Crash Rate Threshold)*
Prescott District				
S 071	Both	85.0	109.6	
S 087	Both	254.6	290.6	MP254.6 - MP256 MP256 - MP258 MP258 - MP260 MP260 - MP262 MP262 - MP264 MP264 - MP266 MP266 - MP268 MP268 - MP270 MP270 - MP272 MP272 - MP274 MP274 - MP276 MP276 - MP278 MP282 - MP284 MP284 - MP286
S 089	Both	258.3	268.1	
S 089	Northbound	269.2	272.0	
S 089	Both	276.0	276.2	MP276 - MP276.2
S 089	Both	278.0	280.4	
S 089	Both	281.9	282.6	
S 089	Both	286.0	310.0	MP296 - MP298 MP302 - MP305.4 MP305.4 - MP308
S 089	Both	316.0	317.0	MP316 - MP317
S 089	Both	320.0	320.1	MP320 - MP320.1
S 089	Both	329.3	329.5	MP329.3 - MP329.5

Table 5.11: Two-Lane Highways - Candidate Shoulder Improvement Locations in Prescott District (Continued)

Route	Dir	BMP	EMP	Priority Segments: (Segments that exceed LOS and Crash Rate Threshold)*
Prescott District				
S 169	Both	0.0	15.0	MP0 - MP2
				MP2 - MP4
				MP4 - MP6
				MP6 - MP8
				MP8 - MP10
				MP10 - MP12
				MP12 - MP15
S 260	Both	211.2	213.4	MP211.2 - MP213.4
S 260	Both	215.8	216.9	MP215.8 - MP216.9
S 260	Both	222.9	251.9	
S 260	Both	256.8	260.1	MP256.8 - MP260.1
S 260	Both	269.2	272.2	MP269.2 - MP272.2
S 260	Eastbound	277.1	277.4	MP277.1 - MP277.4
S 260	Both	282.3	303.7	MP282.3 - MP286
				MP286 - MP288
				MP288 - MP290
				MP290 - MP292
				MP292 - MP294
				MP294 - MP296
				MP296 - MP298
				MP298 - MP300
				MP300 - MP302
				MP302 - MP303.7
SA089	Both	324.8	327.8	
SA089	Both	329.7	343.7	MP334 - MP336
				MP340 - MP342
				MP342 - MP343.7
SA089	Both	344.5	348.2	
U 060	Both	49.5	62.3	MP60 - MP62.3
U 060	Both	84.6	108.0	MP106 - MP108

Priority segments represent segments that
- Have LOS worse than C
- Crash rate greater than "average statewide highway crash rate plus one standard deviation"
District Rankings are Provided in the Following Table

Table 5.12: Two-Lane Highways - Ranking of Priority Candidate Locations in Prescott District

Route	Direction	BMP	EMP	Total Points	Tier Level	District Rank	Statewide Rank	Cost Estimate*
S 169	Both	2.0	4.0	74.15	1	2	36	$1,980,000
S 169	Both	10.0	12.0	73.86	1	3	39	$1,980,000
S 260	Both	256.8	260.1	71.96	1	4	49	$5,595,975
S 087	Both	268.0	270.0	71.66	1	5	51	$3,780,000
S 169	Both	6.0	8.0	71.05	1	6	56	$2,070,682
S 089	Both	320.0	320.1	70.80	1	7	59	$117,000
S 087	Both	270.0	272.0	69.69	1	8	74	$3,780,000
S 089	Both	329.3	329.5	69.40	1	9	84	$267,750
S 169	Both	4.0	6.0	68.85	1	10	104	$2,142,992
S 169	Both	8.0	10.0	68.46	1	11	115	$2,173,702
S 169	Both	12.0	15.0	67.85	2	12	119	
S 089	Both	316.0	317.0	67.43	2	13	125	
S 260	Both	269.2	272.2	66.61	2	14	134	
S 260	Both	292.0	294.0	65.45	2	15	145	
S 260	Both	294.0	296.0	65.35	2	16	150	
S 169	Both	0.0	2.0	65.26	2	17	151	
S 260	Both	302.0	303.7	64.87	2	18	157	
S 260	Both	296.0	298.0	64.83	2	19	158	
S 260	Both	290.0	292.0	64.77	2	20	159	
S 260	Both	298.0	300.0	64.41	2	21	167	
S 087	Both	258.0	260.0	64.36	2	22	169	
S 260	Both	282.3	286.0	64.11	2	23	179	
S 260	Both	286.0	288.0	63.92	2	24	181	
S 087	Both	272.0	274.0	63.84	2	25	183	
S 260	Both	215.8	216.9	63.48	2	26	193	
S 260	Both	300.0	302.0	62.88	2	27	205	
S 087	Both	264.0	266.0	62.63	2	28	209	
S 260	Both	288.0	290.0	62.61	2	29	211	
S 087	Both	254.6	256.0	62.19	2	30	214	
S 087	Both	260.0	262.0	62.05	2	31	217	
S 087	Both	262.0	264.0	61.58	2	32	221	

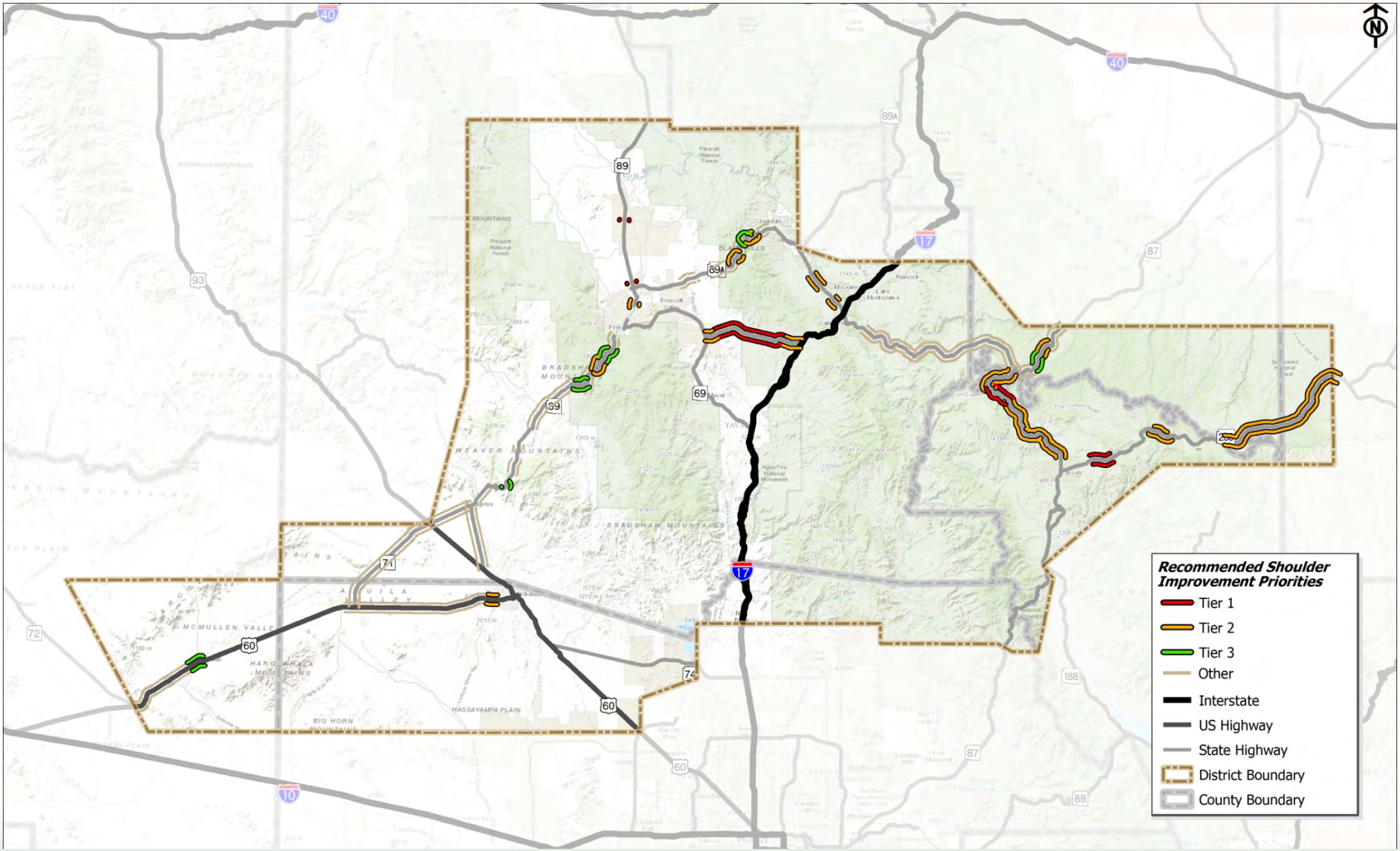
** Planning level cost estimates were developed for Tier 1 candidate locations only. Cost Estimates developed based on typical per-mile/foot construction costs for widening and are expressed in 2015 dollars and have not been field verified. Costs associated with acquiring right-of-way, widening culverts, and environmental mitigation are not included in estimates. Due to topographical or other physical constraints adjustment factors may need to be applied to the cost estimates to account for increased construction costs. During project implementation, the costs for each project may vary; therefore, during the design phase a detailed analysis should be performed to determine actual costs. Unless otherwise noted, the recommended projects are not yet funded.*

Table 5.12: Two-Lane Highways - Ranking of Priority Candidate Locations in Prescott District (Continued)

Route	Direction	BMP	EMP	Total Points	Tier Level	District Rank	Statewide Rank	Cost Estimate*
S 087	Both	266.0	268.0	61.28	2	33	225	
U 060	Both	106.0	108.0	60.82	2	34	229	
S 260	Both	211.2	213.4	60.79	2	35	231	
S 087	Both	256.0	258.0	59.80	2	36	245	
S 087	Both	276.0	278.0	59.59	2	37	247	
S 087	Both	274.0	276.0	58.68	2	38	262	
SA089	Both	334.0	336.0	57.24	2	39	278	
S 087	Both	284.0	286.0	56.20	2	40	286	
SA089	Both	342.0	343.7	56.04	2	41	289	
S 089	Both	302.0	305.4	55.80	2	42	291	
S 089	Both	276.0	276.2	55.75	3	43	293	
S 087	Both	282.0	284.0	55.09	3	44	302	
S 089	Both	296.0	298.0	52.35	3	45	322	
S 089	Both	305.4	308.0	50.68	3	46	332	
U 060	Both	60.0	62.3	49.71	3	47	337	
SA089	Both	340.0	342.0	47.99	3	48	364	

** Planning level cost estimates were developed for Tier 1 candidate locations only. Cost Estimates developed based on typical per-mile/foot construction costs for widening and are expressed in 2015 dollars and have not been field verified. Costs associated with acquiring right-of-way, widening culverts, and environmental mitigation are not included in estimates. Due to topographical or other physical constraints adjustment factors may need to be applied to the cost estimates to account for increased construction costs. During project implementation, the costs for each project may vary; therefore, during the design phase a detailed analysis should be performed to determine actual costs. Unless otherwise noted, the recommended projects are not yet funded.*

Figure 5.6: Two-Lane Highways - Priority Candidate Locations in Prescott District



Safford District

Table 5.13 presents the list of candidate locations for shoulder improvements on two-lane highways in the Safford District. The candidate locations are ranked at the statewide and district level and grouped into three tiers – high, medium, and low priority. Table 5.14 summarizes the priority candidate improvement locations by tier. Figure 5.7 illustrates the prioritization of improvement projects within the District.

Table 5.13: Two-Lane Highways - Candidate Shoulder Improvement Locations in Safford District

Route	Dir	BMP	EMP	Priority Segments: (Segments that exceed LOS and Crash Rate Threshold)*
Safford District				
S 075	Both	379.4	386.0	
S 075	Both	388.0	398.0	
S 078	Both	154.0	174.0	
S 080	Both	293.5	293.7	MP293.5 - MP293.7
S 080	Both	299.0	309.0	MP299 - MP301
				MP301 - MP304
				MP304 - MP306
				MP306 - MP309
S 080	Both	315.5	316.6	MP315.5 - MP316.6
S 080	Both	317.8	341.4	MP317.8 - MP320
				MP334 - MP336
				MP336 - MP339
S 080	Both	346.0	415.0	MP348 - MP350
				MP352 - MP354
S 082	Both	46.0	67.4	
S 090	Both	323.0	336.4	MP323 - MP326
				MP326 - MP328
				MP328 - MP330
				MP330 - MP332
				MP334 - MP336.4
S 092	Both	353.6	354.2	MP353.6 - MP354.2
S 181	Both	38.0	64.0	
S 186	Both	334.5	359.3	
S 266	Both	104.0	124.0	
S 366	Both	114.0	143.0	
SS266	Both	123.0	126.0	
U 070	Both	288.0	300.0	MP294 - MP296
				MP296 - MP298
U 070	Both	340.1	343.2	MP340.1 - MP343.2
U 070	Both	349.7	365.7	
U 070	Both	374.9	378.2	

Table 5.13: Two-Lane Highways - Candidate Shoulder Improvement Locations in Safford District (Continued)

Route	Dir	BMP	EMP	Priority Segments: (Segments that exceed LOS and Crash Rate Threshold)*
Safford District				
U 191	Both	0.4	7.6	MP2 - MP4
				MP4 - MP6
				MP6 - MP7.57
U 191	Both	114.5	117.2	
U 191	Both	130.8	144.1	MP130.8 - MP134
				MP138 - MP140
				MP140 - MP142
				MP142 - MP144.1
U 191	Northbound	151.0	151.3	
U 191	Northbound	153.9	154.2	
U 191	Both	160.0	164.8	MP160 - MP162
U 191	Both	178.0	179.4	
U 191	Both	181.9	226.0	
U 191	Both	23.0	24.5	
U 191	Both	25.3	66.5	
UX191	Both	167.5	178.0	MP167.5 - MP170
				MP170 - MP172
UY191(1)	Both	86.0	89.7	

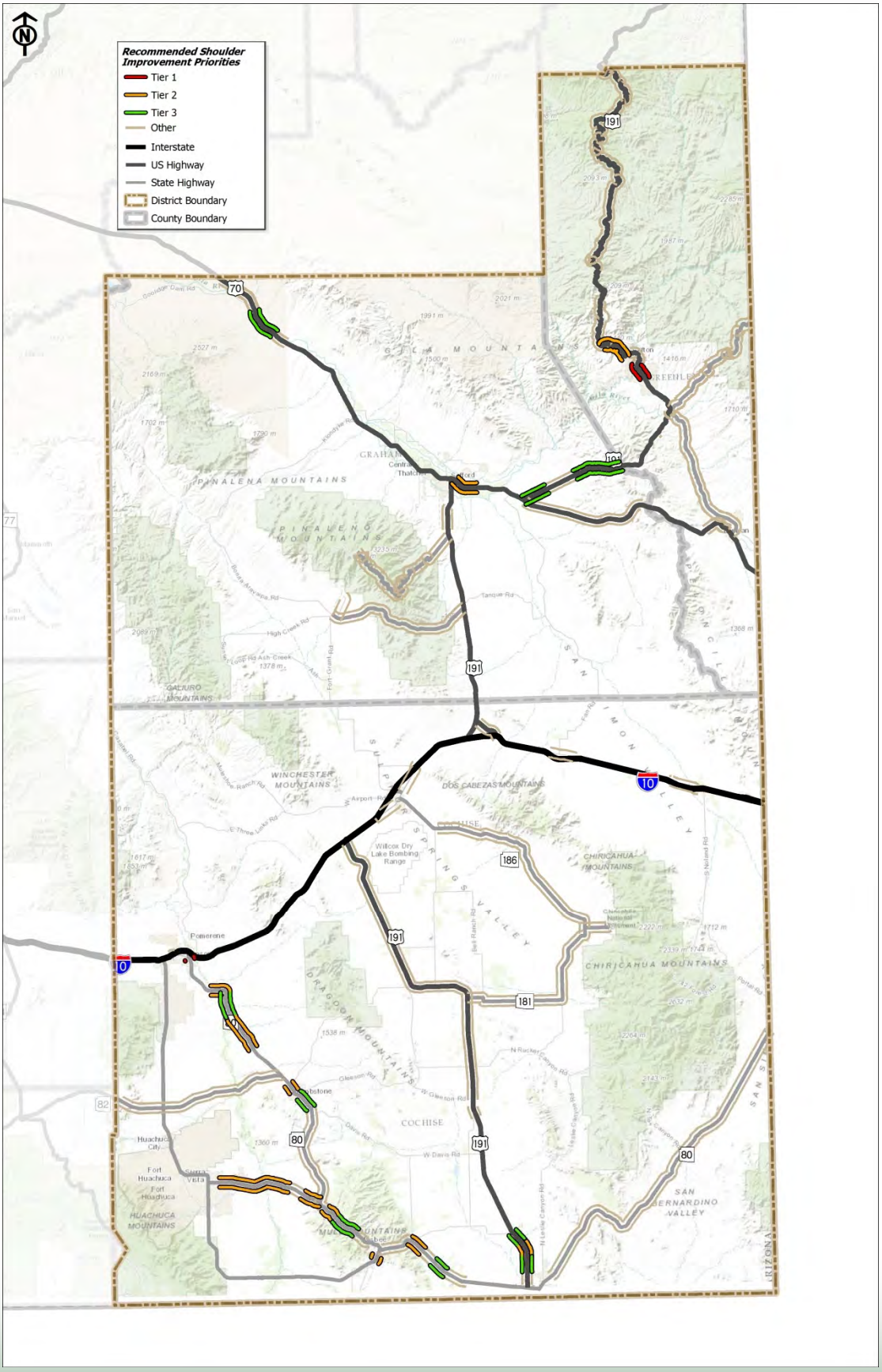
Priority segments represent segments that
- Have LOS worse than C
- Crash rate greater than "average statewide highway crash rate plus one standard deviation"
District Rankings are Provided in the Following Table

Table 5.14: Two-Lane Highways - Ranking of Priority Candidate Locations in Safford District

Route	Direction	BMP	EMP	Total Points	Tier Level	District Rank	Statewide Rank	Cost Estimate*
U 191	Both	160.0	162.0	79.71	1	1	5	$2,160,000
S 080	Both	293.5	293.7	72.16	1	2	48	$171,000
S 080	Both	315.5	316.6	64.74	2	3	160	
S 080	Both	306.0	309.0	64.16	2	4	176	
S 090	Both	323.0	326.0	63.41	2	5	196	
S 092	Both	353.6	354.2	62.77	2	6	208	
U 070	Both	340.1	343.2	61.90	2	7	218	
S 080	Both	304.0	306.0	61.71	2	8	220	
S 080	Both	299.0	301.0	60.96	2	9	228	
S 090	Both	334.0	336.4	60.32	2	10	236	
UX191	Both	167.5	170.0	60.31	2	11	237	
S 090	Both	330.0	332.0	59.80	2	12	246	
S 080	Both	348.0	350.0	58.71	2	13	261	
S 090	Both	328.0	330.0	57.97	2	14	267	
UX191	Both	170.0	172.0	57.52	2	15	276	
S 090	Both	326.0	328.0	56.48	2	16	284	
S 080	Both	334.0	336.0	56.38	2	17	285	
U 191	Both	4.0	6.0	56.01	2	18	290	
S 080	Both	317.8	320.0	55.65	3	19	294	
U 191	Both	2.0	4.0	55.62	3	20	295	
U 191	Both	6.0	7.6	55.43	3	21	299	
S 080	Both	352.0	354.0	55.10	3	22	301	
S 080	Both	301.0	304.0	54.86	3	23	305	
U 191	Both	142.0	144.1	54.41	3	24	309	
U 191	Both	140.0	142.0	53.85	3	25	315	
U 191	Both	138.0	140.0	53.14	3	26	320	
U 070	Both	294.0	296.0	48.48	3	27	352	
U 191	Both	130.8	134.0	48.47	3	28	353	
S 080	Both	336.0	339.0	48.14	3	29	363	
U 070	Both	296.0	298.0	43.05	3	30	375	

** Planning level cost estimates were developed for Tier 1 candidate locations only. Cost Estimates developed based on typical per-mile/foot construction costs for widening and are expressed in 2015 dollars and have not been field verified. Costs associated with acquiring right-of-way, widening culverts, and environmental mitigation are not included in estimates. Due to topographical or other physical constraints adjustment factors may need to be applied to the cost estimates to account for increased construction costs. During project implementation, the costs for each project may vary; therefore, during the design phase a detailed analysis should be performed to determine actual costs. Unless otherwise noted, the recommended projects are not yet funded.*

Figure 5.7: Two-Lane Highways - Priority Candidate Locations in Safford District



Tucson District

Table 5.15 presents the list of candidate locations for shoulder improvements on two-lane highways in the Tucson District. The candidate locations are ranked at the statewide and district level and grouped into three tiers – high, medium, and low priority. Table 5.16 summarizes the priority candidate improvement locations by tier. Figure 5.8 illustrates the prioritization of improvement projects within the District.

Table 5.15: Two-Lane Highways - Candidate Shoulder Improvement Locations in Tucson District

Route	Dir	BMP	EMP	Priority Segments: (Segments that exceed LOS and Crash Rate Threshold)*
Tucson District				
S 077	Both	103.8	114.0	MP103.8 - MP106
				MP106 - MP108
				MP108 - MP110
S 079	Both	135.0	137.0	MP135 - MP137
S 079	Both	140.5	140.6	
S 079	Both	92.1	130.1	
S 082	Both	20.6	46.0	
S 082	Both	4.0	19.0	
S 083	Both	3.0	58.8	MP44 - MP46
S 084	Both	155.3	161.1	
S 084	Both	166.3	177.5	
S 085(1)	Both	32.0	40.0	
S 085(1)	Both	42.7	80.0	
S 086	Both	115.8	137.2	MP126 - MP128.8
S 086	Both	145.8	150.0	
S 086	Westbound	150.0	164.0	MP152 - MP154
				MP154 - MP156
				MP156 - MP158
				MP158 - MP160
				MP160 - MP162
S 086	Both	53.0	76.6	MP53 - MP56
				MP56 - MP58
				MP58 - MP60
				MP60 - MP62
				MP62 - MP64
				MP66 - MP68
				MP68 - MP70
				MP74 - MP76.6

Table 5.15: Two-Lane Highways - Candidate Shoulder Improvement Locations in Tucson District (Continued)

Route	Dir	BMP	EMP	Priority Segments: (Segments that exceed LOS and Crash Rate Threshold)*
Tucson District				
S 086	Both	77.6	114.1	MP80 - MP82
				MP82 - MP84
				MP84 - MP86
				MP86 - MP88
				MP88 - MP90
				MP90 - MP92
				MP112.8 - MP114.1
S 087	Both	125.8	129.2	MP125.8 - MP129.2
S 087	Both	134.6	145.3	MP134.61 - MP138
				MP138 - MP140
				MP140 - MP142
				MP142 - MP145.3
S 187	Both	186.0	192.0	
S 189	Both	0.0	0.3	MP0 - MP0.3
S 238	Both	24.0	42.0	
S 238	Eastbound	42.0	44.2	
S 286	Both	0.0	27.0	
S 286	Eastbound	28.4	30.0	
S 286	Both	30.0	45.0	
S 287	Both	116.4	125.0	MP116.4 - MP118
S 287	Southbound	142.2	142.3	MP142.2 - MP142.3
S 289	Both	0.0	10.8	MP0 - MP2
S 386	Both	0.0	12.0	

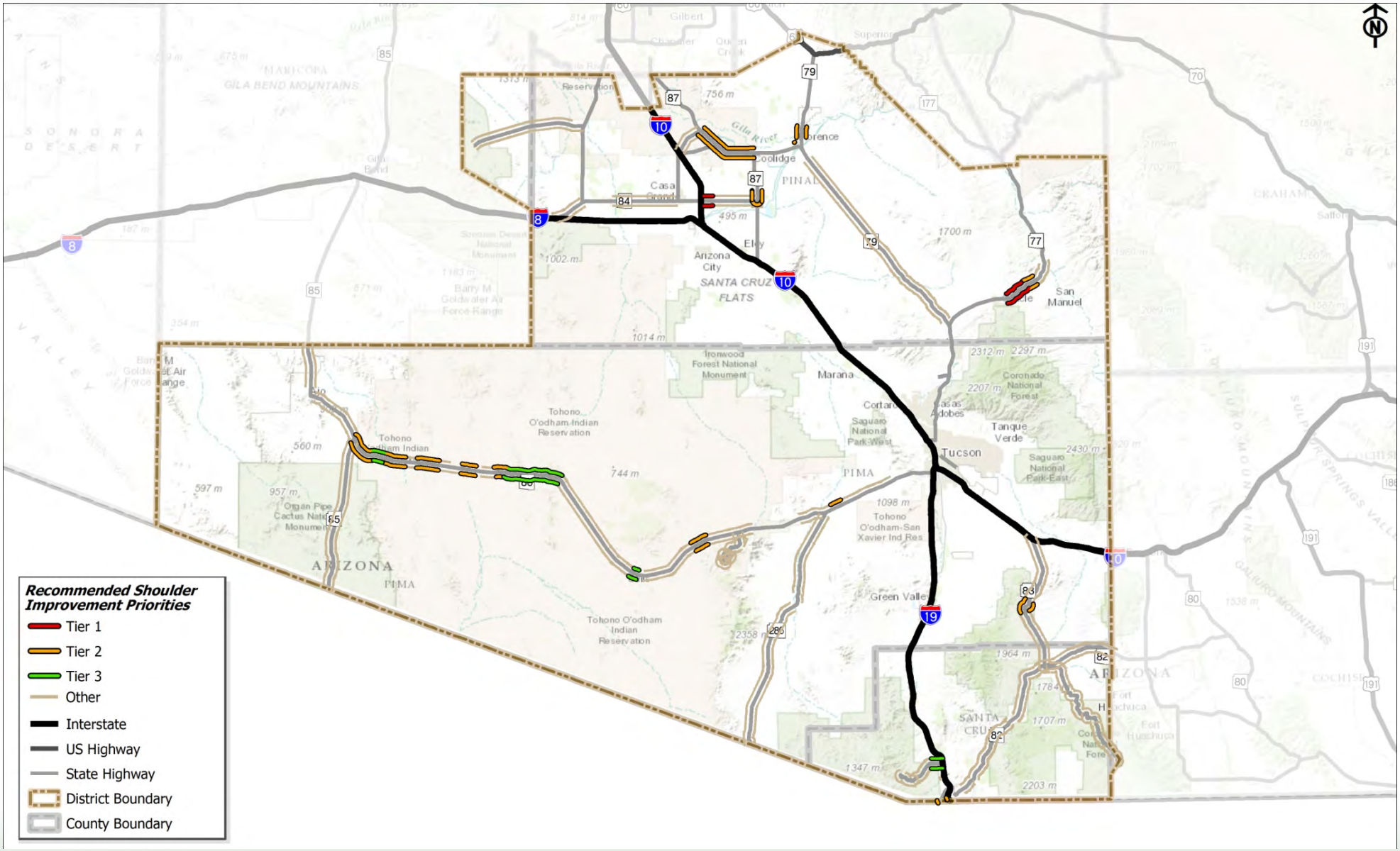
Priority segments represent segments that
- Have LOS worse than C
- Crash rate greater than "average statewide highway crash rate plus one standard deviation"
District Rankings are Provided in the Following Table

Table 5.16: Two-Lane Highways - Ranking of Priority Candidate Locations in Tucson District

Route	Direction	BMP	EMP	Total Points	Tier Level	District Rank	Statewide Rank	Cost Estimate*
S 287	Both	116.4	118.0	73.35	1	1	42	$1,476,000
S 077	Both	106.0	108.0	72.44	1	3	47	$1,980,000
S 077	Both	103.8	106.0	71.85	1	4	50	$3,776,850
S 083	Both	44.0	46.0	66.75	2	8	131	
S 077	Both	108.0	110.0	65.77	2	9	141	
S 287	Southbound	142.2	142.3	65.38	2	10	148	
S 086	Westbound	152.0	154.0	64.30	2	11	171	
S 087	Both	134.6	138.0	63.32	2	12	200	
S 087	Both	138.0	140.0	63.01	2	13	204	
S 087	Both	142.0	145.3	62.30	2	14	213	
S 086	Both	126.0	128.8	62.07	2	15	216	
S 087	Both	140.0	142.0	61.81	2	16	219	
S 087	Both	125.8	129.2	60.53	2	17	233	
S 079	Both	135.0	137.0	59.91	2	18	242	
S 189	Both	0.0	0.3	59.58	2	19	248	
S 086	Both	56.0	58.0	59.05	2	20	254	
S 086	Both	66.0	68.0	57.77	2	21	271	
S 086	Both	60.0	62.0	57.76	2	22	272	
S 086	Both	53.0	56.0	57.67	2	23	273	
S 086	Both	80.0	82.0	57.62	2	24	274	
S 086	Both	74.0	76.6	57.61	2	25	275	
S 086	Both	68.0	70.0	57.12	2	26	279	
S 086	Both	62.0	64.0	56.78	2	27	282	
S 086	Both	112.8	114.1	54.82	3	28	306	
S 086	Both	58.0	60.0	54.40	3	29	310	
S 086	Both	86.0	88.0	49.98	3	30	335	
S 086	Both	82.0	84.0	48.28	3	31	361	
S 086	Both	90.0	92.0	47.85	3	32	366	
S 086	Both	84.0	86.0	47.45	3	33	369	
S 289	Both	0.0	2.0	45.25	3	34	372	
S 086	Both	88.0	90.0	44.94	3	35	373	

** Planning level cost estimates were developed for Tier 1 candidate locations only. Cost Estimates developed based on typical per-mile/foot construction costs for widening and are expressed in 2015 dollars and have not been field verified. Costs associated with acquiring right-of-way, widening culverts, and environmental mitigation are not included in estimates. Due to topographical or other physical constraints adjustment factors may need to be applied to the cost estimates to account for increased construction costs. During project implementation, the costs for each project may vary; therefore, during the design phase a detailed analysis should be performed to determine actual costs. Unless otherwise noted, the recommended projects are not yet funded.*

Figure 5.8: Two-Lane Highways - Priority Candidate Locations in Tucson District



Yuma District

Table 5.17 presents the list of candidate locations for shoulder improvements on two-lane highways in the Yuma District. The candidate locations are ranked at the statewide and district level and grouped into three tiers – high, medium, and low priority. Table 5.18 summarizes the priority candidate improvement locations by tier. Figure 5.9 illustrates the prioritization of improvement projects within the District.

Table 5.17: Two-Lane Highways - Candidate Shoulder Improvement Locations in Yuma District

Route	Dir	BMP	EMP	Priority Segments: (Segments that exceed LOS and Crash Rate Threshold)*
Yuma District				
S 072	Both	14.5	49.0	
S 085(1)	Both	3.7	32.0	
S 095	Both	110.7	114.0	MP110.7 - MP114
S 095	Both	114.0	138.0	MP114 - MP116
				MP116 - MP118
				MP118 - MP120
				MP120 - MP122
				MP128 - MP130
				MP130 - MP132
				MP132 - MP134
				MP134 - MP136
			138.0	MP136 - MP138
S 095	Northbound	138.0	142.3	MP138 - MP140.5
				MP140.7 - MP142.3
S 095	Both	148.3	153.3	MP148.3 - MP150
				MP150 - MP153.3
S 095	Both	154.8	162.0	MP154.8 - MP158
				MP158 - MP160
				MP160 - MP162
S 195	Both	5.0	5.2	
U 060	Both	30.2	31.6	
U 060	Both	34.4	36.8	
U 095	Both	100.0	104.0	
U 095	Both	39.9	50.0	MP39.9 - MP42
				MP42 - MP44
				MP44 - MP46
				MP46 - MP48
U 095	Northbound	50.0	52.0	
U 095	Both	52.0	58.0	
U 095	Both	59.0	98.0	
U 095	Northbound	98.0	100.0	

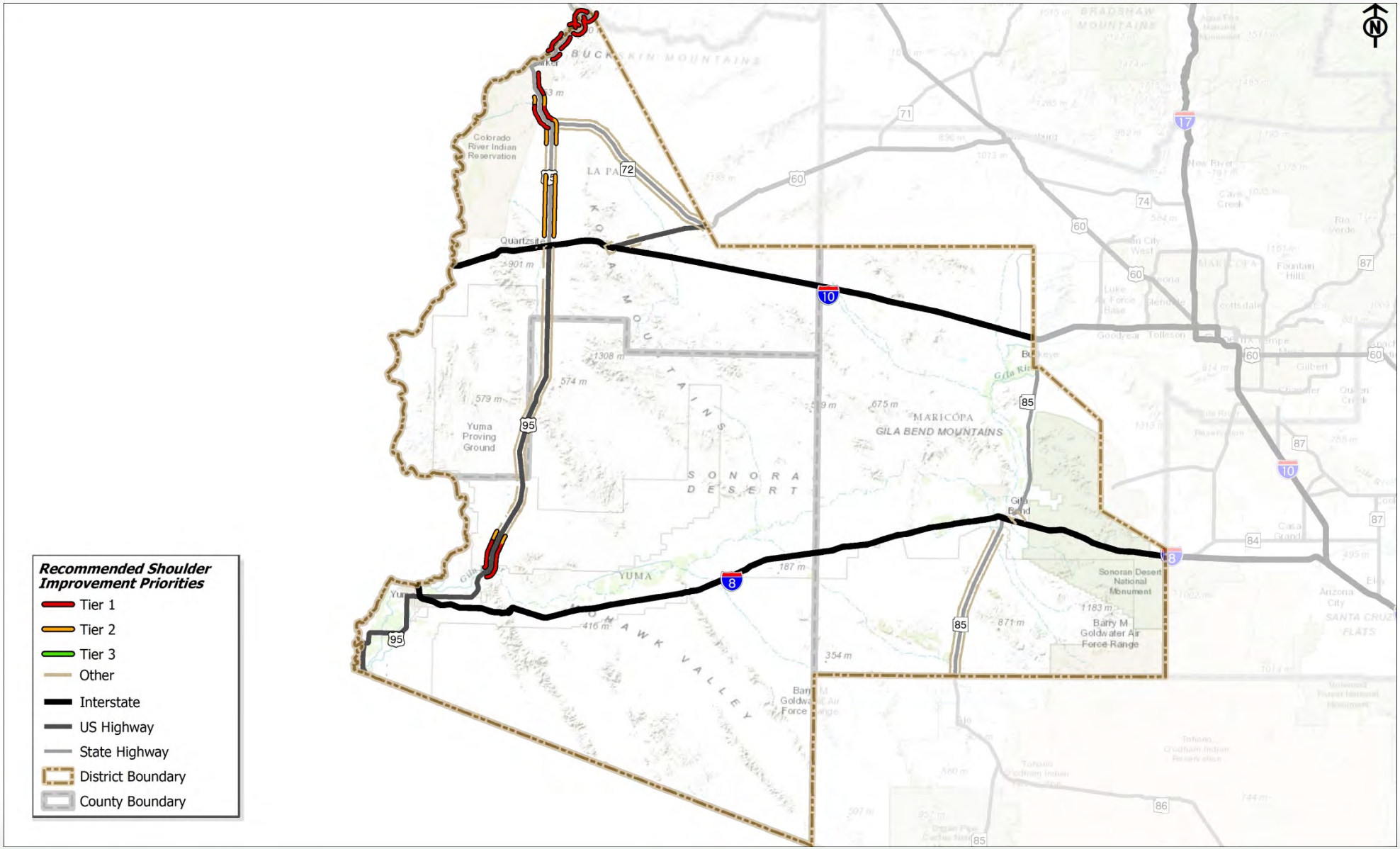
Priority segments represent segments that
- Have LOS worse than C
- Crash rate greater than "average statewide highway crash rate plus one standard deviation"
- District Rankings are provided in the following table

Table 5.18: Two-Lane Highways - Ranking of Priority Candidate Locations in Yuma District

Route	Direction	BMP	EMP	Total Points	Tier Level	District Rank	Statewide Rank	Cost Estimate*
S 095	Both	158.0	160.0	81.16	1	1	1	$2,160,000
S 095	Both	132.0	134.0	78.88	1	2	7	$1,800,000
S 095	Northbound	138.0	140.5	78.47	1	3	10	$1,237,500
U 095	Both	44.0	46.0	78.40	1	4	12	$1,800,000
S 095	Northbound	140.7	142.3	76.77	1	5	20	$782,100
U 095	Both	42.0	44.0	76.37	1	6	21	$1,876,378
S 095	Both	160.0	162.0	75.70	1	7	27	$2,176,378
S 095	Both	148.3	150.0	74.95	1	8	30	$420,750
S 095	Both	150.0	153.3	74.46	1	9	33	$824,175
S 095	Both	154.8	158.0	73.01	1	10	44	$3,618,470
U 095	Both	39.9	42.0	69.57	1	11	79	$1,935,000
S 095	Both	134.0	136.0	68.49	1	12	114	$1,980,000
S 095	Both	136.0	138.0	67.66	2	13	122	
U 095	Both	46.0	48.0	66.01	2	14	137	
S 095	Both	118.0	120.0	64.32	2	15	170	
S 095	Both	116.0	118.0	64.15	2	16	178	
S 095	Both	128.0	130.0	63.88	2	17	182	
S 095	Both	120.0	122.0	63.66	2	18	188	
S 095	Both	110.7	114.0	60.48	2	19	234	
S 095	Both	114.0	116.0	59.86	2	20	243	
S 095	Both	130.0	132.0	57.10	2	21	280	

** Planning level cost estimates were developed for Tier 1 candidate locations only. Cost Estimates developed based on typical per-mile/foot construction costs for widening and are expressed in 2015 dollars and have not been field verified. Costs associated with acquiring right-of-way, widening culverts, and environmental mitigation are not included in estimates. Due to topographical or other physical constraints adjustment factors may need to be applied to the cost estimates to account for increased construction costs. During project implementation, the costs for each project may vary; therefore, during the design phase a detailed analysis should be performed to determine actual costs. Unless otherwise noted, the recommended projects are not yet funded.*

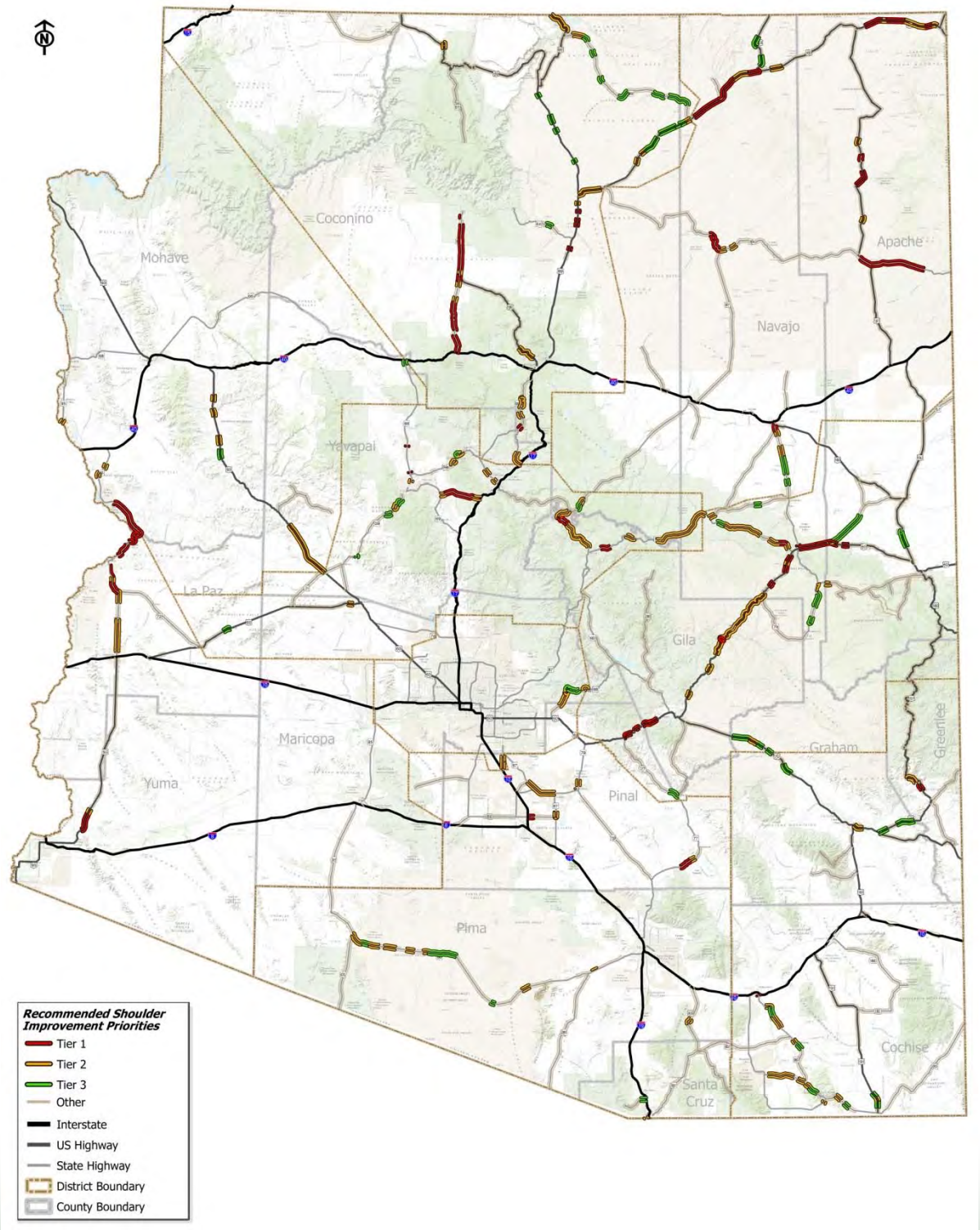
Figure 5.9: Two-Lane Highways - Priority Candidate Locations in Yuma District



Statewide Priority Shoulder Improvement Locations

Figure 5.10 illustrates the statewide location of the shoulder improvements. This section also includes project summary sheets for the Tier 1 locations.

Figure 5.10: Two-Lane Highways - Statewide Priority Candidate Locations



S 095: MP 158 - MP 160 (Both Directions)

Statewide Rank: 1

Project Details

Route: S 095	**Direction:** Both Directions
BMP: 158.0	**Tier Level:** 1
EMP: 160.0	**District Rank:** 1
District: Yuma	**Left Shoulder:** 2 to 6 FT
County: La Paz	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 6.01	**Terrain:** Mountainous
Speed Limit(mph): 65	**K-Factor:** 11
Existing AADT: 6086	**Future AADT:** 6600
Existing LOS: D	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 21

Safety Analysis

Total Number of Crashes:	22
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	9
Non-Injury Crashes:	13
Equivalent Property Damage Value:	53
Crash Rate:	0.99

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

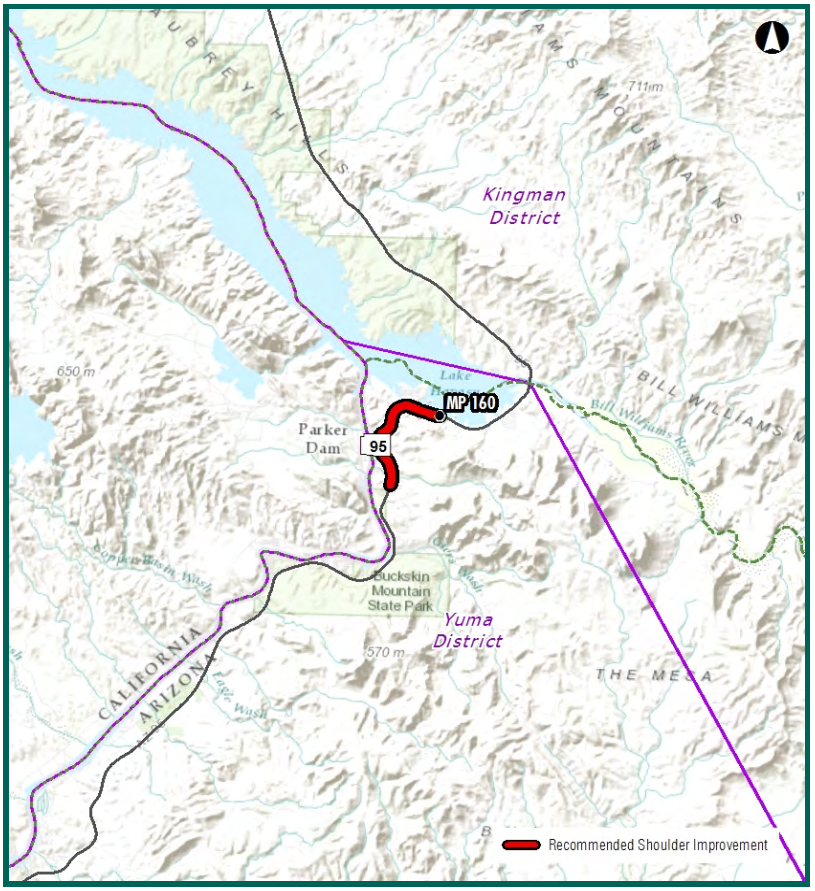
General Location Assessment: Paved shoulders in good condition; Roadside cliffs may limit construction

Cost Estimate: $2,160,000

Environmental Overview

Land Ownership: Private Land, State Trust Land, Bureau of Land Mgmt.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Lake Havasu SRMA; Suitable Desert Tortoise Habitat; Wildlife Linkage Zone; Riparian Habitats; Impaired Waters; Wetlands;100-Yr Floodplain; Leaking underground storage tank; Critical Habitat Area



S 095: MP 164 - MP 166 (Both Directions)

Statewide Rank: 2

Project Details

Route: S 095	**Direction:** Both Directions
BMP: 164.0	**Tier Level:** 1
EMP: 166.0	**District Rank:** 1
District: Kingman	**Left Shoulder:** 2 to 6 FT
County: Mohave	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 2.11	**Terrain:** Mountainous
Speed Limit(mph): 65	**K-Factor:** 11
Existing AADT: 5948	**Future AADT:** 6600
Existing LOS: D	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 22

Safety Analysis

Total Number of Crashes:	18
Number of Fatal Crashes:	2
Injury & Possible Injury Crashes:	7
Non-Injury Crashes:	9
Equivalent Property Damage Value:	58
Crash Rate:	0.83

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

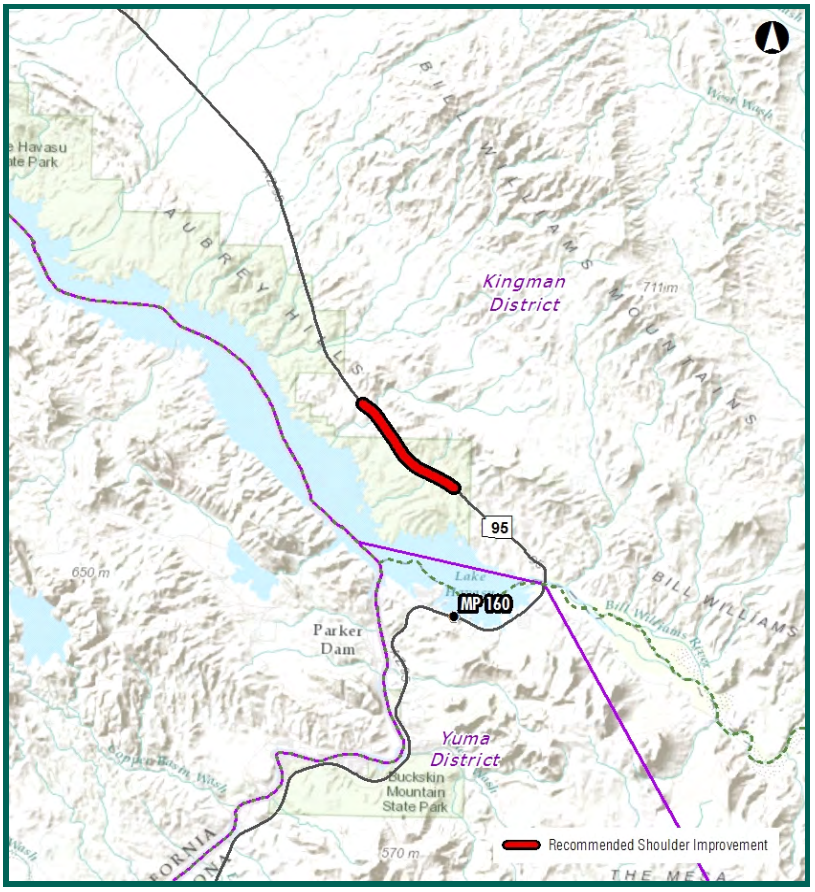
General Location Assessment: Narrow shoulder; Paved portion of shoulders in good condition; Ample room to widen roadway

Cost Estimate: $2,160,000

Environmental Overview

Land Ownership: State Trust Land, Bureau of Land Mgmt.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Lake Havasu SRMA; Suitable Desert Tortoise Habitat



S 095: MP 162 - MP 164 (Both Directions)

Statewide Rank: 3

Project Details

Route: S 095	**Direction:** Both Directions
BMP: 162.0	**Tier Level:** 1
EMP: 164.0	**District Rank:** 2
District: Kingman	**Left Shoulder:** 2 to 6 FT
County: Mohave	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 3.78	**Terrain:** Mountainous
Speed Limit(mph): 65	**K-Factor:** 11
Existing AADT: 5948	**Future AADT:** 6600
Existing LOS: D	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 22

Safety Analysis

Total Number of Crashes:	17
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	7
Non-Injury Crashes:	10
Equivalent Property Damage Value:	42
Crash Rate:	0.78

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

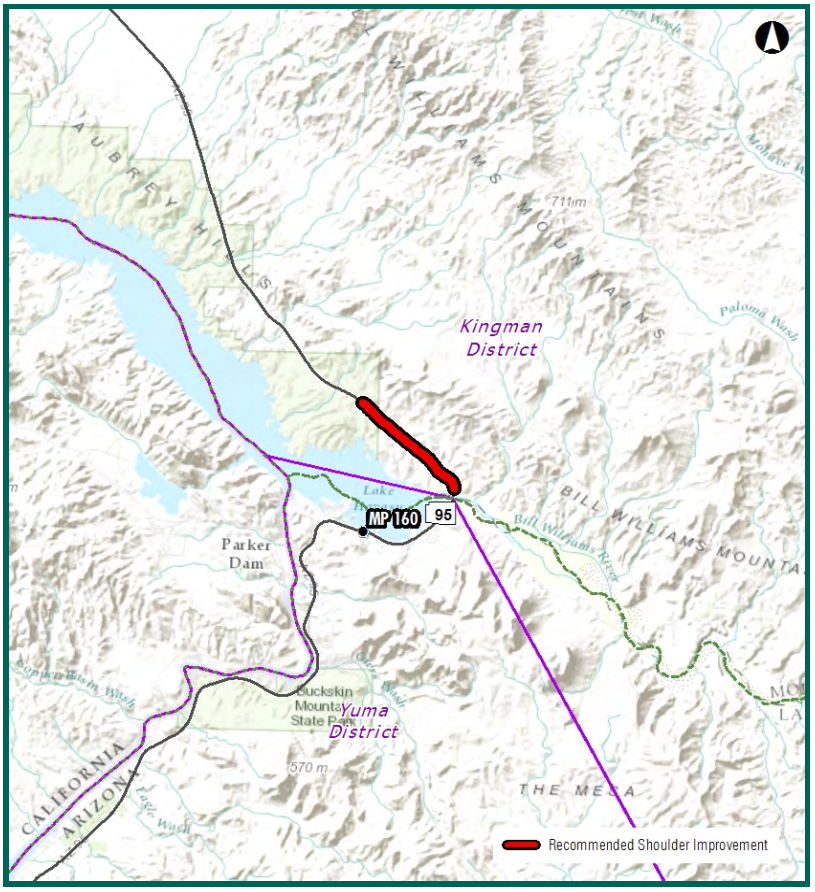
General Location Assessment: Narrow shoulder; Paved portion of shoulders in good condition; Ample room to widen roadway

Cost Estimate: $2,160,000

Environmental Overview

Land Ownership: State Trust Land, Bureau of Land Mgmt.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Lake Havasu SRMA; Suitable Desert Tortoise Habitat; Riparian Habitats; Wetlands;100-Yr Floodplain; Critical Habitat Area



S 095: MP 166 - MP 168 (Both Directions)

Statewide Rank: 4

Project Details

Route: S 095	**Direction:** Both Directions
BMP: 166.0	**Tier Level:** 1
EMP: 168.0	**District Rank:** 3
District: Kingman	**Left Shoulder:** 2 to 6 FT
County: Mohave	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Minor Collector

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 4.19	**Terrain:** Mountainous
Speed Limit(mph): 65	**K-Factor:** 9
Existing AADT: 5948	**Future AADT:** 8800
Existing LOS: D	**Future LOS:** D
Directional Split: 59 / 41	**Truck %:** 22

Safety Analysis

Total Number of Crashes:	10
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	3
Non-Injury Crashes:	7
Equivalent Property Damage Value:	22
Crash Rate:	0.46

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

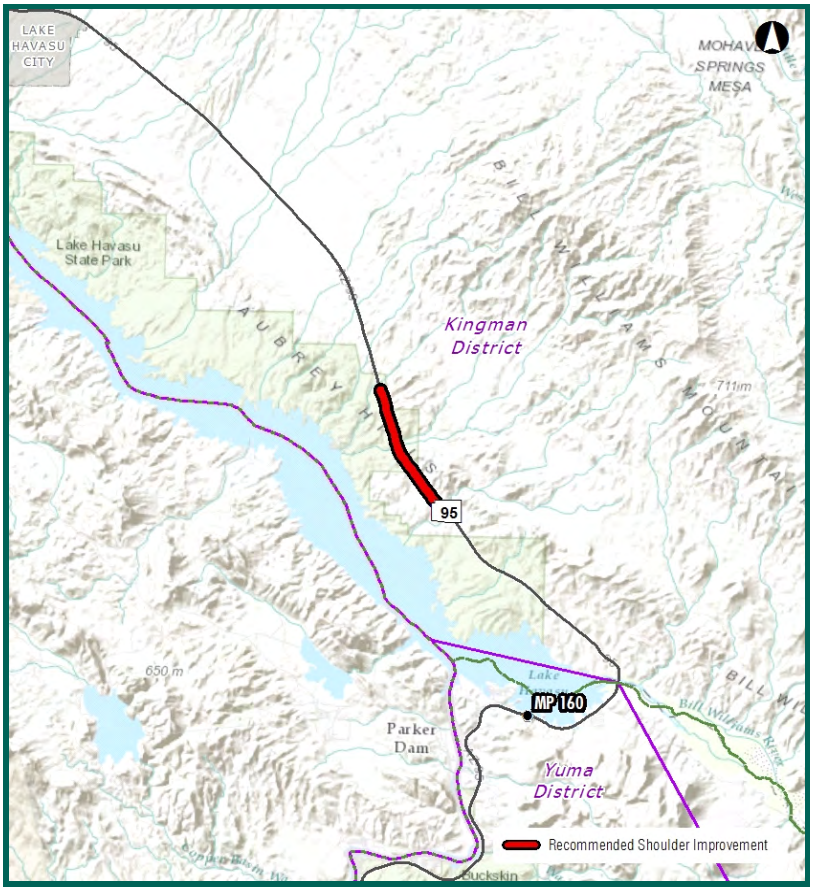
General Location Assessment: Narrow shoulder; Paved portion of shoulders in good condition; Ample room to widen roadway

Cost Estimate: $2,160,000

Environmental Overview

Land Ownership: Bureau of Land Mgmt., Cattail Cove SP, State Trust Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Suitable Desert Tortoise Habitat;100-Yr Floodplain



U 191: MP 160 - MP 162 (Both Directions)

Statewide Rank: 5

Project Details

Route: U 191	**Direction:** Both Directions
BMP: 160.0	**Tier Level:** 1
EMP: 162.0	**District Rank:** 1
District: Safford	**Left Shoulder:** 2 to 6 FT
County: Greenlee	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Major Collector

Wideload Corridor: Yes	**Pullouts:** Yes
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 6.6	**Terrain:** Mountainous
Speed Limit(mph): 55	**K-Factor:** 15
Existing AADT: 6296	**Future AADT:** 5300
Existing LOS: D	**Future LOS:** C
Directional Split: 50 / 50	**Truck %:** 12

Safety Analysis

Total Number of Crashes:	24
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	6
Non-Injury Crashes:	17
Equivalent Property Damage Value:	52
Crash Rate:	1.04

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

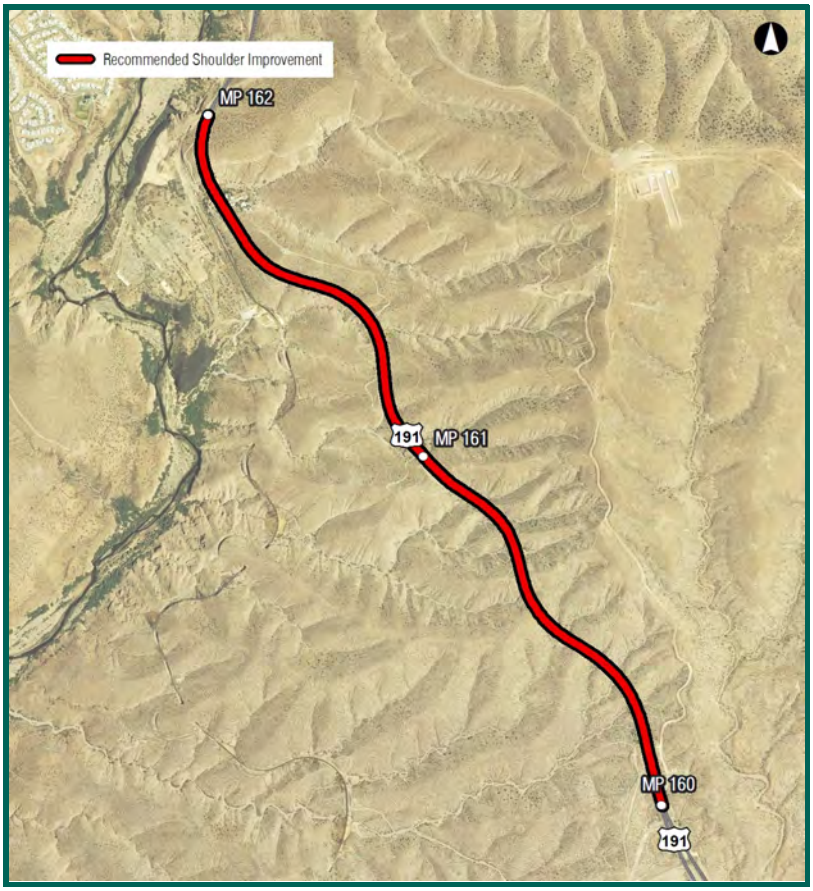
General Location Assessment: Narrow shoulder; Roadside cliffs may limit construction; Paved portion of shoulders in good condition

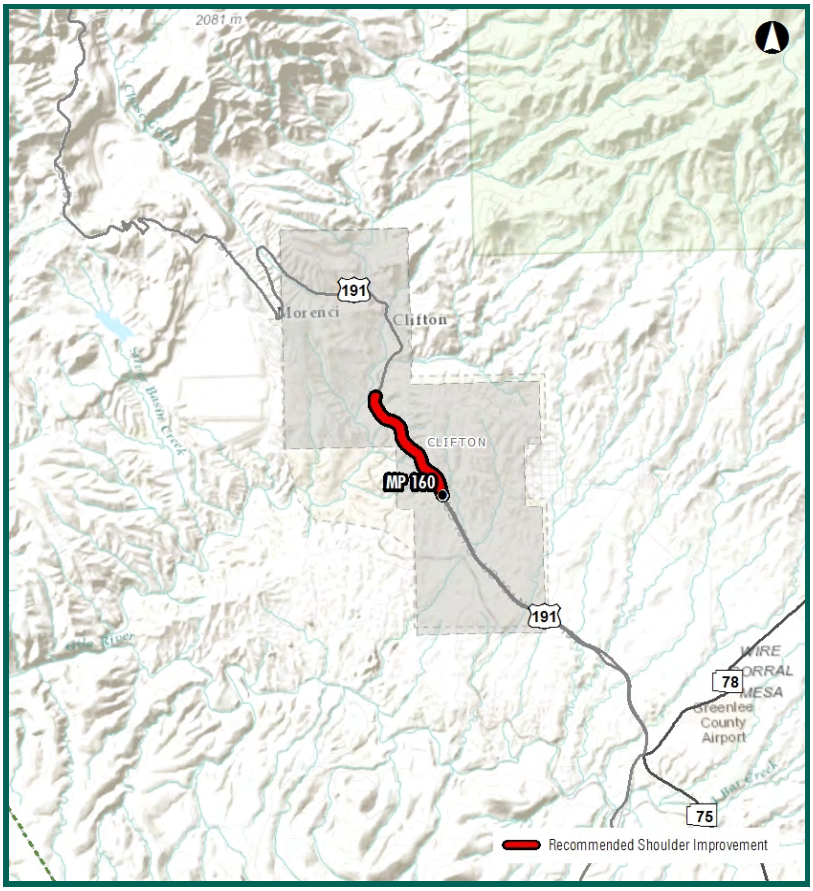
Cost Estimate: $2,160,000

Environmental Overview

Land Ownership: Private Land, State Trust Land, Bureau of Land Mgmt.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Riparian Habitats; Impaired Waters; Wetlands;100-Yr Floodplain





S 064: MP 185.6 - MP 187.2 (Both Directions) — Statewide Rank: 6

Project Details

Route: S 064	**Direction:** Both Directions
BMP: 185.6	**Tier Level:** 1
EMP: 187.2	**District Rank:** 1
District: Flagstaff	**Left Shoulder:** 2 to 6 FT
County: Coconino	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 3.57	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 9
Existing AADT: 7166	**Future AADT:** 6900
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 15

Safety Analysis

Total Number of Crashes:	28
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	6
Non-Injury Crashes:	21
Equivalent Property Damage Value:	60
Crash Rate:	1.32

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

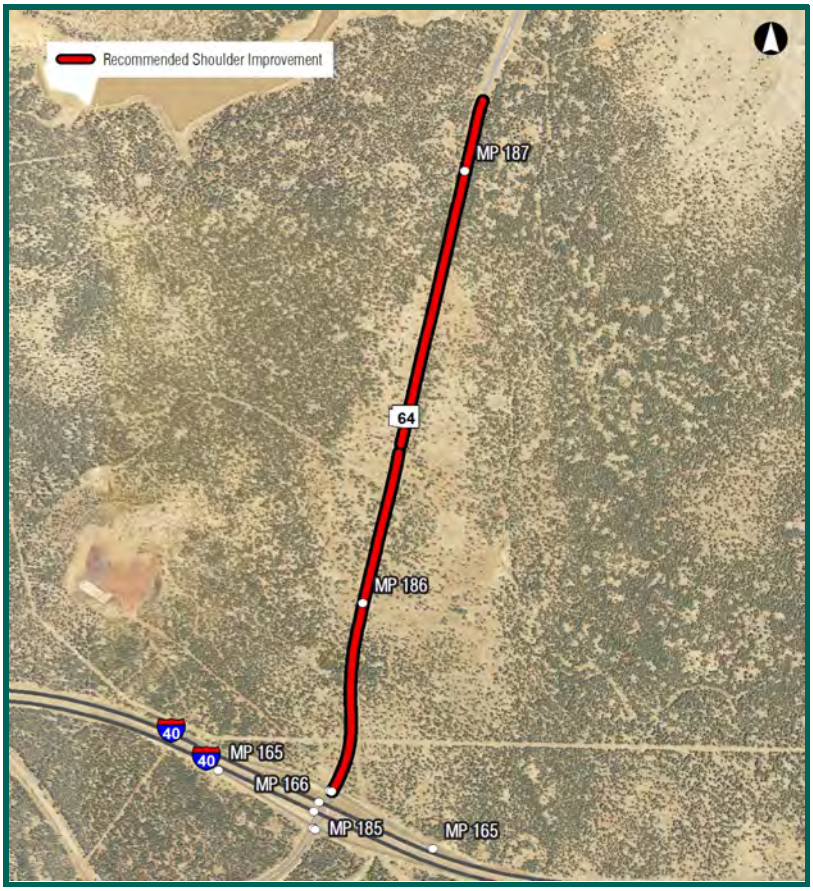
General Location Assessment: Ample room to widen roadway; multiple intersecting roadways; Paved shoulders in good condition; Segment has I-40 underpass with wide shoulders

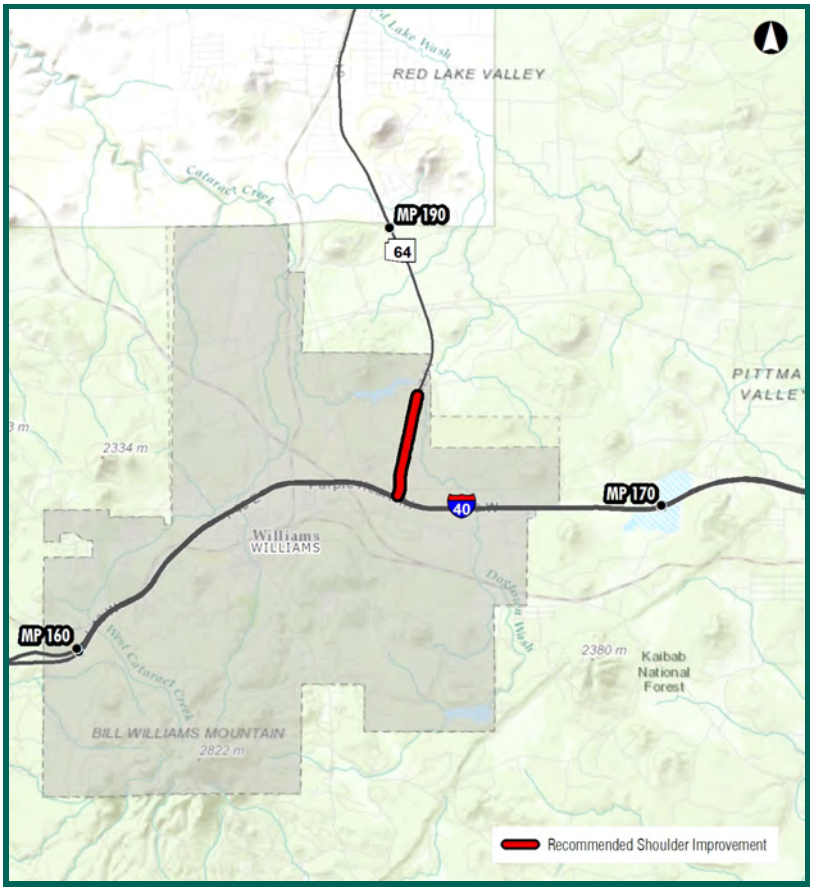
Cost Estimate: $1,458,000

Environmental Overview

Land Ownership: Kaibab N.F

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints





S 095: MP 132 - MP 134 (Both Directions)

Statewide Rank: 7

Project Details

Route: S 095	**Direction:** Both Directions
BMP: 132.0	**Tier Level:** 1
EMP: 134.0	**District Rank:** 2
District: Yuma	**Left Shoulder:** 2 to 6 FT
County: La Paz	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 2.22	**Terrain:** Level
Speed Limit(mph): 55	**K-Factor:** 15
Existing AADT: 5062	**Future AADT:** 6900
Existing LOS: D	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 16

Safety Analysis

Total Number of Crashes:	6
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	1
Non-Injury Crashes:	5
Equivalent Property Damage Value:	7
Crash Rate:	0.32

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

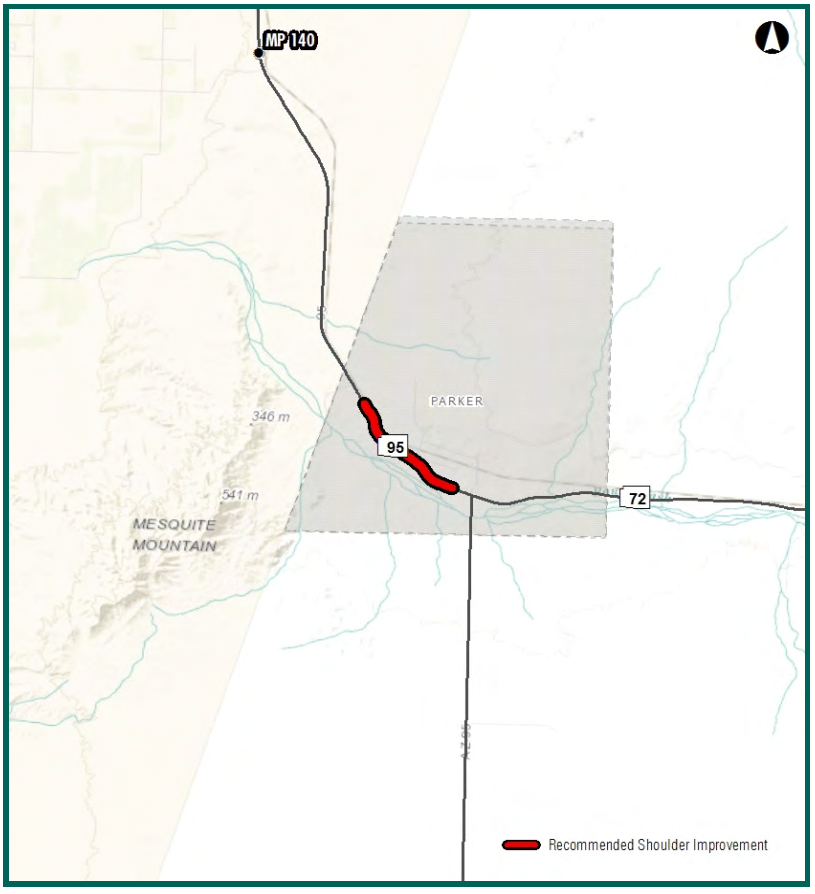
General Location Assessment: Paved portion of shoulders in good condition; Unpaved clear zone adjacent to shoulder; Ample room to widen roadway; Multiple intersecting roadways

Cost Estimate: $1,800,000

Environmental Overview

Land Ownership: Private Land, State Trust Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone;100-Yr Floodplain



S 264: MP 458 - MP 460 (Both Directions)

Statewide Rank: 8

Project Details

Route: S 264	**Direction:** Both Directions
BMP: 458.0	**Tier Level:** 1
EMP: 460.0	**District Rank:** 1
District: Holbrook	**Left Shoulder:** Less than 2 FT
County: Apache	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 5.96	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 10
Existing AADT: 5094	**Future AADT:** 5500
Existing LOS: D	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 22

Safety Analysis

Total Number of Crashes:	3
Number of Fatal Crashes:	2
Injury & Possible Injury Crashes:	0
Non-Injury Crashes:	1
Equivalent Property Damage Value:	25
Crash Rate:	0.16

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

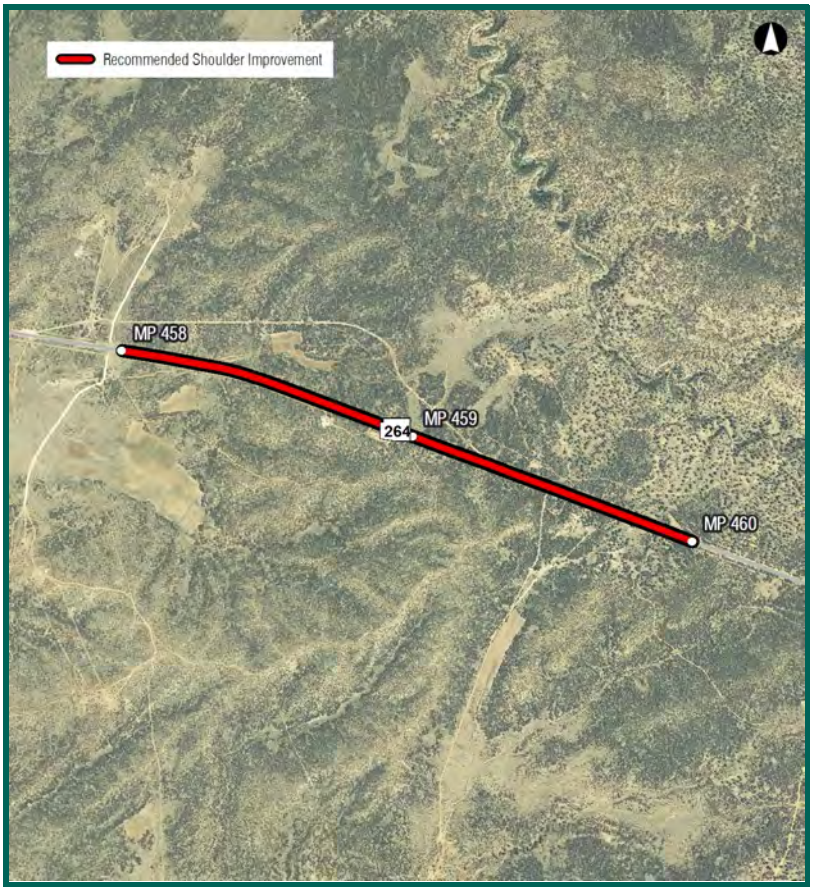
General Location Assessment: No shoulder; Ample room to widen roadway

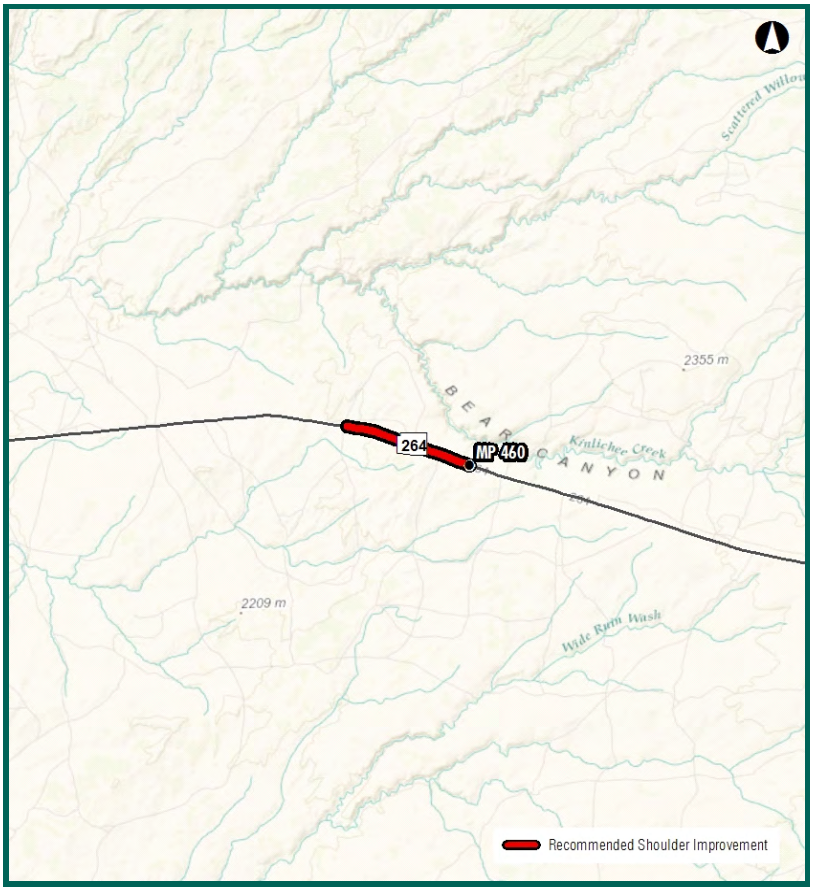
Cost Estimate: $3,465,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints





S 264: MP 456 - MP 458 (Both Directions)

Statewide Rank: 9

Project Details

Route: S 264	**Direction:** Both Directions
BMP: 456.0	**Tier Level:** 1
EMP: 458.0	**District Rank:** 2
District: Holbrook	**Left Shoulder:** Less than 2 FT
County: Apache	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 4.49	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 10
Existing AADT: 5094	**Future AADT:** 5500
Existing LOS: D	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 22

Safety Analysis

Total Number of Crashes:	4
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	3
Non-Injury Crashes:	1
Equivalent Property Damage Value:	7
Crash Rate:	0.22

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

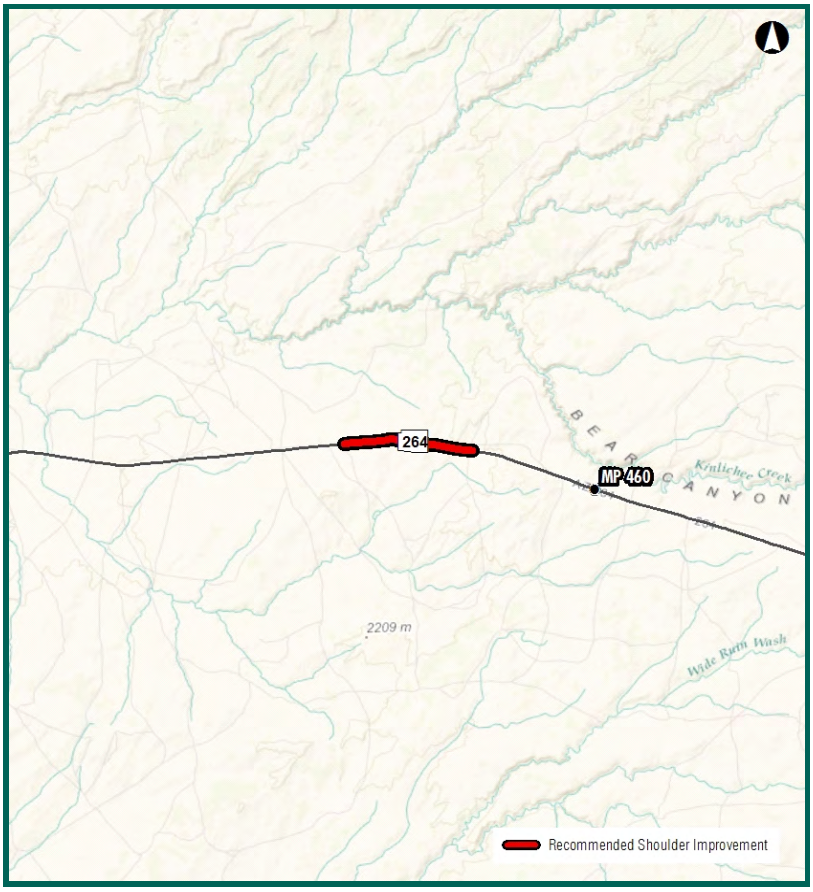
General Location Assessment: No shoulder; Ample room to widen roadway

Cost Estimate: $3,465,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints



S 095: MP 138 - MP 140.5 (Northbound)

Statewide Rank: 10

Project Details

Route: S 095	**Direction:** Northbound
BMP: 138.0	**Tier Level:** 1
EMP: 140.5	**District Rank:** 3
District: Yuma	**Left Shoulder:** 2 to 6 FT
County: La Paz	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 3.3	**Terrain:** Rolling
Speed Limit(mph): 55	**K-Factor:** 15
Existing AADT: 5062	**Future AADT:** 6900
Existing LOS: D	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 16

Safety Analysis

Total Number of Crashes:	7
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	3
Non-Injury Crashes:	4
Equivalent Property Damage Value:	14
Crash Rate:	0.3

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

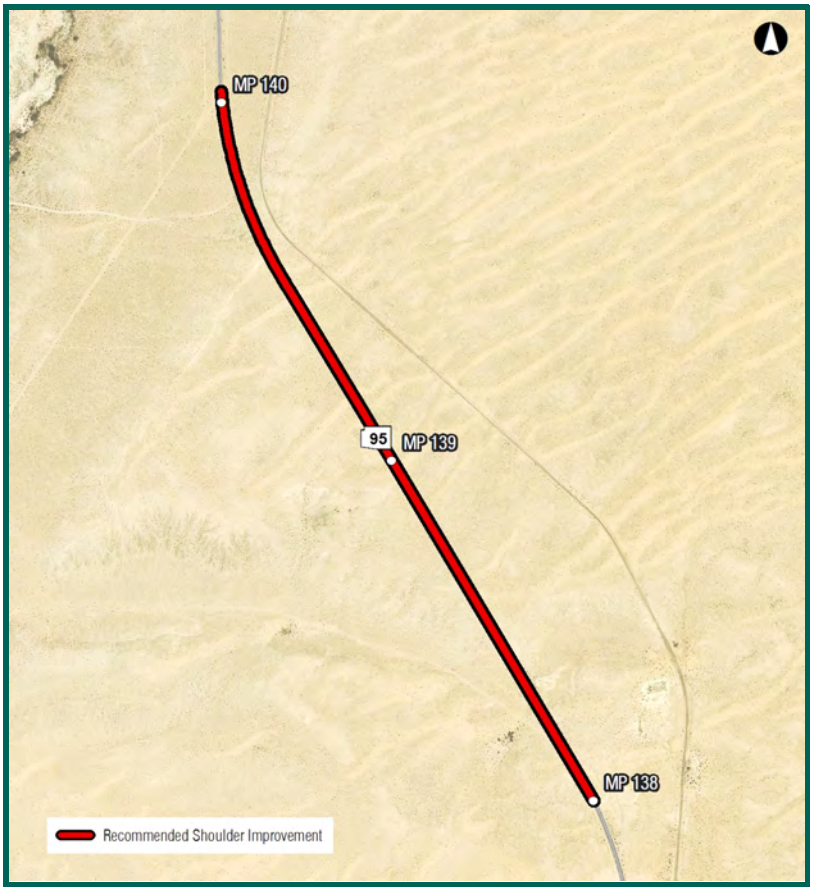
General Location Assessment: Paved shoulders in good condition; Unpaved clear zone adjacent to shoulder, Ample room to widen roadway

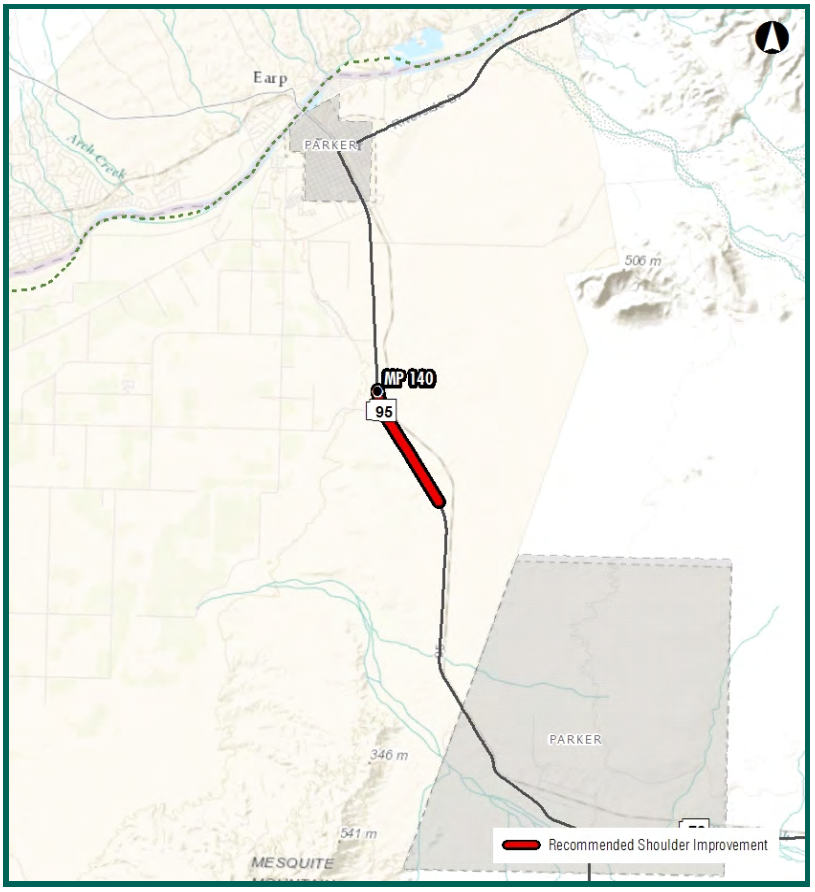
Cost Estimate: $1,237,500

Environmental Overview

Land Ownership: Private Land, State Trust Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone





S 264: MP 460 - MP 462 (Both Directions)

Statewide Rank: 11

Project Details

Route: S 264	**Direction:** Both Directions
BMP: 460.0	**Tier Level:** 1
EMP: 462.0	**District Rank:** 3
District: Holbrook	**Left Shoulder:** Less than 2 FT
County: Apache	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 4.91	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 10
Existing AADT: 5094	**Future AADT:** 5500
Existing LOS: C	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 22

Safety Analysis

Total Number of Crashes:	4
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	1
Non-Injury Crashes:	2
Equivalent Property Damage Value:	16
Crash Rate:	0.22

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

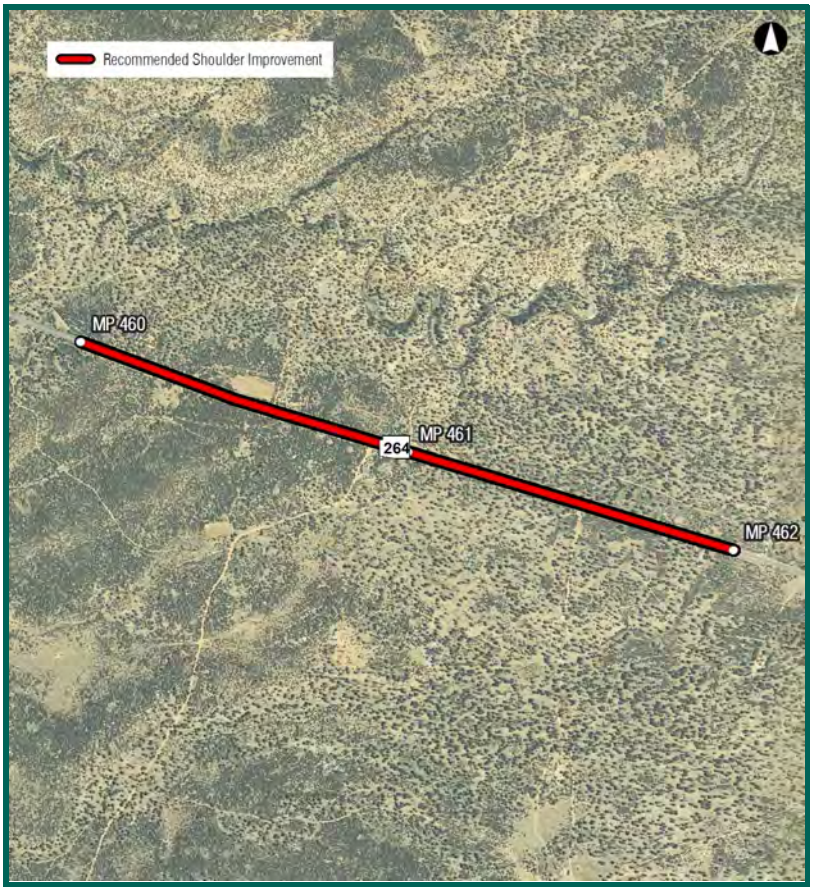
General Location Assessment: No shoulder; Ample room to widen roadway; Multiple intersecting roadways

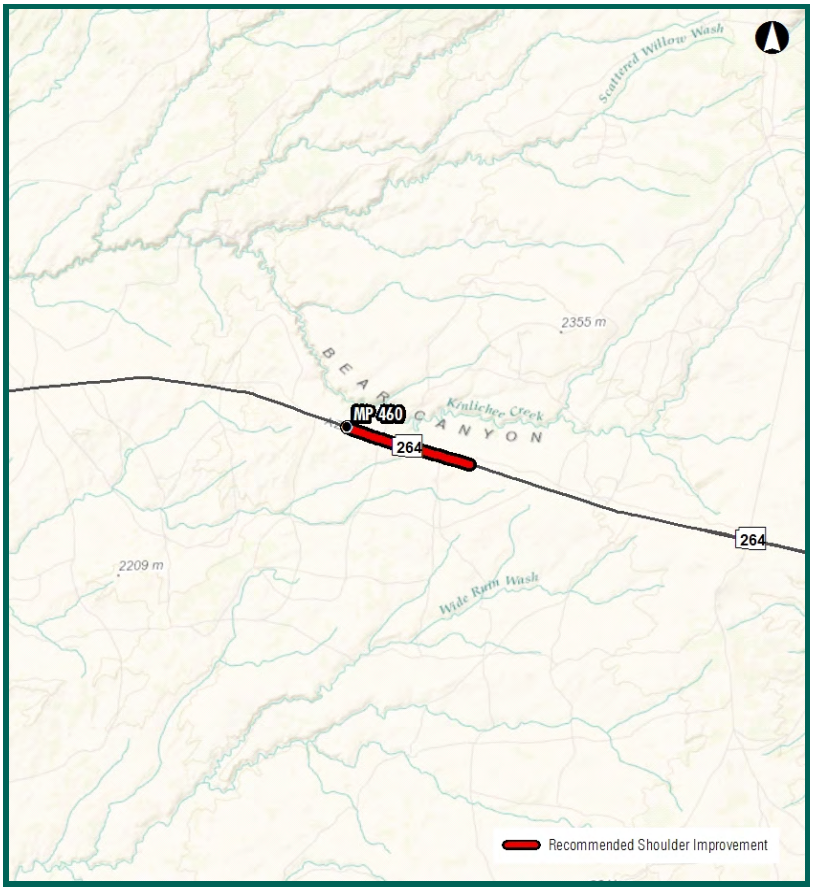
Cost Estimate: $3,465,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints





U 095: MP 44 - MP 46 (Both Directions)

Statewide Rank: 12

Project Details

Route: U 095	**Direction:** Both Directions
BMP: 44.0	**Tier Level:** 1
EMP: 46.0	**District Rank:** 4
District: Yuma	**Left Shoulder:** 2 to 6 FT
County: Yuma	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 1.14	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 14
Existing AADT: 7880	**Future AADT:** 8600
Existing LOS: D	**Future LOS:** D
Directional Split: 50 / 50	**Truck %:** 17

Safety Analysis

Total Number of Crashes:	11
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	3
Non-Injury Crashes:	8
Equivalent Property Damage Value:	23
Crash Rate:	0.38

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

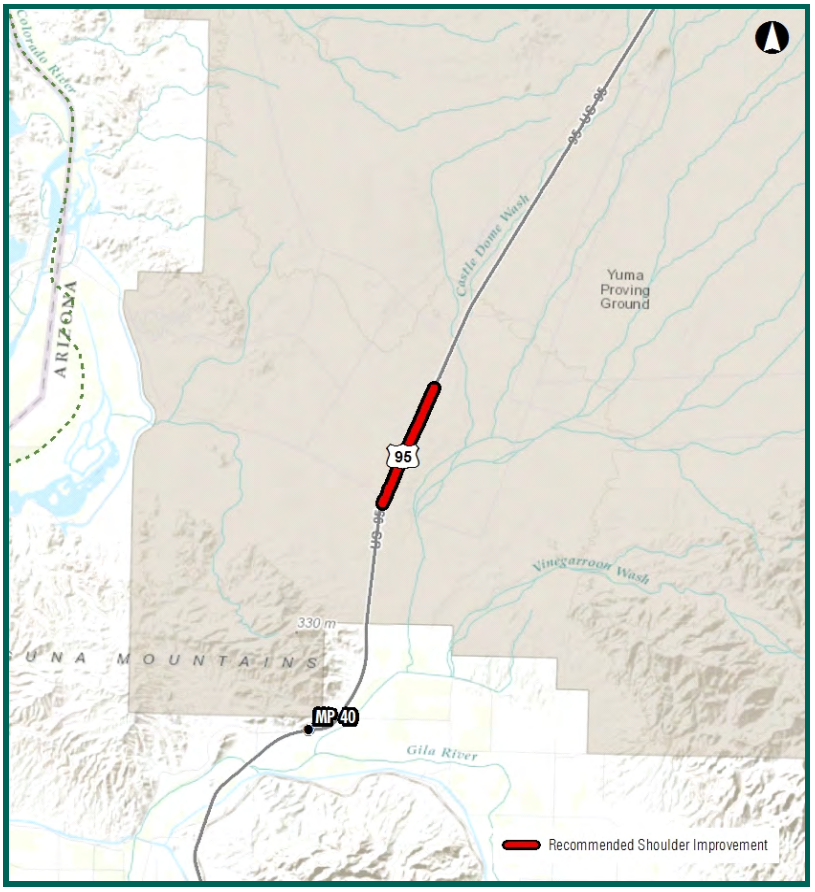
General Location Assessment: Ample room to widen roadway; Paved shoulders in good condition

Cost Estimate: $1,800,000

Environmental Overview

Land Ownership: Yuma Test Range

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Superfund site; PM10 Nonattainment Area



S 264: MP 464 - MP 465.7 (Both Directions)

Statewide Rank: 13

Project Details

Route: S 264	**Direction:** Both Directions
BMP: 464.0	**Tier Level:** 1
EMP: 465.7	**District Rank:** 4
District: Holbrook	**Left Shoulder:** Less than 2 FT
County: Apache	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 2.33	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 10
Existing AADT: 5094	**Future AADT:** 5500
Existing LOS: D	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 22

Safety Analysis

Total Number of Crashes:	1
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	1
Non-Injury Crashes:	0
Equivalent Property Damage Value:	4
Crash Rate:	0.06

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

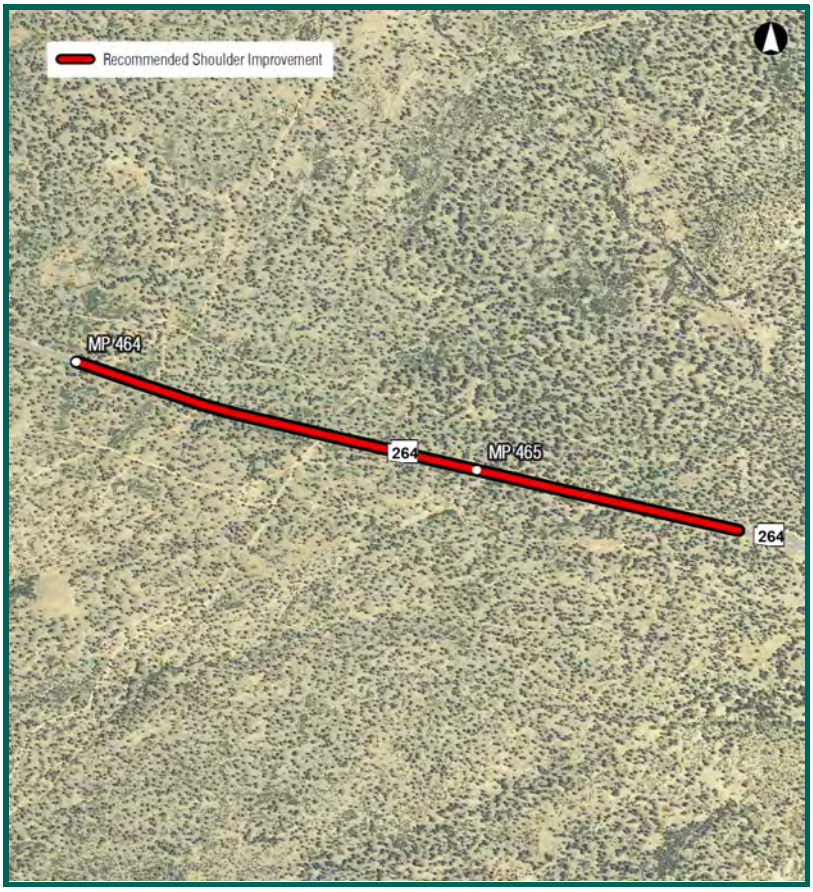
General Location Assessment: No shoulder; Ample room to widen roadway; Multiple intersecting roadways

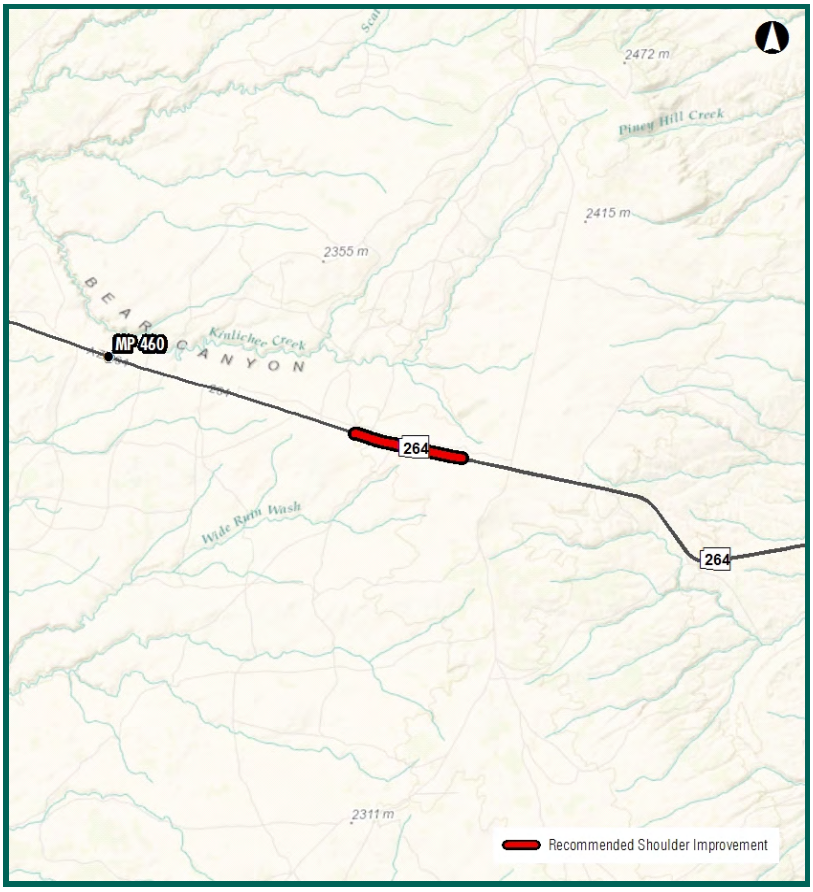
Cost Estimate: $2,945,250

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints





S 264: MP 454 - MP 456 (Both Directions)

Statewide Rank: 14

Project Details

Route: S 264	**Direction:** Both Directions
BMP: 454.0	**Tier Level:** 1
EMP: 456.0	**District Rank:** 5
District: Holbrook	**Left Shoulder:** Less than 2 FT
County: Apache	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial	
Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 3.25	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 10
Existing AADT: 5094	**Future AADT:** 5500
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 22

Safety Analysis

Total Number of Crashes:	6
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	2
Non-Injury Crashes:	3
Equivalent Property Damage Value:	19
Crash Rate:	0.32

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

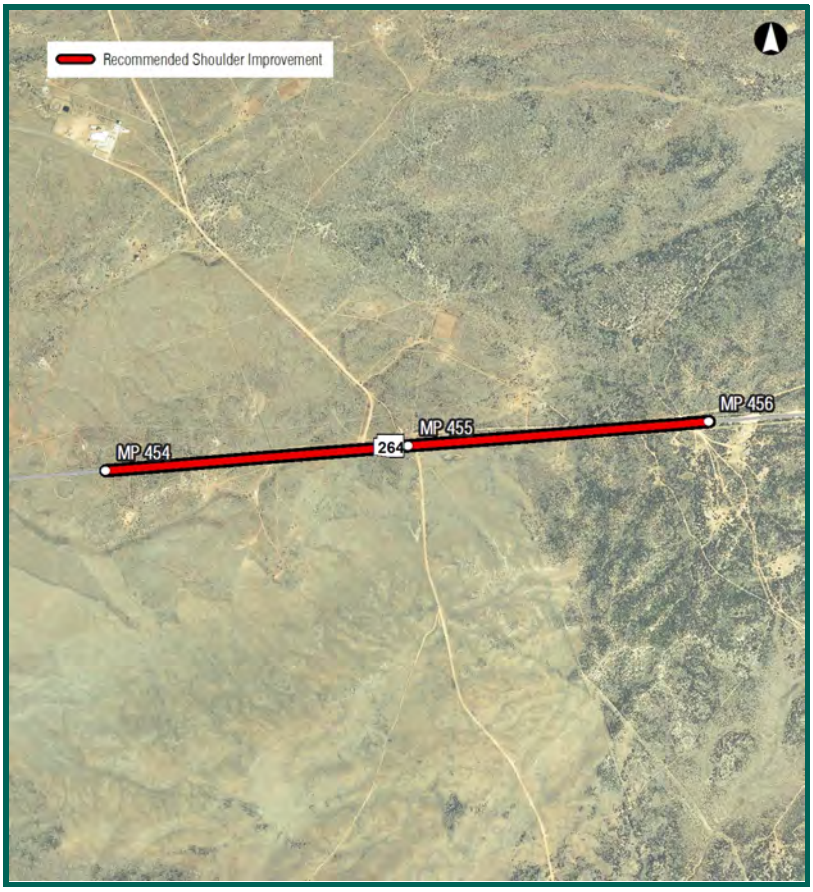
General Location Assessment: No shoulder; Ample room to widen roadway; Multiple intersecting roadways

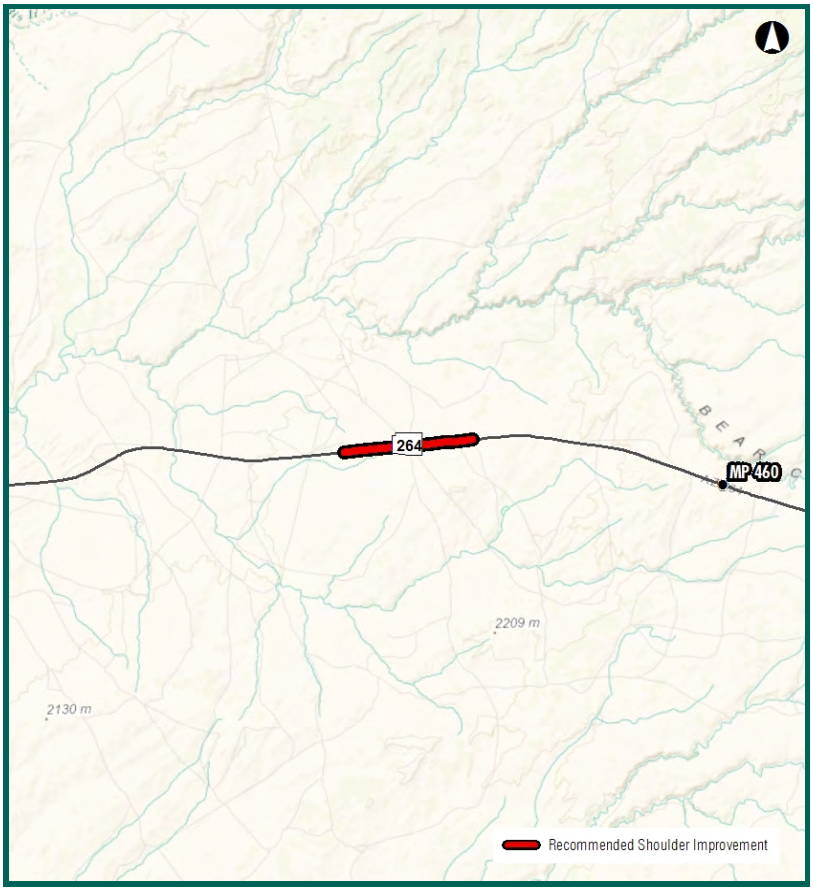
Cost Estimate: $3,465,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints





S 264: MP 462 - MP 464 (Both Directions)

Statewide Rank: 15

Project Details

Route: S 264	**Direction:** Both Directions
BMP: 462.0	**Tier Level:** 1
EMP: 464.0	**District Rank:** 6
District: Holbrook	**Left Shoulder:** Less than 2 FT
County: Apache	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 2.16	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 10
Existing AADT: 5094	**Future AADT:** 5500
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 22

Safety Analysis

Total Number of Crashes:	3
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	0
Non-Injury Crashes:	2
Equivalent Property Damage Value:	14
Crash Rate:	0.16

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

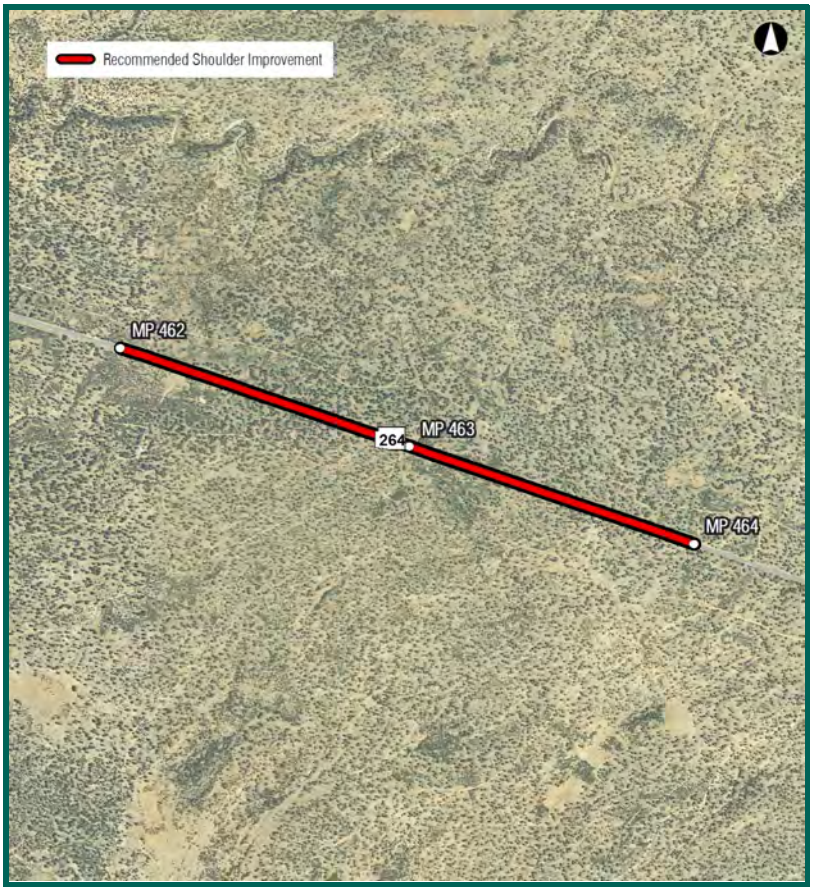
General Location Assessment: Unpaved shoulder; Ample room to widen roadway; Multiple intersecting roadways

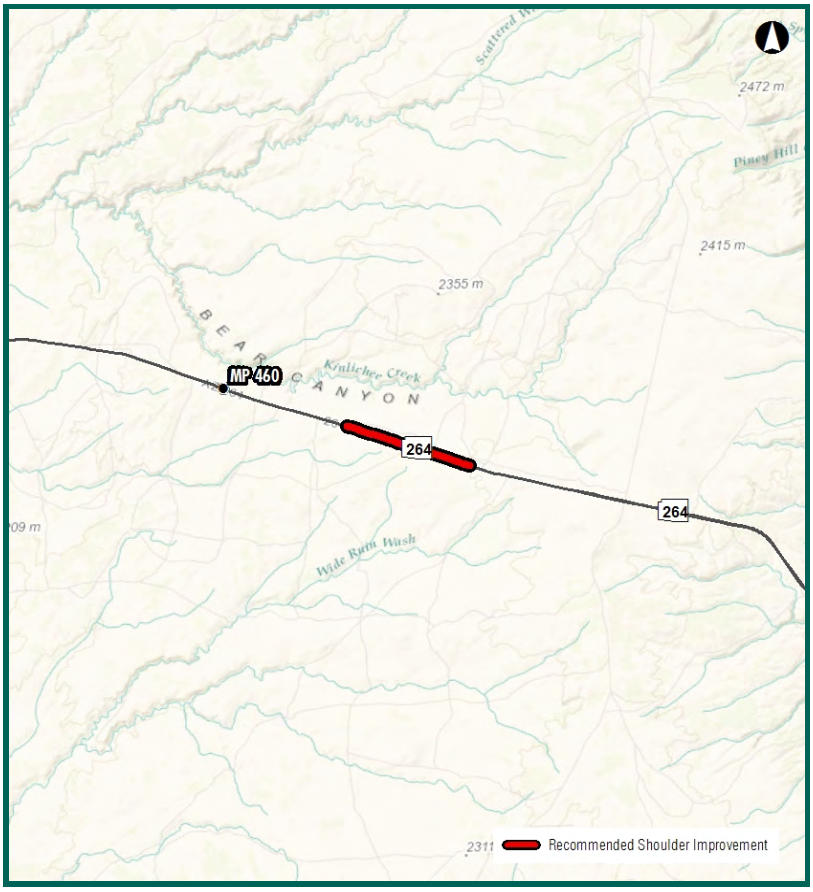
Cost Estimate: $3,465,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints





S 264: MP 452 - MP 454 (Both Directions)

Statewide Rank: 16

Project Details

Route: S 264	**Direction:** Both Directions
BMP: 452.0	**Tier Level:** 1
EMP: 454.0	**District Rank:** 7
District: Holbrook	**Left Shoulder:** Less than 2 FT
County: Apache	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial	
Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 2.98	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 10
Existing AADT: 5094	**Future AADT:** 5500
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 22

Safety Analysis

Total Number of Crashes:	1
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	1
Non-Injury Crashes:	0
Equivalent Property Damage Value:	7
Crash Rate:	0.05

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

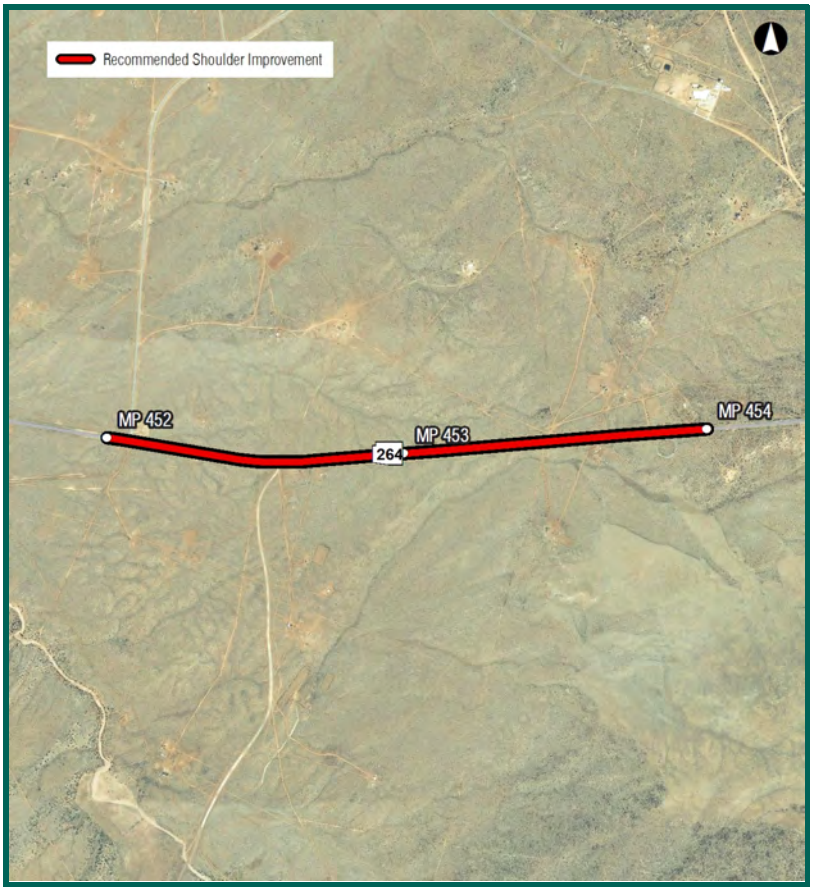
General Location Assessment: Ample room to widen roadway; Unpaved shoulder; Multiple intersecting roadways

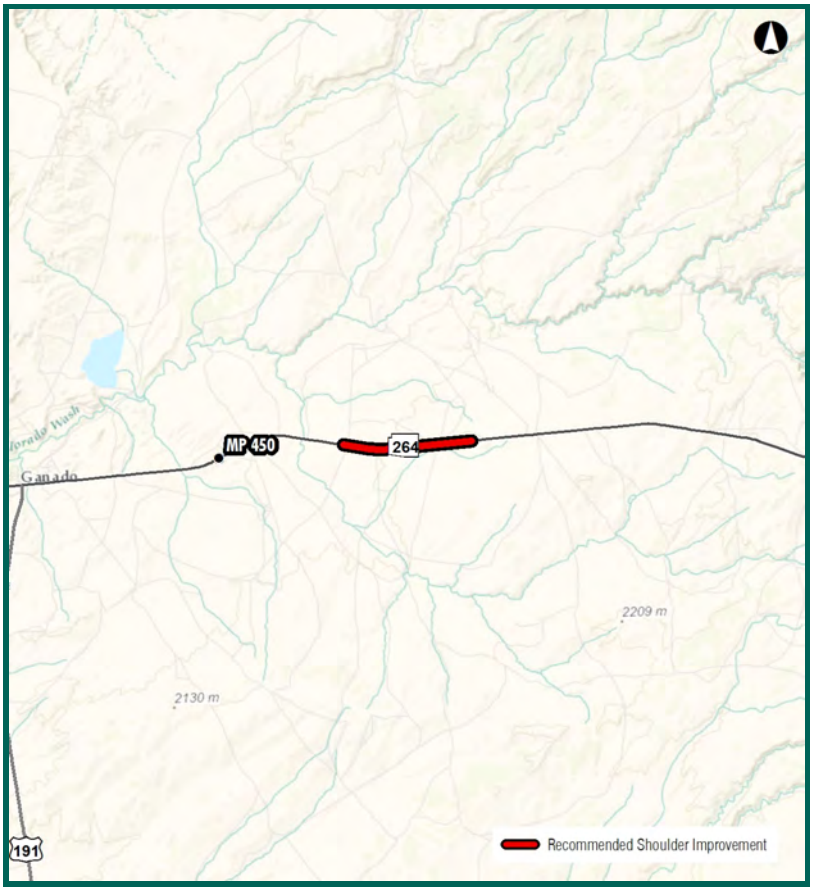
Cost Estimate: $3,465,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints





S 264: MP 442 - MP 444 (Both Directions)

Statewide Rank: 17

Project Details

Route: S 264	**Direction:** Both Directions
BMP: 442.0	**Tier Level:** 1
EMP: 444.0	**District Rank:** 8
District: Holbrook	**Left Shoulder:** Less than 2 FT
County: Apache	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 4.24	**Terrain:** Rolling
Speed Limit(mph): 55	**K-Factor:** 10
Existing AADT: 6223	**Future AADT:** 5700
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 7

Safety Analysis

Total Number of Crashes:	0
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	0
Non-Injury Crashes:	0
Equivalent Property Damage Value:	0
Crash Rate:	0

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

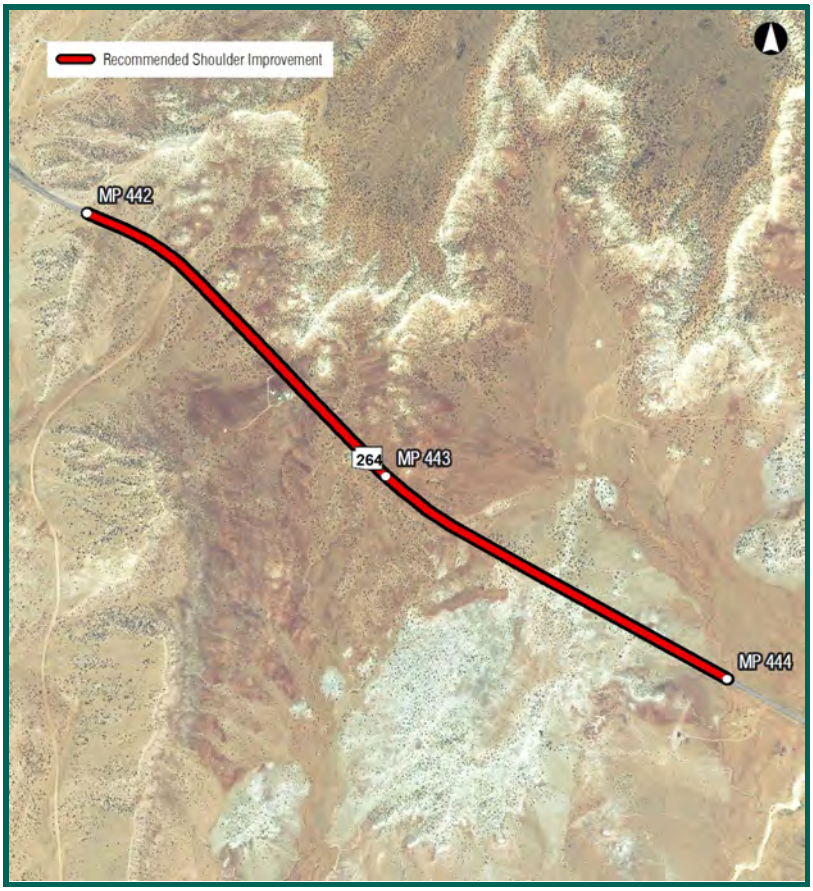
General Location Assessment: No shoulder; Ample room to widen roadway; Multiple intersecting roadways

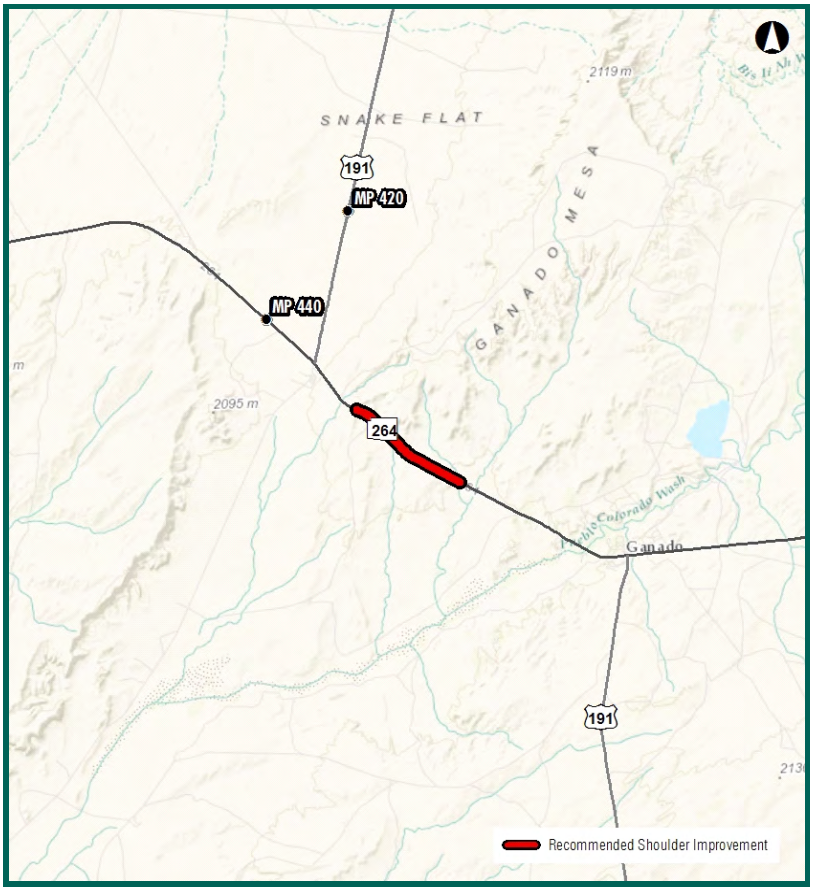
Cost Estimate: $3,465,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints





U 060: MP 236.2 - MP 238 (Both Directions)

Statewide Rank: 18

Project Details

Route: U 060	**Direction:** Both Directions
BMP: 236.2	**Tier Level:** 1
EMP: 238.0	**District Rank:** 1
District: Globe	**Left Shoulder:** Less than 2 FT
County: Gila	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 5.88	**Terrain:** Mountainous
Speed Limit(mph): 55	**K-Factor:** 8
Existing AADT: 7335	**Future AADT:** 8200
Existing LOS: C	**Future LOS:** C
Directional Split: 51 / 49	**Truck %:** 11

Safety Analysis

Total Number of Crashes:	52
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	18
Non-Injury Crashes:	34
Equivalent Property Damage Value:	99
Crash Rate:	2.12

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

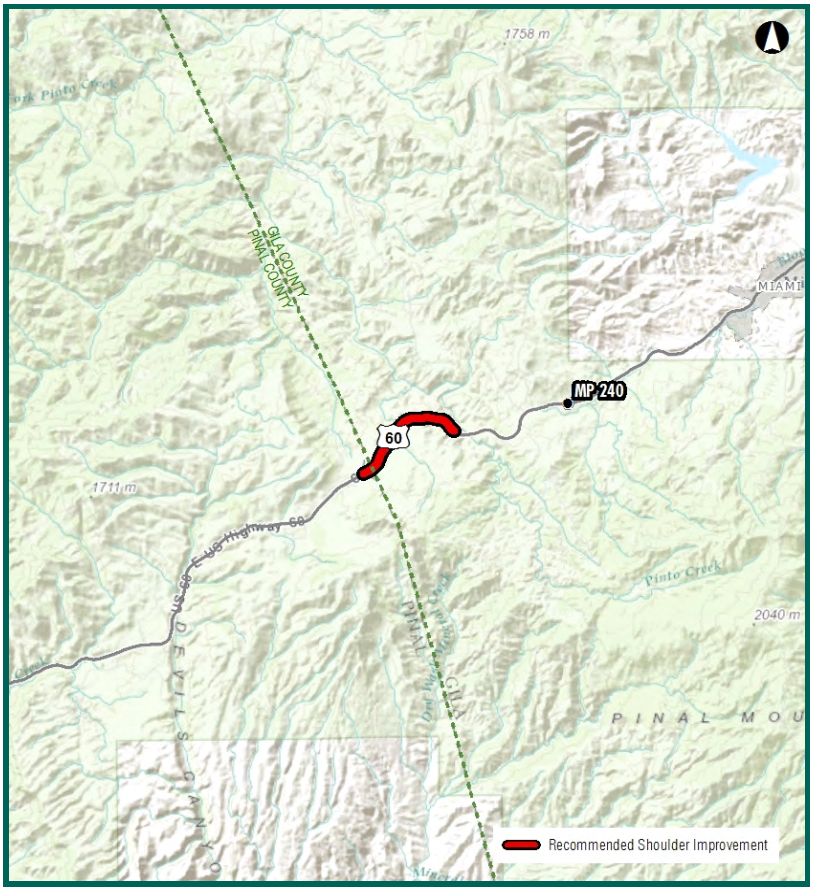
General Location Assessment: No shoulder; Roadside slopes may limit construction

Cost Estimate: $3,527,992

Environmental Overview

Land Ownership: Tonto N.F, Private Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Impaired Waters; Wetlands; PM10 Nonattainment Area



U 060: MP 238 - MP 240 (Both Directions)

Statewide Rank: 19

Project Details

Route: U 060	**Direction:** Both Directions
BMP: 238.0	**Tier Level:** 1
EMP: 240.0	**District Rank:** 2
District: Globe	**Left Shoulder:** 2 to 6 FT
County: Gila	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** Yes
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 6.05	**Terrain:** Mountainous
Speed Limit(mph): 55	**K-Factor:** 8
Existing AADT: 7335	**Future AADT:** 8200
Existing LOS: C	**Future LOS:** C
Directional Split: 51 / 49	**Truck %:** 11

Safety Analysis

Total Number of Crashes:	39
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	11
Non-Injury Crashes:	27
Equivalent Property Damage Value:	86
Crash Rate:	1.46

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

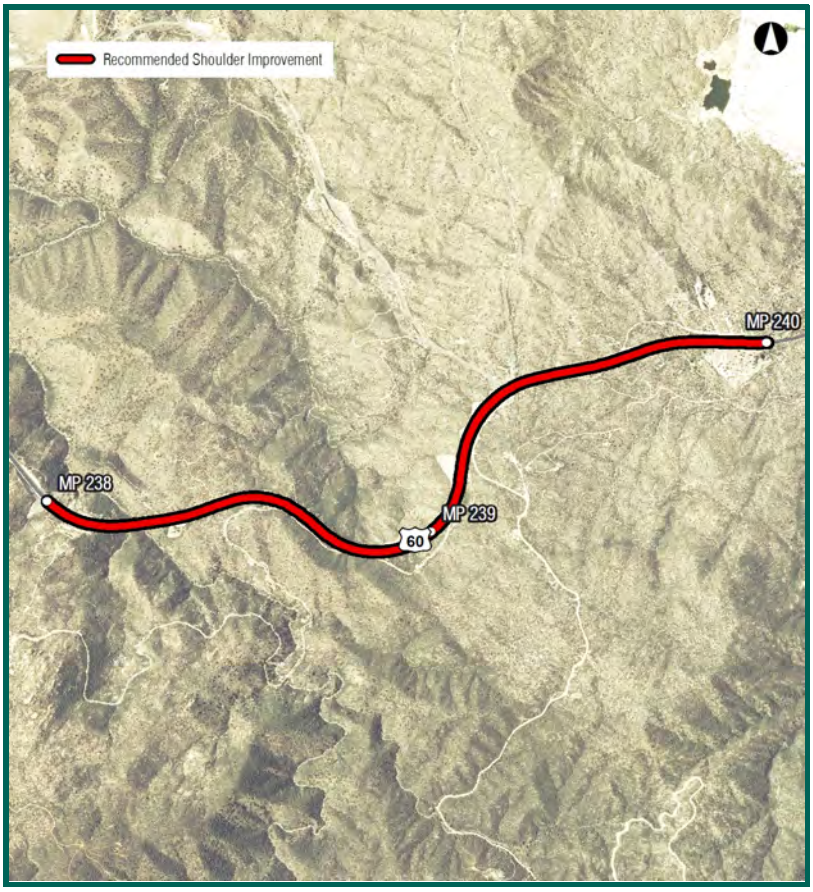
General Location Assessment: Bridges on segment require widening; Roadside slopes may limit construction; Paved shoulders in good condition

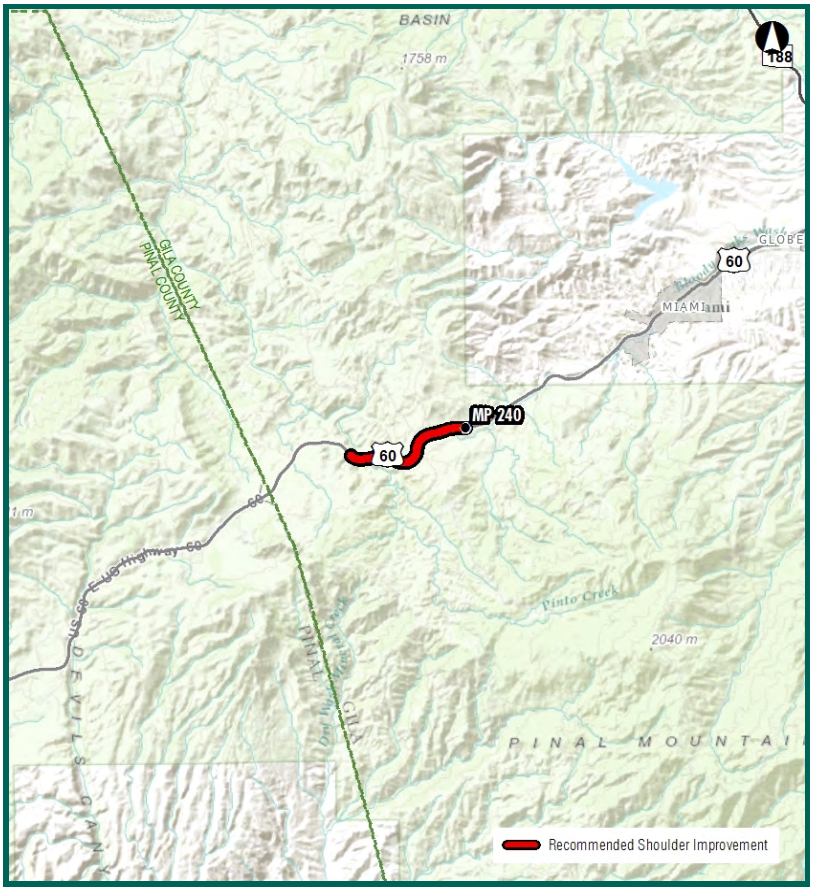
Cost Estimate: $3,433,622

Environmental Overview

Land Ownership: Tonto N.F, Private Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Impaired Waters; Wetlands; PM10 Nonattainment Area





S 095: MP 140.7 - MP 142.3 (Northbound)

Statewide Rank: 20

Project Details

Route: S 095	**Direction:** Northbound
BMP: 140.7	**Tier Level:** 1
EMP: 142.3	**District Rank:** 5
District: Yuma	**Left Shoulder:** 2 to 6 FT
County: La Paz	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 3.07	**Terrain:** Rolling
Speed Limit(mph): 55	**K-Factor:** 10
Existing AADT: 7453	**Future AADT:** 7000
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 12

Safety Analysis

Total Number of Crashes:	3
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	0
Non-Injury Crashes:	3
Equivalent Property Damage Value:	3
Crash Rate:	0.14

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

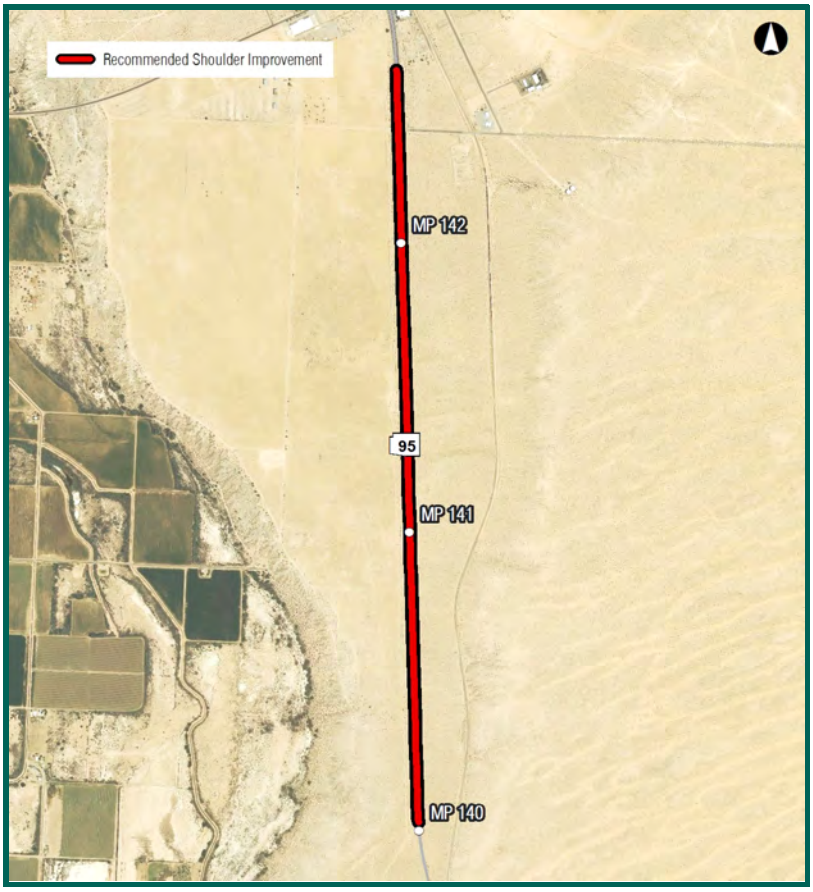
General Location Assessment: Unpaved shoulder; Ample room to widen roadway

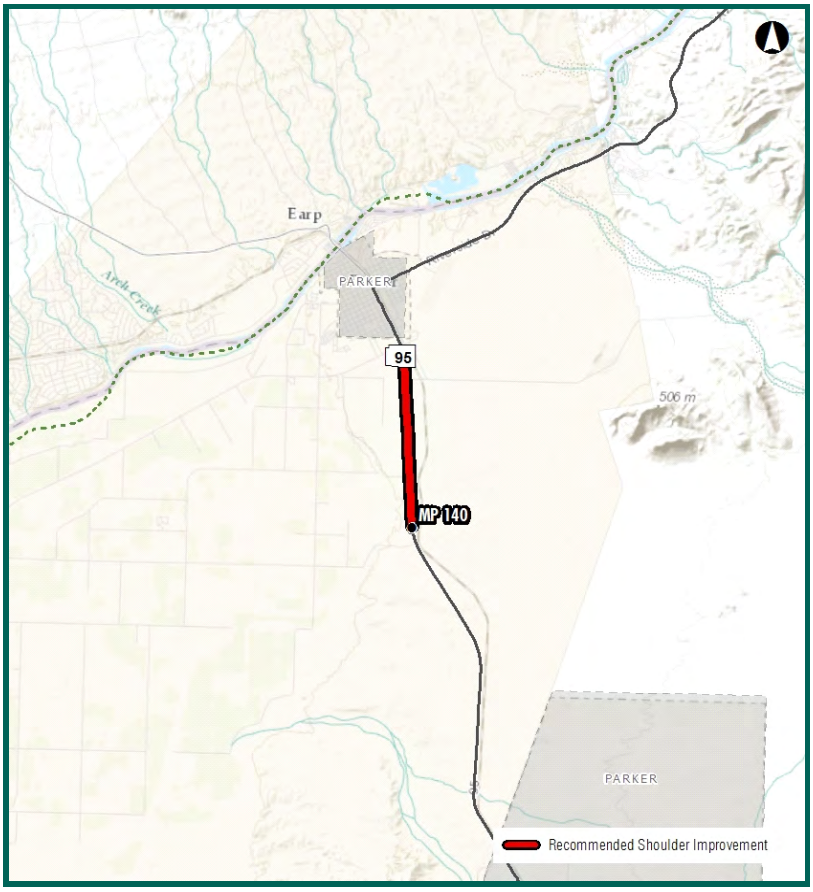
Cost Estimate: $782,100

Environmental Overview

Land Ownership: Prescott N.F, Private Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints





U 095: MP 42 - MP 44 (Both Directions)

Statewide Rank: 21

Project Details

Route: U 095	**Direction:** Both Directions
BMP: 42.0	**Tier Level:** 1
EMP: 44.0	**District Rank:** 6
District: Yuma	**Left Shoulder:** 2 to 6 FT
County: Yuma	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 1.98	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 14
Existing AADT: 7880	**Future AADT:** 8600
Existing LOS: D	**Future LOS:** D
Directional Split: 50 / 50	**Truck %:** 17

Safety Analysis

Total Number of Crashes:	9
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	2
Non-Injury Crashes:	6
Equivalent Property Damage Value:	29
Crash Rate:	0.31

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

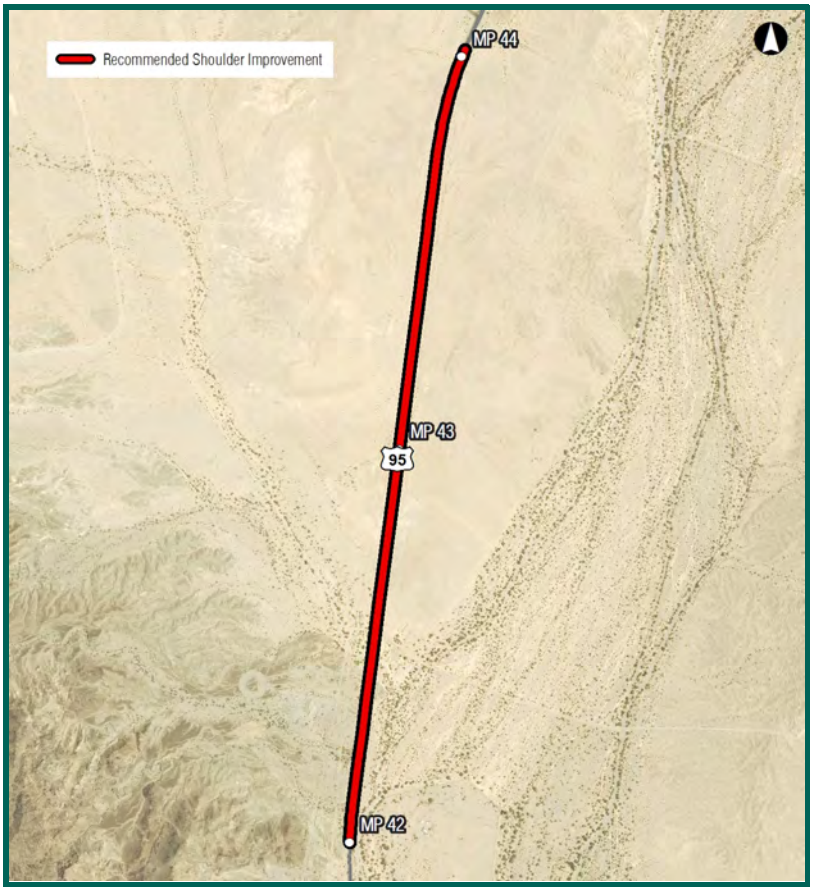
General Location Assessment: Narrow shoulders; Paved shoulders in good condition; Ample room to widen roadway

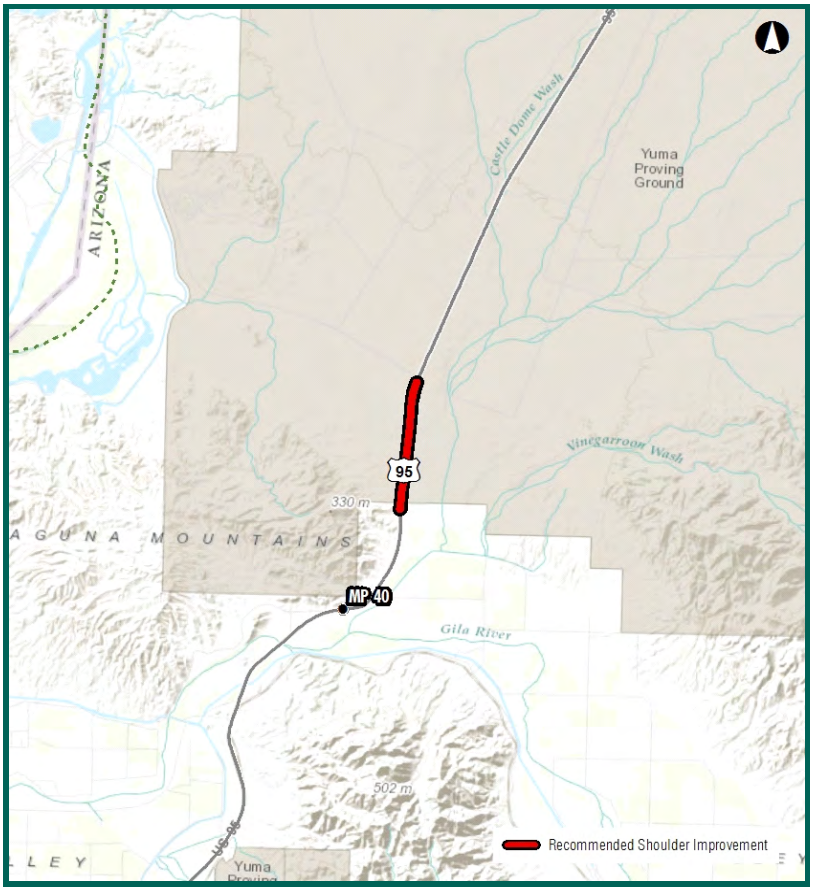
Cost Estimate: $1,876,378

Environmental Overview

Land Ownership: Yuma Test Range

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Greater Yuma Dstination SRMA; Wildlife Linkage Zone;100-Yr Floodplain; Superfund site; PM10 Nonattainment Area





U 060: MP 350 - MP 352.8 (Both Directions)

Statewide Rank: 22

Project Details

Route:	U 060	**Direction:**	Both Directions
BMP:	350.0	**Tier Level:**	1
EMP:	352.8	**District Rank:**	3
District:	Globe	**Left Shoulder:**	2 to 6 FT
County:	Apache/Nava	**Right Shoulder:**	2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor:	Yes	**Pullouts:**	No
Ped/Bike Corridor:	Yes	**Guardrail:**	No
Terrain/Max Slope:	2.73	**Terrain:**	Rolling
Speed Limit(mph):	65	**K-Factor:**	8
Existing AADT:	5215	**Future AADT:**	8300
Existing LOS:	C	**Future LOS:**	C
Directional Split:	50 / 50	**Truck %:**	10

Safety Analysis

Total Number of Crashes:	43
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	11
Non-Injury Crashes:	31
Equivalent Property Damage Value:	86
Crash Rate:	1.61

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

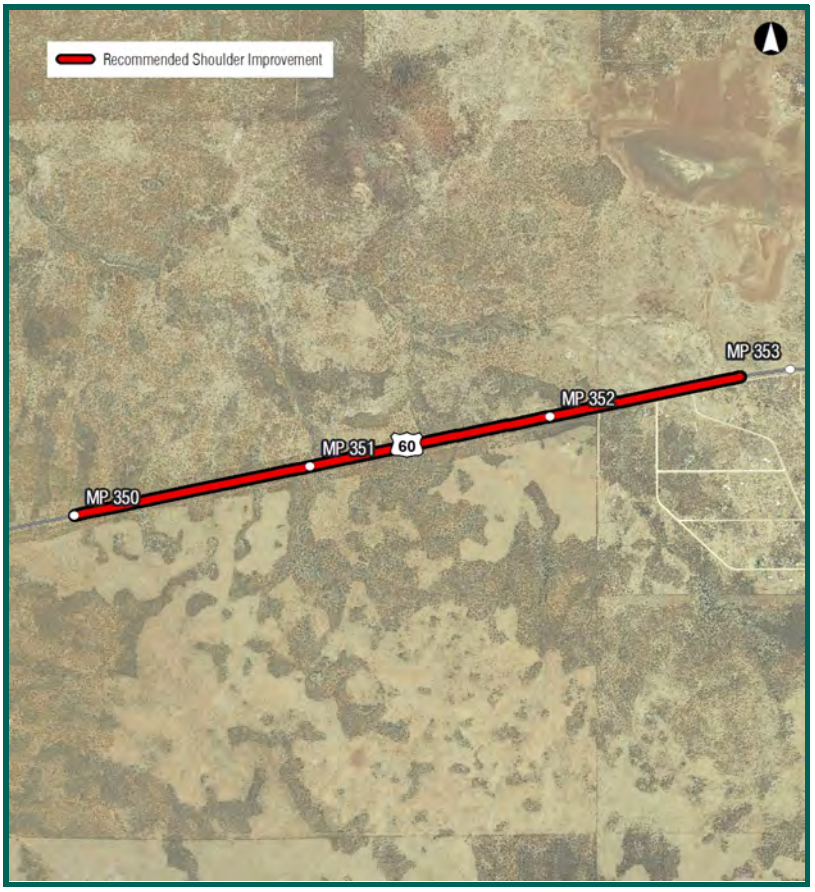
General Location Assessment: Narrow shoulder; Ample room to widen roadway

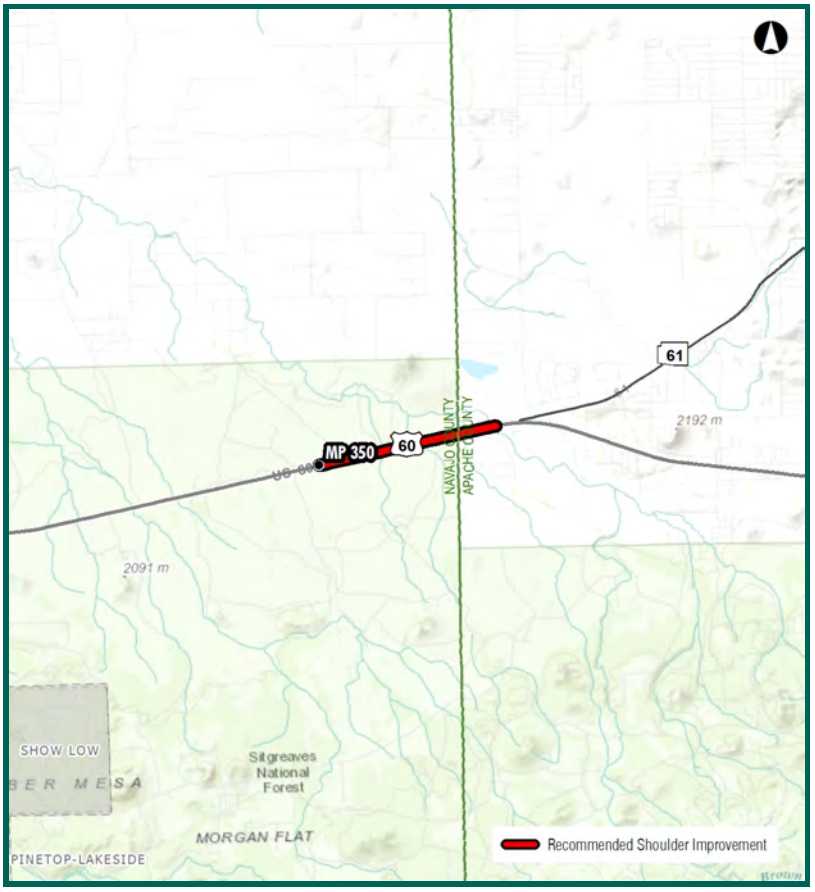
Cost Estimate: $2,772,000

Environmental Overview

Land Ownership: Apache-Sitgreaves N.F

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Wetlands;100-Yr Floodplain





SA089: MP 374 - MP 376 (Both Directions)

Statewide Rank: 23

Project Details

Route: SA089	**Direction:** Both Directions
BMP: 374.0	**Tier Level:** 1
EMP: 376.0	**District Rank:** 2
District: Flagstaff	**Left Shoulder:** Less than 2 FT
County: Coconino	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial

Wideload Corridor: No	**Pullouts:** Yes
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 5.97	**Terrain:** Mountainous
Speed Limit(mph): 40	**K-Factor:** 11
Existing AADT: 5024	**Future AADT:** 7100
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 4

Safety Analysis

Total Number of Crashes:	83
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	16
Non-Injury Crashes:	66
Equivalent Property Damage Value:	141
Crash Rate:	4.53

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

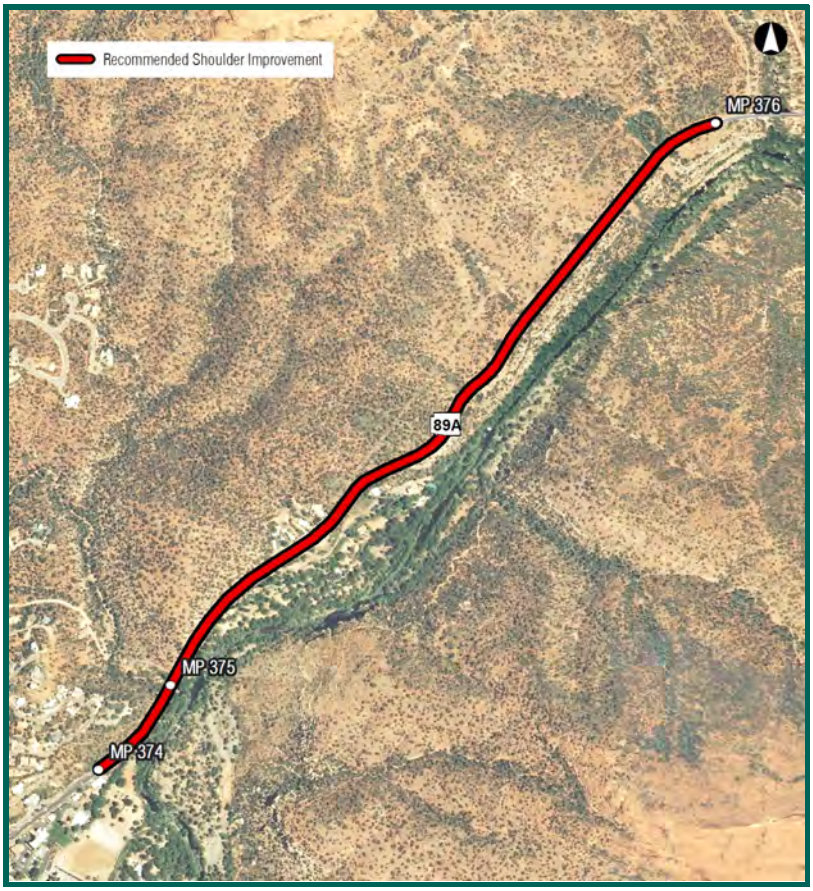
General Location Assessment: BMP 374.84 NB (southern section is curbed); After 374.84 segment goes through Oak Creek Canyon with steep roadside cliffs

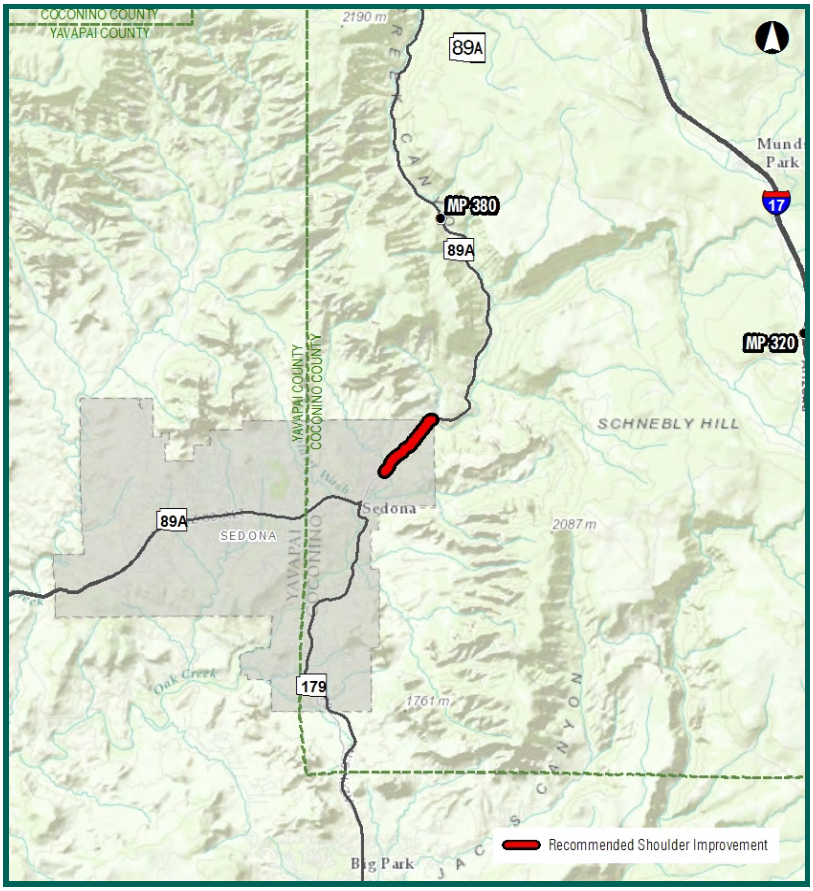
Cost Estimate: $3,780,000

Environmental Overview

Land Ownership: Coconino N.F

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Riparian Habitats; Outstanding Arizona Water; Impaired Waters; Wetlands





U 060: MP 348 - MP 350 (Both Directions)

Statewide Rank: 24

Project Details

Route: U 060	**Direction:** Both Directions
BMP: 348.0	**Tier Level:** 1
EMP: 350.0	**District Rank:** 4
District: Globe	**Left Shoulder:** 2 to 6 FT
County: Navajo	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 3.26	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 8
Existing AADT: 5215	**Future AADT:** 8300
Existing LOS: C	**Future LOS:** C
Directional Split: 50 / 50	**Truck %:** 10

Safety Analysis

Total Number of Crashes:	20
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	4
Non-Injury Crashes:	15
Equivalent Property Damage Value:	44
Crash Rate:	1.05

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

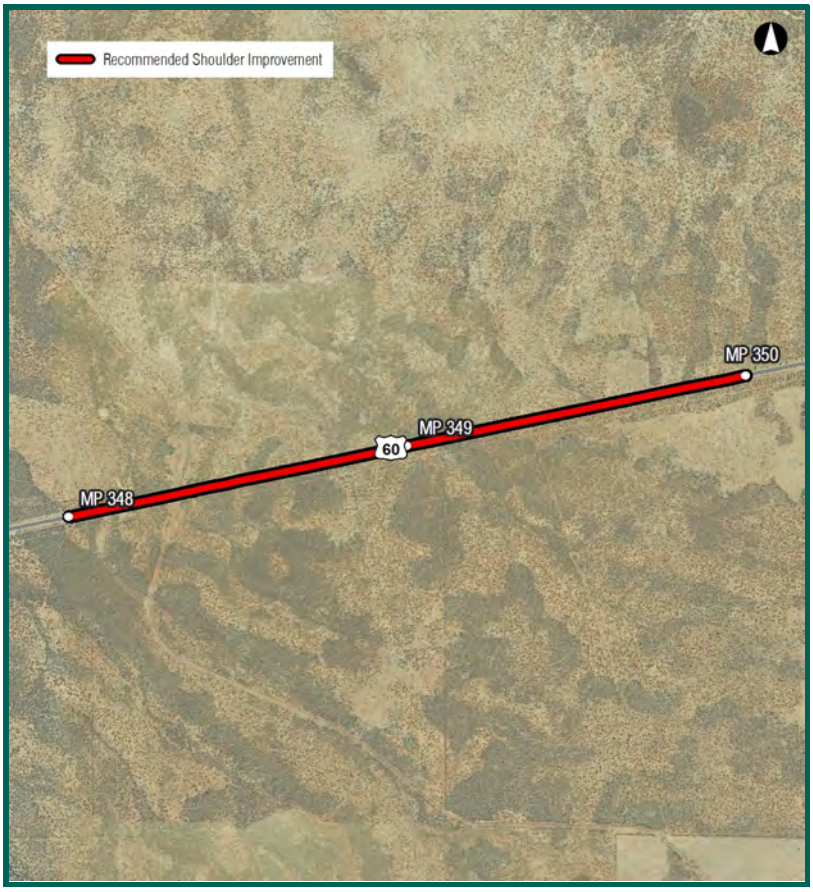
General Location Assessment: Narrow/Unpaved shoulder; Ample room to widen roadway; Multiple intersecting roadways

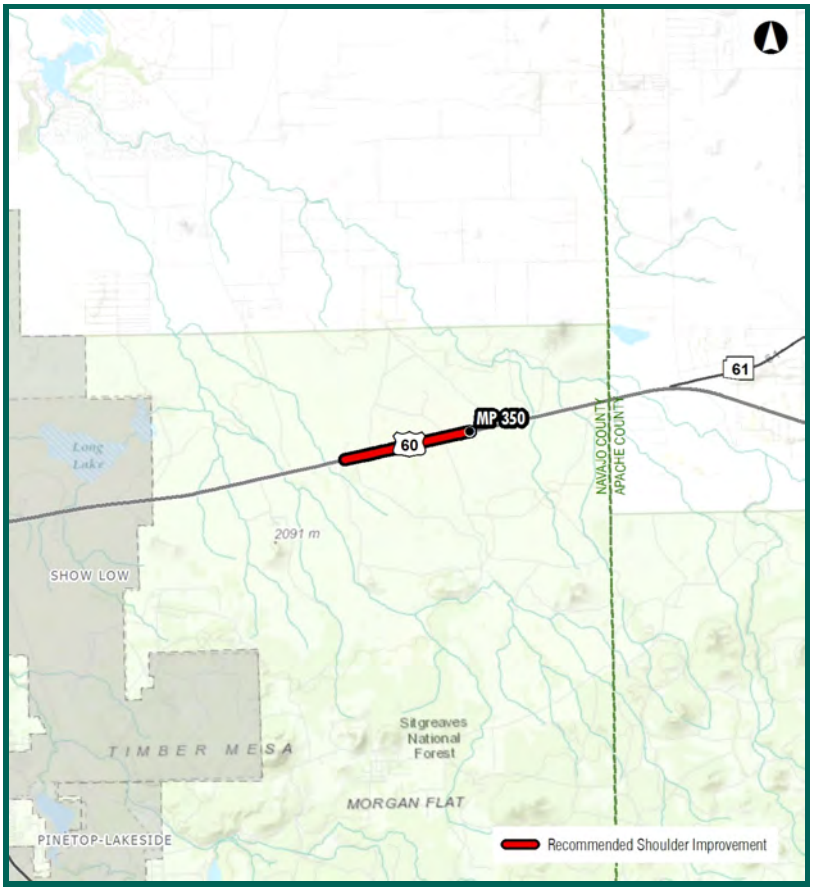
Cost Estimate: $2,030,394

Environmental Overview

Land Ownership: Apache-Sitgreaves N.F

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wetlands





U 060: MP 342.5 - MP 344 (Both Directions)

Statewide Rank: 25

Project Details

Route:	U 060	**Direction:**	Both Directions
BMP:	342.5	**Tier Level:**	1
EMP:	344.0	**District Rank:**	5
District:	Globe	**Left Shoulder:**	2 to 6 FT
County:	Navajo	**Right Shoulder:**	2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor:	Yes	**Pullouts:**	No
Ped/Bike Corridor:	Yes	**Guardrail:**	No
Terrain/Max Slope:	2.08	**Terrain:**	Rolling
Speed Limit(mph):	55	**K-Factor:**	9
Existing AADT:	7554	**Future AADT:**	12000
Existing LOS:	D	**Future LOS:**	D
Directional Split:	60 / 40	**Truck %:**	11

Safety Analysis

Total Number of Crashes:	11
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	3
Non-Injury Crashes:	8
Equivalent Property Damage Value:	21
Crash Rate:	0.53

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

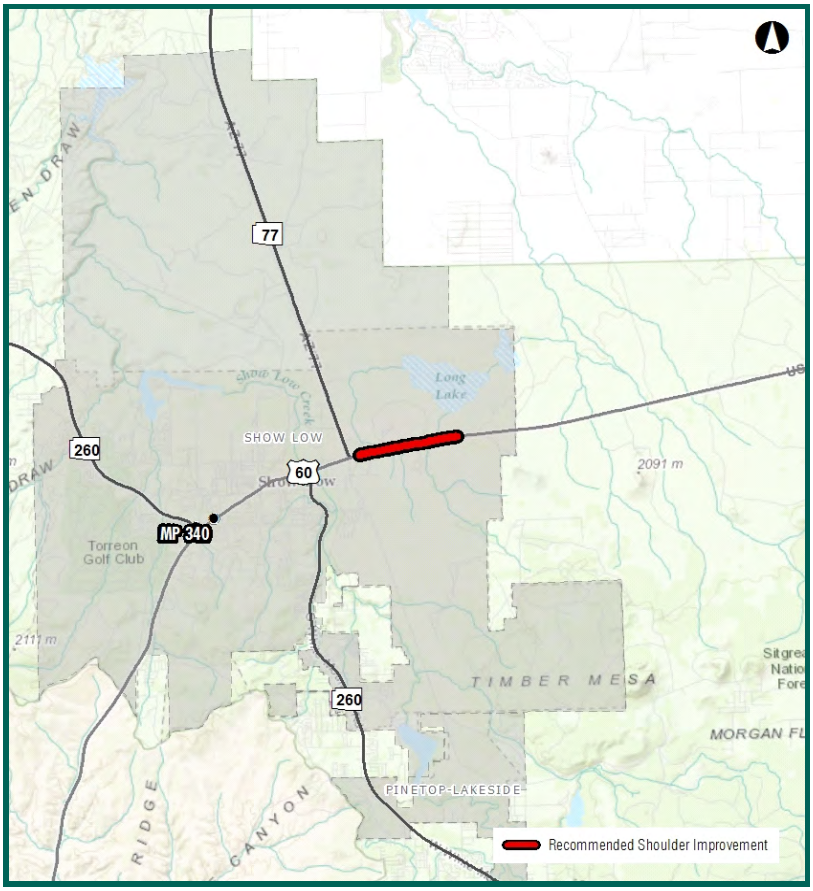
General Location Assessment: Narrow/Unpaved shoulder; Ample room to widen roadway; Multiple intersecting roadways

Cost Estimate: $1,535,394

Environmental Overview

Land Ownership: Apache-Sitgreaves N.F, Private Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wetlands;100-Yr Floodplain; Leaking underground storage tank



S 264: MP 450 - MP 452 (Both Directions)

Statewide Rank: 26

Project Details

Route: S 264	**Direction:** Both Directions
BMP: 450.0	**Tier Level:** 1
EMP: 452.0	**District Rank:** 9
District: Holbrook	**Left Shoulder:** Less than 2 FT
County: Apache	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial	
Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 2.98	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 10
Existing AADT: 5094	**Future AADT:** 5500
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 22

Safety Analysis

Total Number of Crashes:	5
Number of Fatal Crashes:	3
Injury & Possible Injury Crashes:	1
Non-Injury Crashes:	1
Equivalent Property Damage Value:	39
Crash Rate:	0.27

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

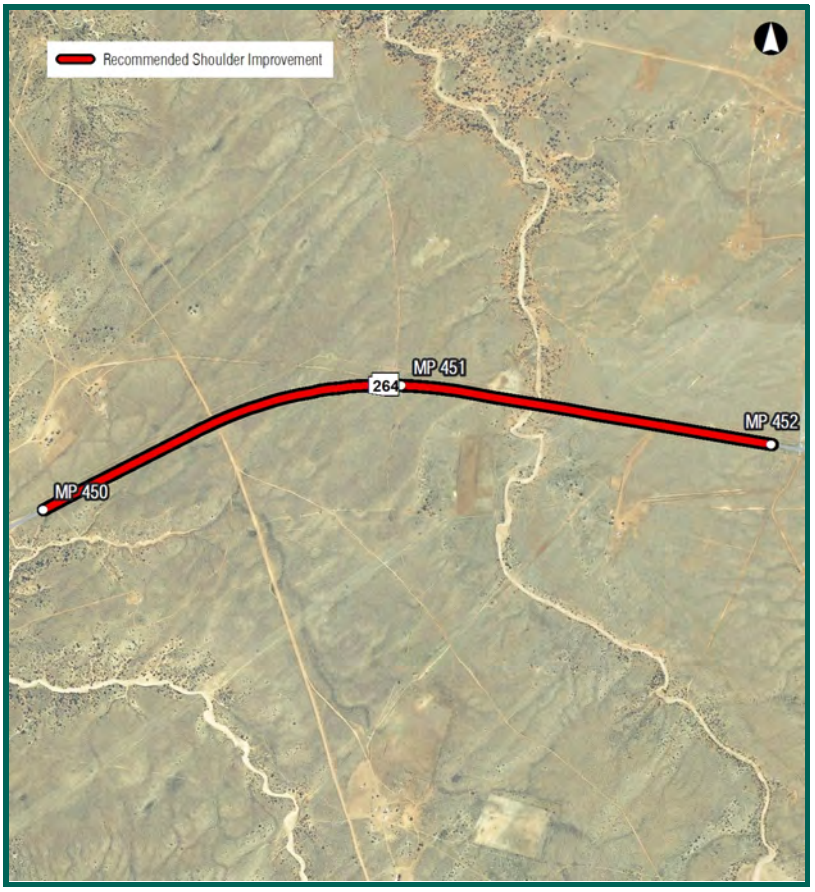
General Location Assessment: Unpaved shoulder; Ample room to widen roadway; Multiple intersecting roadways; Bridge on segment requires widening

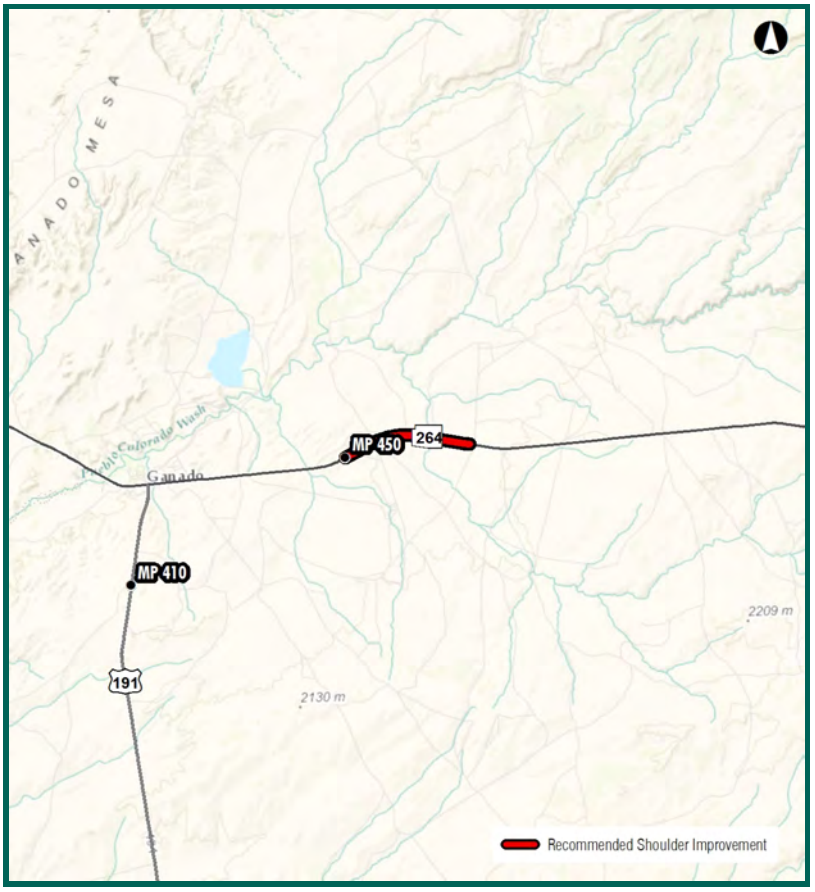
Cost Estimate: $3,781,470

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints





S 095: MP 160 - MP 162 (Both Directions)

Statewide Rank: 27

Project Details

Route: S 095	**Direction:** Both Directions
BMP: 160.0	**Tier Level:** 1
EMP: 162.0	**District Rank:** 7
District: Yuma	**Left Shoulder:** 6 to 8 FT
County: La Paz/Maric	**Right Shoulder:** 6 to 8 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 3.04	**Terrain:** Mountainous
Speed Limit(mph): 65	**K-Factor:** 11
Existing AADT: 5948	**Future AADT:** 6600
Existing LOS: D	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 22

Safety Analysis

Total Number of Crashes:	21
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	6
Non-Injury Crashes:	15
Equivalent Property Damage Value:	35
Crash Rate:	0.97

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

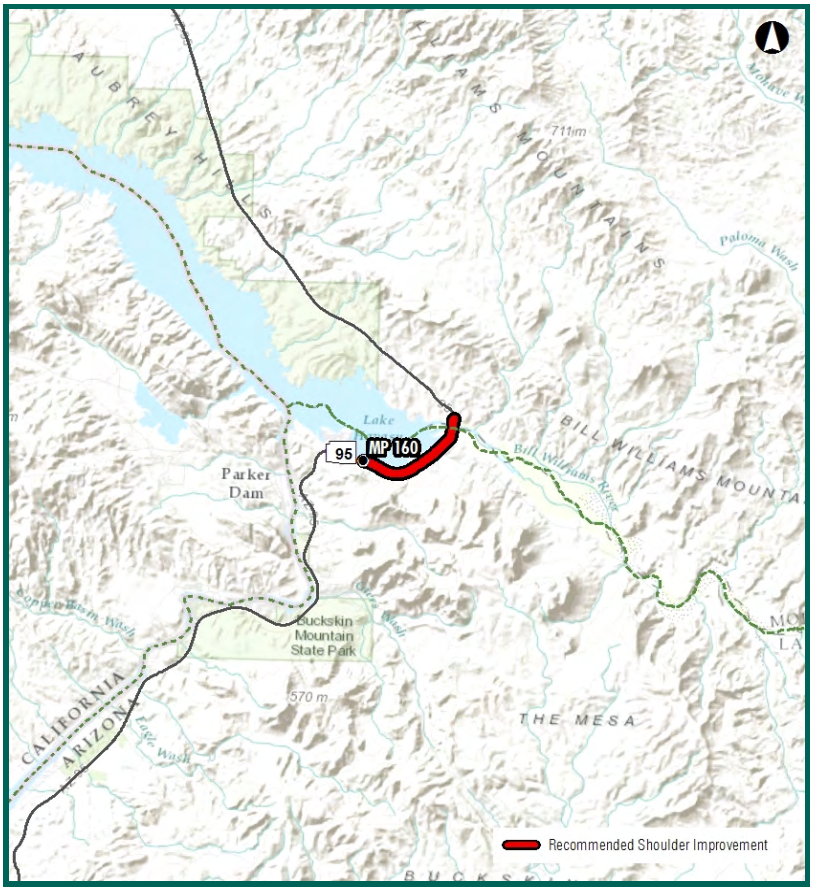
General Location Assessment: Narrow shoulder; Bridge on segment; Paved shoulders in good condition; Roadside slopes may limit construction

Cost Estimate: $2,176,378

Environmental Overview

Land Ownership: Bureau of Land Mgmt., Havasu NWR

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Lake Havasu SRMA; Suitable Desert Tortoise Habitat; Wildlife Linkage Zone; Riparian Habitats; Wetlands;100-Yr Floodplain; Critical Habitat Area



S 064: MP 187.9 - MP 190 (Both Directions)

Statewide Rank: 28

Project Details

Route: S 064	**Direction:** Both Directions
BMP: 187.9	**Tier Level:** 1
EMP: 190.0	**District Rank:** 3
District: Flagstaff	**Left Shoulder:** 2 to 6 FT
County: Coconino	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: No	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 3.93	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 9
Existing AADT: 7166	**Future AADT:** 6900
Existing LOS: D	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 15

Safety Analysis

Total Number of Crashes:	30
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	5
Non-Injury Crashes:	25
Equivalent Property Damage Value:	48
Crash Rate:	1.1

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

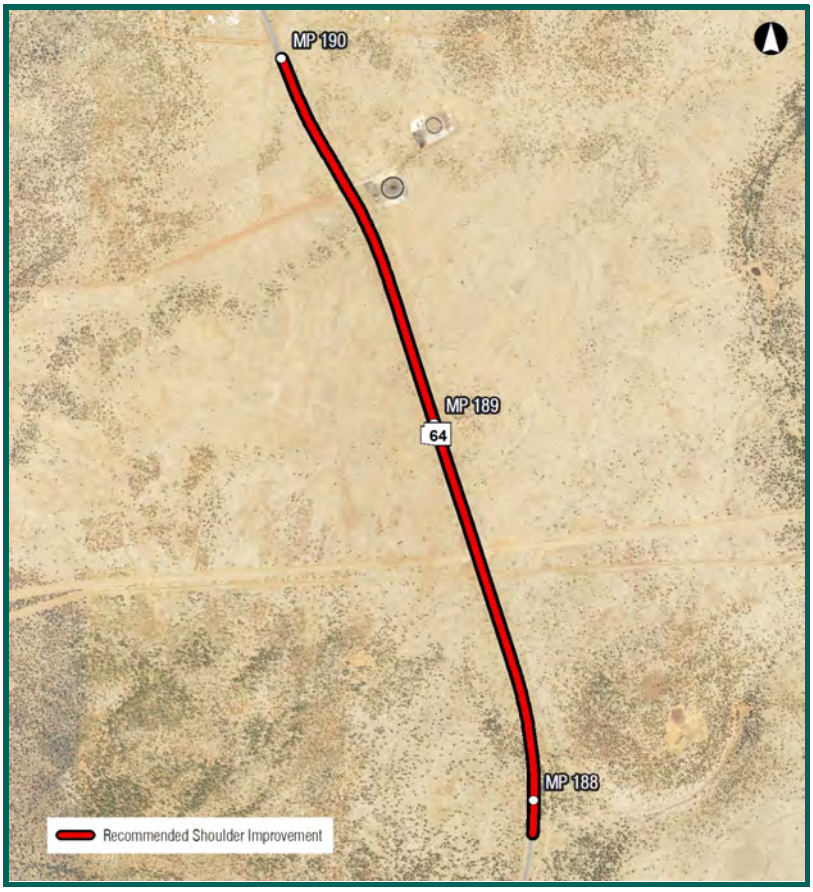
General Location Assessment: Unpaved clear zone adjacent to shoulder; Paved portion of shoulders in good condition; Ample room to widen roadway; Multiple intersecting roadways; Bridge on segment requires widening

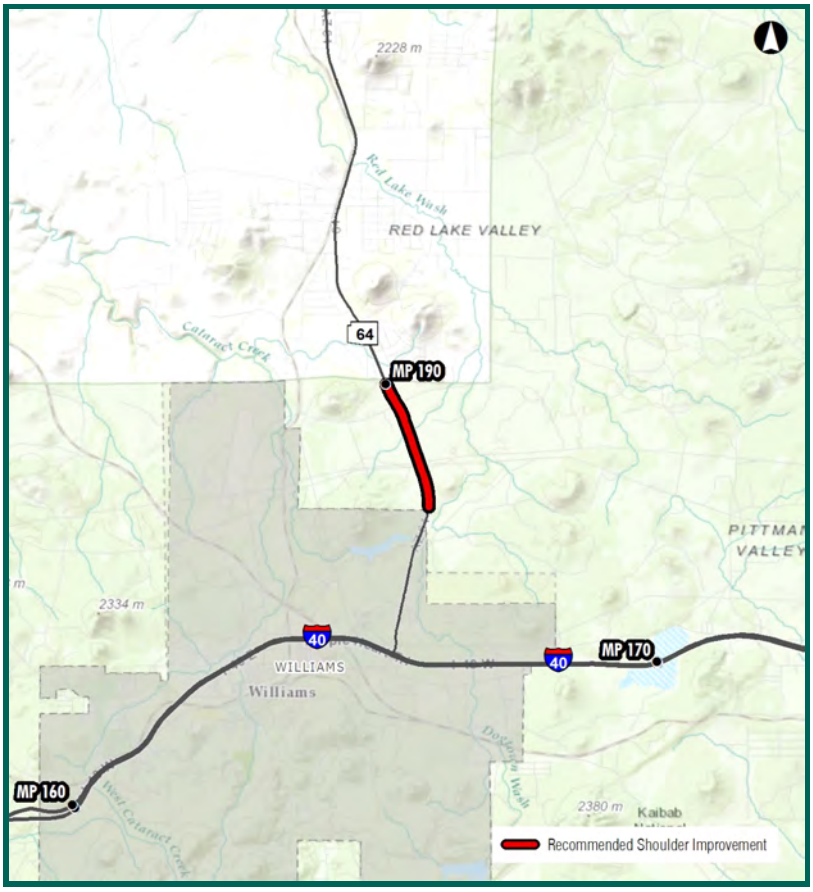
Cost Estimate: $1,881,000

Environmental Overview

Land Ownership: Kaibab N.F, Private Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Wetlands





U 060: MP 240 - MP 241.7 (Both Directions)

Statewide Rank: 29

Project Details

Route: U 060	**Direction:** Both Directions
BMP: 240.0	**Tier Level:** 1
EMP: 241.7	**District Rank:** 6
District: Globe	**Left Shoulder:** 6 to 8 FT
County: Gila	**Right Shoulder:** 6 to 8 FT

Roadway Characteristics

Functional Class: Rural Local	
Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 5.94	**Terrain:** Mountainous
Speed Limit(mph): 55	**K-Factor:** 8
Existing AADT: 7335	**Future AADT:** 8200
Existing LOS: C	**Future LOS:** C
Directional Split: 51 / 49	**Truck %:** 11

Safety Analysis

Total Number of Crashes:	29
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	14
Non-Injury Crashes:	15
Equivalent Property Damage Value:	74
Crash Rate:	1.3

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

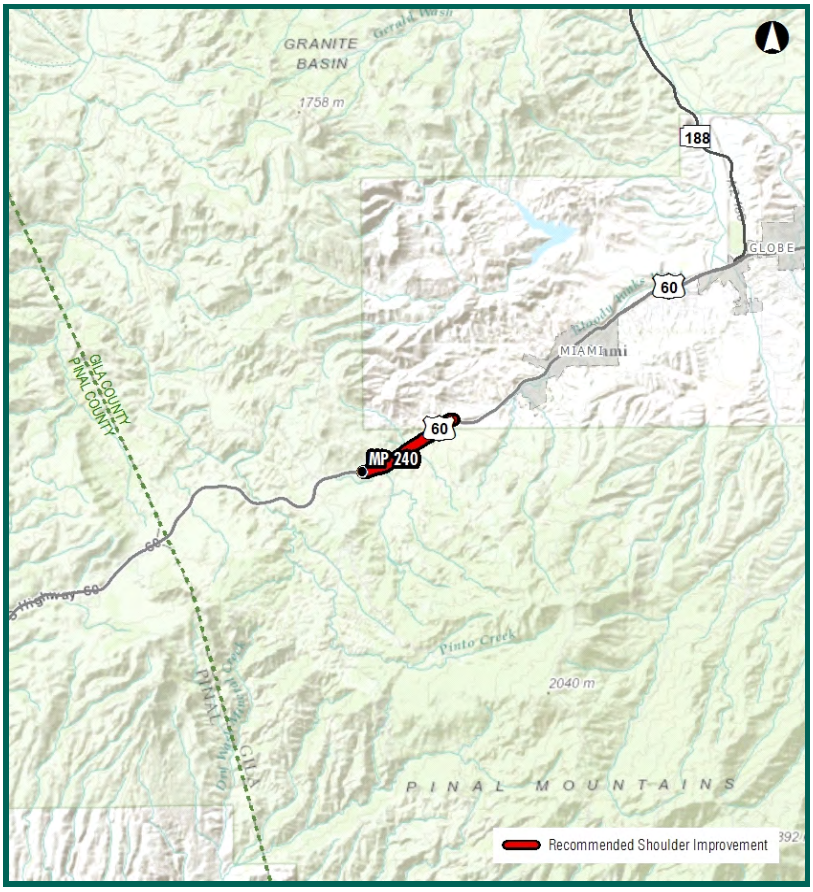
General Location Assessment: No Shoulder; Roadside slopes may limit construction (MP 240.9 - 240.0); Roadside cliffs limit construction (MP 241 - 241.67)

Cost Estimate: $554,050

Environmental Overview

Land Ownership: Tonto N.F, Private Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Superfund site; PM10 Nonattainment Area



S 095: MP 148.3 - MP 150 (Both Directions)

Statewide Rank: 30

Project Details

Route: S 095	**Direction:** Both Directions
BMP: 148.3	**Tier Level:** 1
EMP: 150.0	**District Rank:** 8
District: Yuma	**Left Shoulder:** 6 to 8 FT
County: La Paz	**Right Shoulder:** 6 to 8 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 3.34	**Terrain:** Rolling
Speed Limit(mph): 55	**K-Factor:** 17
Existing AADT: 4791	**Future AADT:** 7100
Existing LOS: C	**Future LOS:** D
Directional Split: 70 / 30	**Truck %:** 14

Safety Analysis

Total Number of Crashes:	17
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	3
Non-Injury Crashes:	13
Equivalent Property Damage Value:	35
Crash Rate:	1.14

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

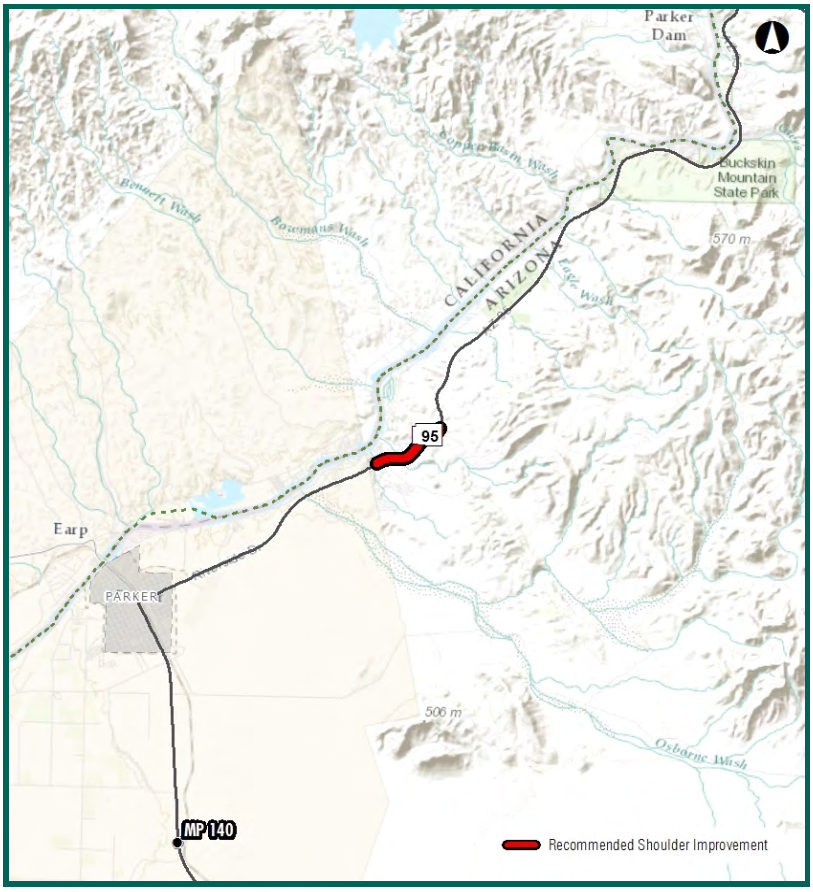
General Location Assessment: Paved shoulders in good condition; Roadside slopes may limit construction

Cost Estimate: $420,750

Environmental Overview

Land Ownership: Prescott N.F

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Gibralter SRMA; Suitable Desert Tortoise Habitat; Riparian Habitats; Wetlands;100-Yr Floodplain; Leaking underground storage tank; Critical Habitat Area



S 264: MP 444 - MP 446 (Both Directions)

Statewide Rank: 31

Project Details

Route: S 264	**Direction:** Both Directions
BMP: 444.0	**Tier Level:** 1
EMP: 446.0	**District Rank:** 10
District: Holbrook	**Left Shoulder:** Less than 2 FT
County: Apache	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 1.98	**Terrain:** Rolling
Speed Limit(mph): 55	**K-Factor:** 10
Existing AADT: 6223	**Future AADT:** 5700
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 7

Safety Analysis

Total Number of Crashes:	1
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	1
Non-Injury Crashes:	0
Equivalent Property Damage Value:	2
Crash Rate:	0.04

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

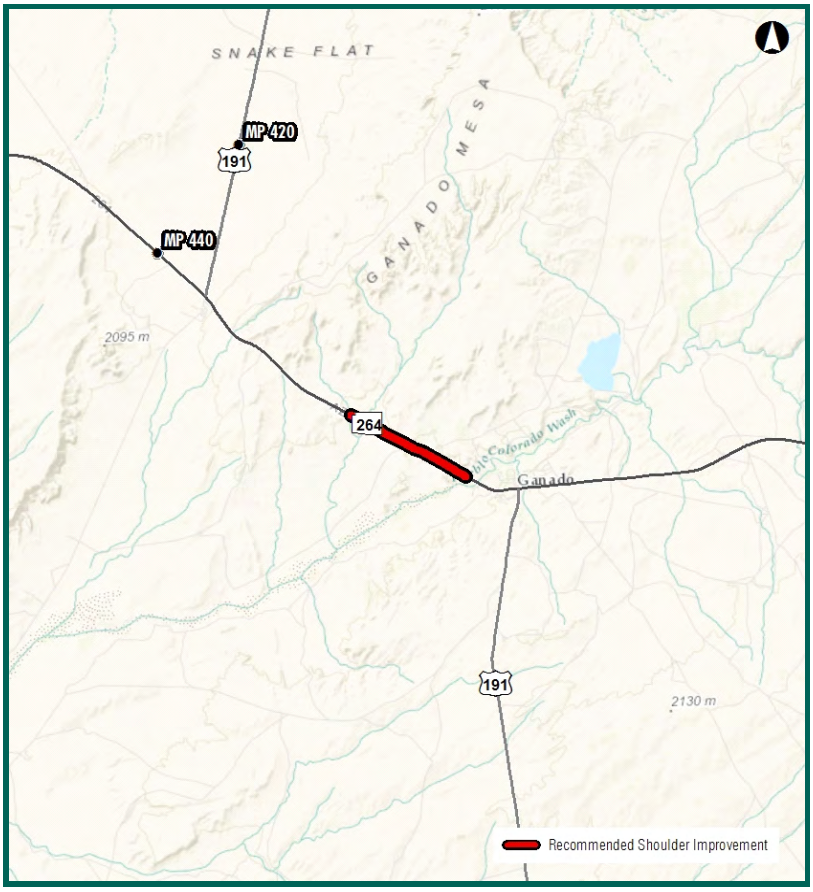
General Location Assessment: Unpaved shoulder; Ample room to widen roadway; Multiple intersecting roadways

Cost Estimate: $3,557,914

Environmental Overview

Land Ownership: Navajo Indian Res., Hubble NHS, Private Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints



U 191: MP 447.5 - MP 450 (Both Directions)

Statewide Rank: 32

Project Details

Route: U 191	**Direction:** Both Directions
BMP: 447.5	**Tier Level:** 1
EMP: 450.0	**District Rank:** 11
District: Holbrook	**Left Shoulder:** Less than 2 FT
County: Apache	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 0.72	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 10
Existing AADT: 9734	**Future AADT:** 4800
Existing LOS: D	**Future LOS:** B
Directional Split: 60 / 40	**Truck %:** 4

Safety Analysis

Total Number of Crashes:	29
Number of Fatal Crashes:	4
Injury & Possible Injury Crashes:	12
Non-Injury Crashes:	13
Equivalent Property Damage Value:	92
Crash Rate:	0.65

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

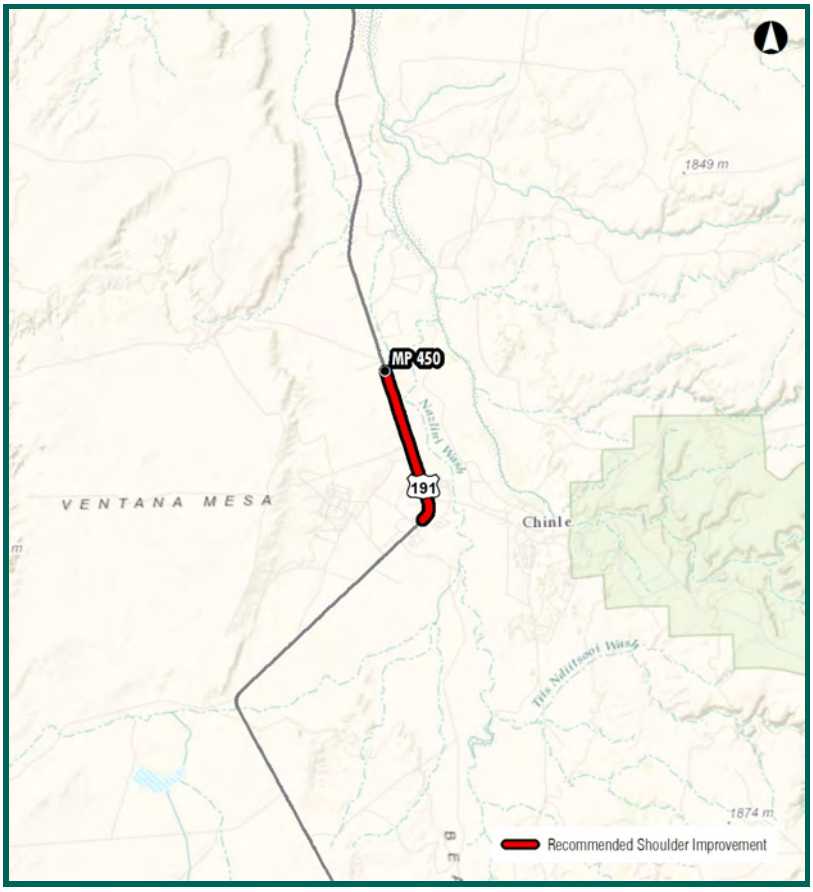
General Location Assessment: Segment is curbed (MP 447.5-447.9); Unpaved shoulder; Multiple intersecting roadways; Ample room to widen roadway

Cost Estimate: $3,937,500

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Wetlands



S 095: MP 150 - MP 153.3 (Both Directions)

Statewide Rank: 33

Project Details

Route: S 095	**Direction:** Both Directions
BMP: 150.0	**Tier Level:** 1
EMP: 153.3	**District Rank:** 9
District: Yuma	**Left Shoulder:** 6 to 8 FT
County: La Paz	**Right Shoulder:** 6 to 8 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 3.66	**Terrain:** Rolling
Speed Limit(mph): 55	**K-Factor:** 9
Existing AADT: 4791	**Future AADT:** 7100
Existing LOS: C	**Future LOS:** D
Directional Split: 70 / 30	**Truck %:** 12

Safety Analysis

Total Number of Crashes:	13
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	5
Non-Injury Crashes:	8
Equivalent Property Damage Value:	26
Crash Rate:	0.45

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

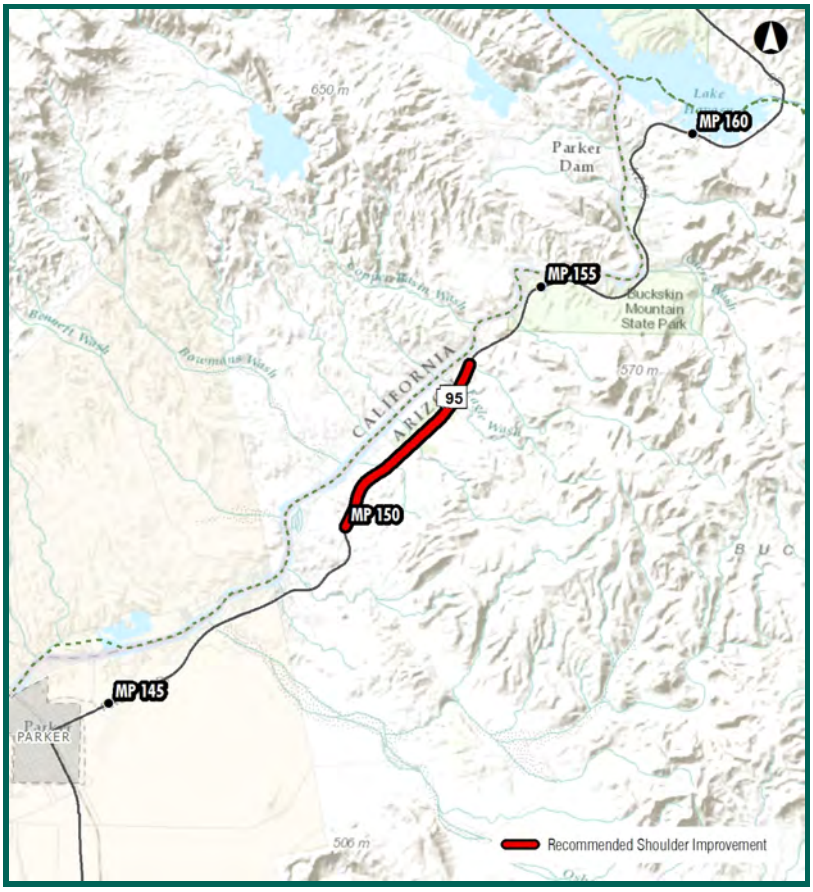
General Location Assessment: Paved shoulders in good condition; Roadside slopes may limit construction; Multiple intersecting streets; Shoulders currently ~ 7 FT

Cost Estimate: $824,175

Environmental Overview

Land Ownership: Private Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Suitable Desert Tortoise Habitat; Impaired Waters; Wetlands;100-Yr Floodplain; Critical Habitat Area



U 060: MP 232.7 - MP 234.4 (Both Directions)

Statewide Rank: 34

Project Details

Route: U 060	**Direction:** Both Directions
BMP: 232.7	**Tier Level:** 1
EMP: 234.4	**District Rank:** 7
District: Globe	**Left Shoulder:** 2 to 6 FT
County: Pinal	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 6.07	**Terrain:** Mountainous
Speed Limit(mph): 55	**K-Factor:** 8
Existing AADT: 7335	**Future AADT:** 8200
Existing LOS: C	**Future LOS:** C
Directional Split: 51 / 49	**Truck %:** 11

Safety Analysis

Total Number of Crashes:	43
Number of Fatal Crashes:	3
Injury & Possible Injury Crashes:	10
Non-Injury Crashes:	30
Equivalent Property Damage Value:	124
Crash Rate:	1.97

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

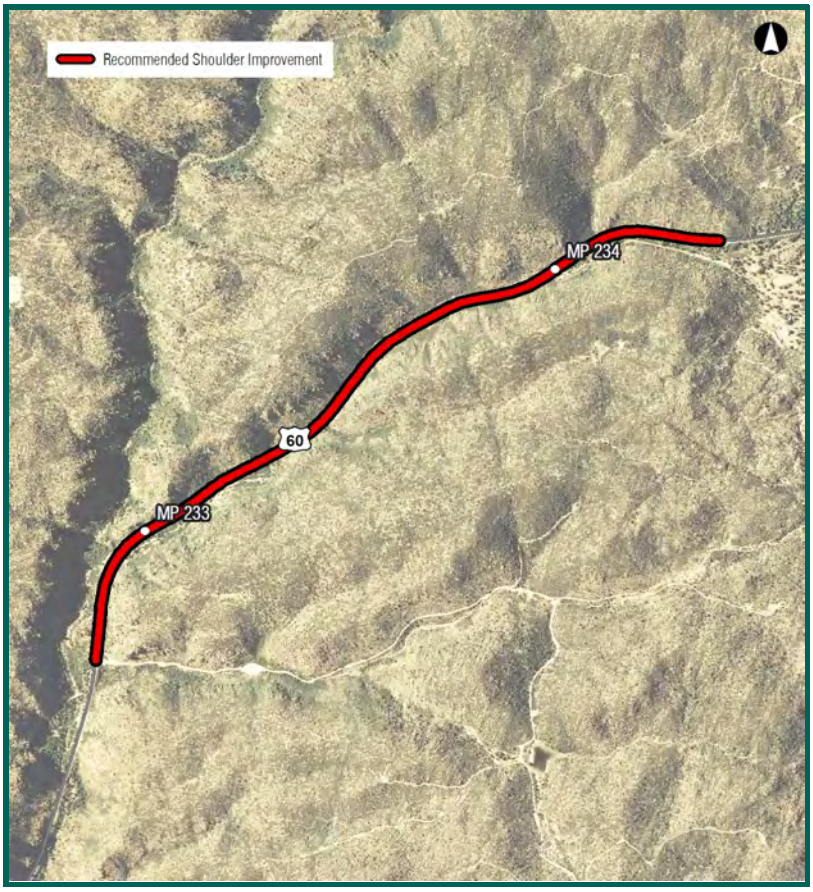
General Location Assessment: No Shoulder; Roadside cliffs may limit construction

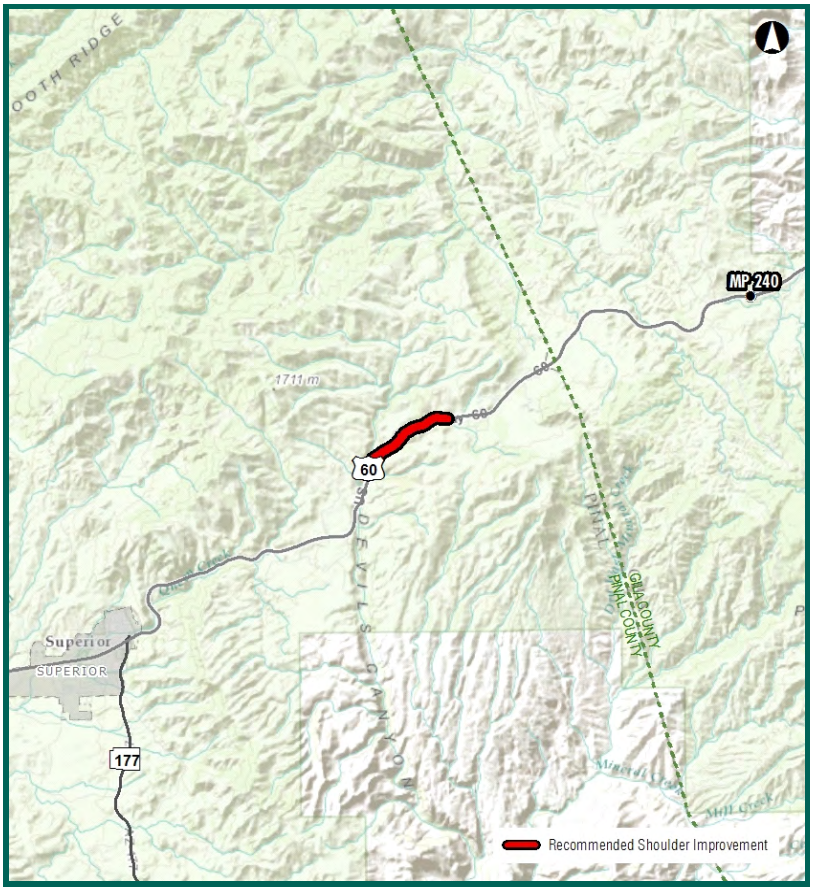
Cost Estimate: $2,024,966

Environmental Overview

Land Ownership: Tonto N.F, Private Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Wetlands; PM10 Nonattainment Area





U 060: MP 352.8 - MP 356 (Both Directions)

Statewide Rank: 35

Project Details

Route: U 060	**Direction:** Both Directions
BMP: 352.8	**Tier Level:** 1
EMP: 356.0	**District Rank:** 8
District: Globe	**Left Shoulder:** Less than 2 FT
County: Apache	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 5.52	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 9
Existing AADT: 5215	**Future AADT:** 4100
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 6

Safety Analysis

Total Number of Crashes:	35
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	10
Non-Injury Crashes:	25
Equivalent Property Damage Value:	60
Crash Rate:	1.15

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

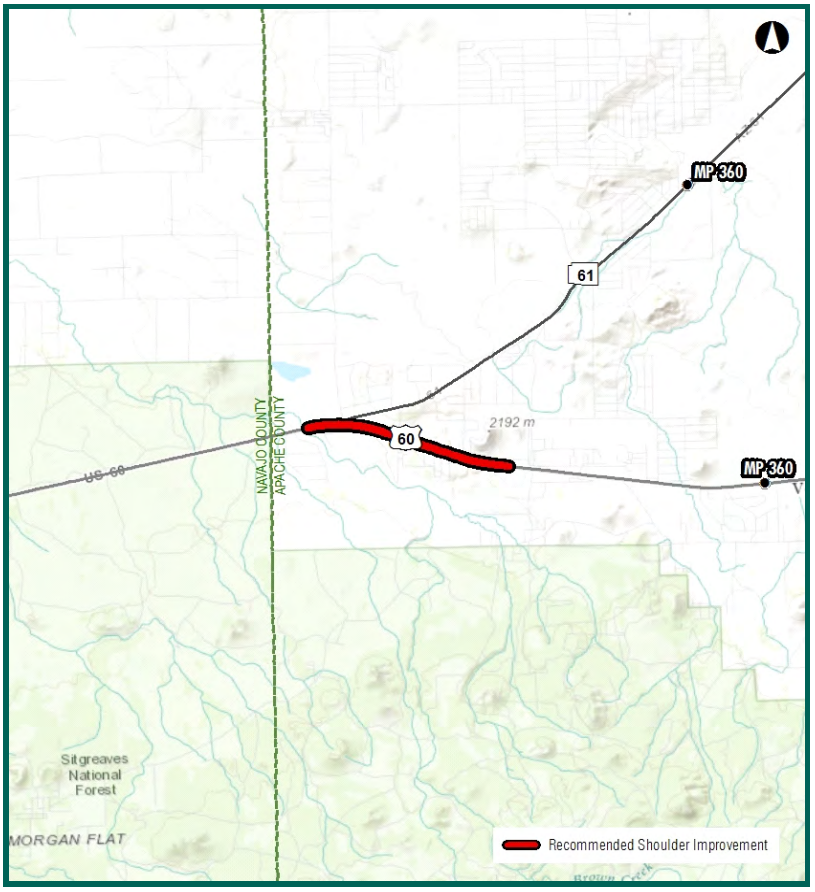
General Location Assessment: No shoulder; Multiple intersecting roadways

Cost Estimate: $5,544,000

Environmental Overview

Land Ownership: Private Land, State Trust Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Wetlands;100-Yr Floodplain



S 169: MP 2 - MP 4 (Both Directions)

Statewide Rank: 36

Project Details

Route: S 169	**Direction:** Both Directions
BMP: 2.0	**Tier Level:** 1
EMP: 4.0	**District Rank:** 1
District: Prescott	**Left Shoulder:** 2 to 6 FT
County: Yavapai	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial

Wideload Corridor: No	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 5.75	**Terrain:** Rolling
Speed Limit(mph): 55	**K-Factor:** 8
Existing AADT: 6531	**Future AADT:** 12000
Existing LOS: C	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 8

Safety Analysis

Total Number of Crashes:	15
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	4
Non-Injury Crashes:	11
Equivalent Property Damage Value:	28
Crash Rate:	0.63

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

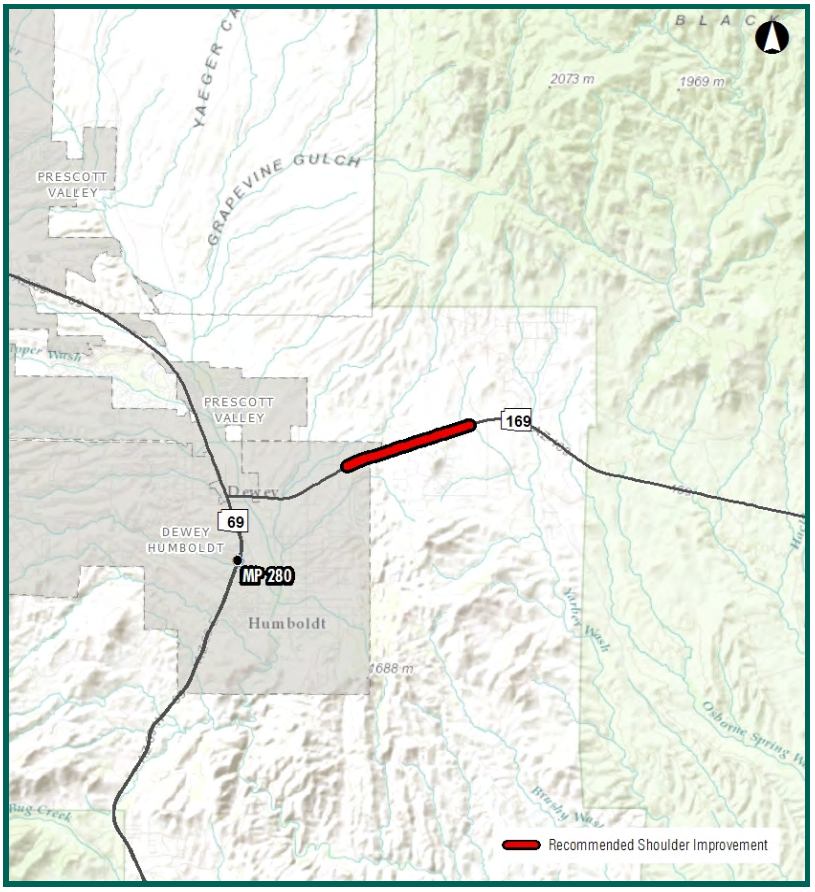
General Location Assessment: Paved shoulders in good condition; Ample room to widen roadway; Unpaved clear zone adjacent to shoulder

Cost Estimate: $1,980,000

Environmental Overview

Land Ownership: Private Land, State Trust Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Upper Agua Fria River Basin SRMA; Wildlife Linkage Zone; Wetlands;100-Yr Floodplain



S 095: MP 168 - MP 170 (Southbound)

Statewide Rank: 37

Project Details

Route: S 095	**Direction:** Southbound
BMP: 168.0	**Tier Level:** 1
EMP: 170.0	**District Rank:** 4
District: Kingman	**Left Shoulder:** 2 to 6 FT
County: Mohave	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 4.48	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 9
Existing AADT: 5621	**Future AADT:** 8800
Existing LOS: D	**Future LOS:** D
Directional Split: 59 / 41	**Truck %:** 23

Safety Analysis

Total Number of Crashes:	10
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	3
Non-Injury Crashes:	7
Equivalent Property Damage Value:	17
Crash Rate:	0.49

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

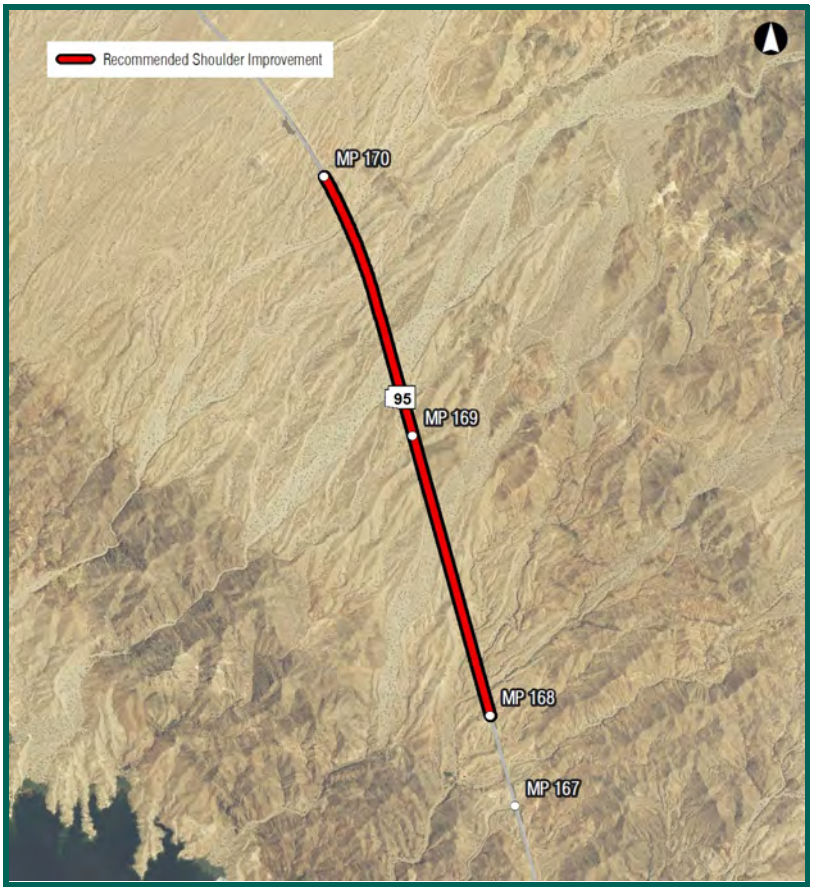
General Location Assessment: Paved shoulders in good condition; Ample room to widen roadway

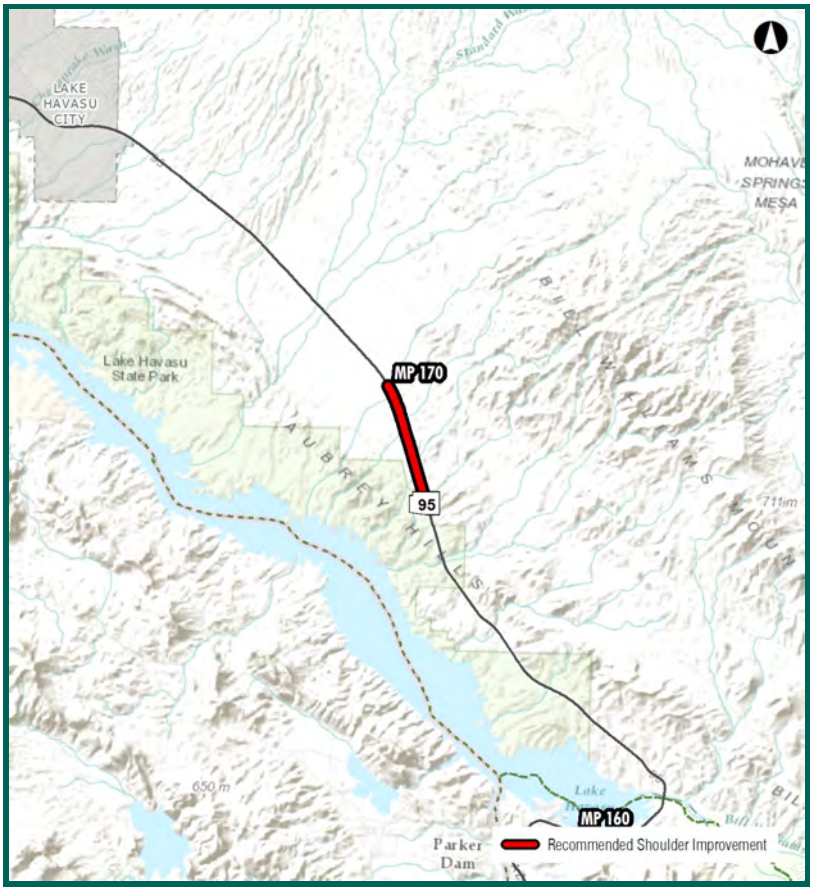
Cost Estimate: $1,183,700

Environmental Overview

Land Ownership: Bureau of Land Mgmt., Cattail Cove SP

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Lake Havasu SRMA; Suitable Desert Tortoise Habitat; Wildlife Linkage Zone;100-Yr Floodplain





S 264: MP 448 - MP 450 (Both Directions)

Statewide Rank: 38

Project Details

Route: S 264	**Direction:** Both Directions
BMP: 448.0	**Tier Level:** 1
EMP: 450.0	**District Rank:** 12
District: Holbrook	**Left Shoulder:** Less than 2 FT
County: Apache	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 5.87	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 10
Existing AADT: 4042	**Future AADT:** 5500
Existing LOS: C	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 27

Safety Analysis

Total Number of Crashes:	4
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	1
Non-Injury Crashes:	2
Equivalent Property Damage Value:	21
Crash Rate:	0.27

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

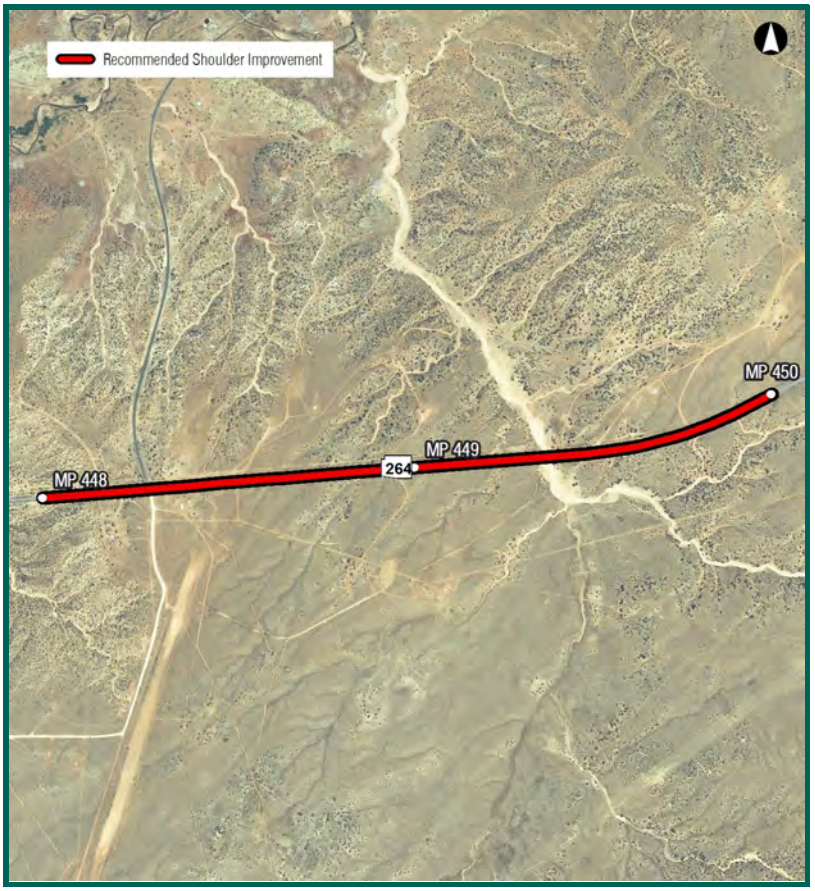
General Location Assessment: Unpaved shoulder; Ample room to widen roadway; Multiple intersecting roadways

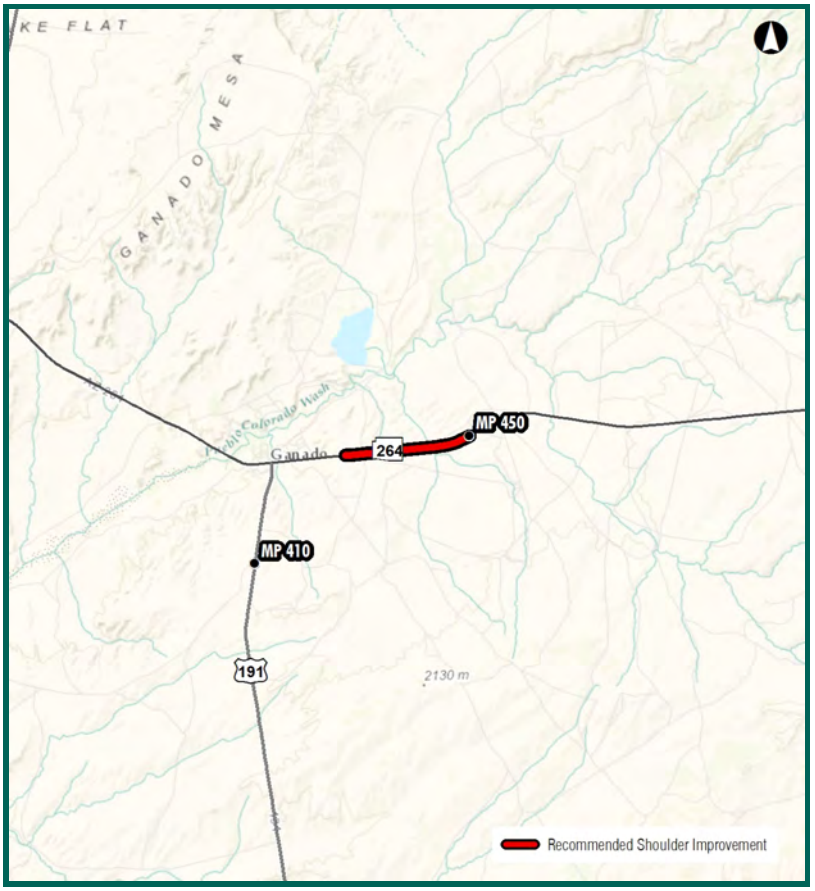
Cost Estimate: $3,465,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints





S 169: MP 10 - MP 12 (Both Directions)

Statewide Rank: 39

Project Details

Route: S 169	**Direction:** Both Directions
BMP: 10.0	**Tier Level:** 1
EMP: 12.0	**District Rank:** 2
District: Prescott	**Left Shoulder:** 2 to 6 FT
County: Yavapai	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial	
Wideload Corridor: No	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 2.97	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 8
Existing AADT: 5119	**Future AADT:** 7400
Existing LOS: C	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 14

Safety Analysis

Total Number of Crashes:	10
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	4
Non-Injury Crashes:	6
Equivalent Property Damage Value:	21
Crash Rate:	0.54

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

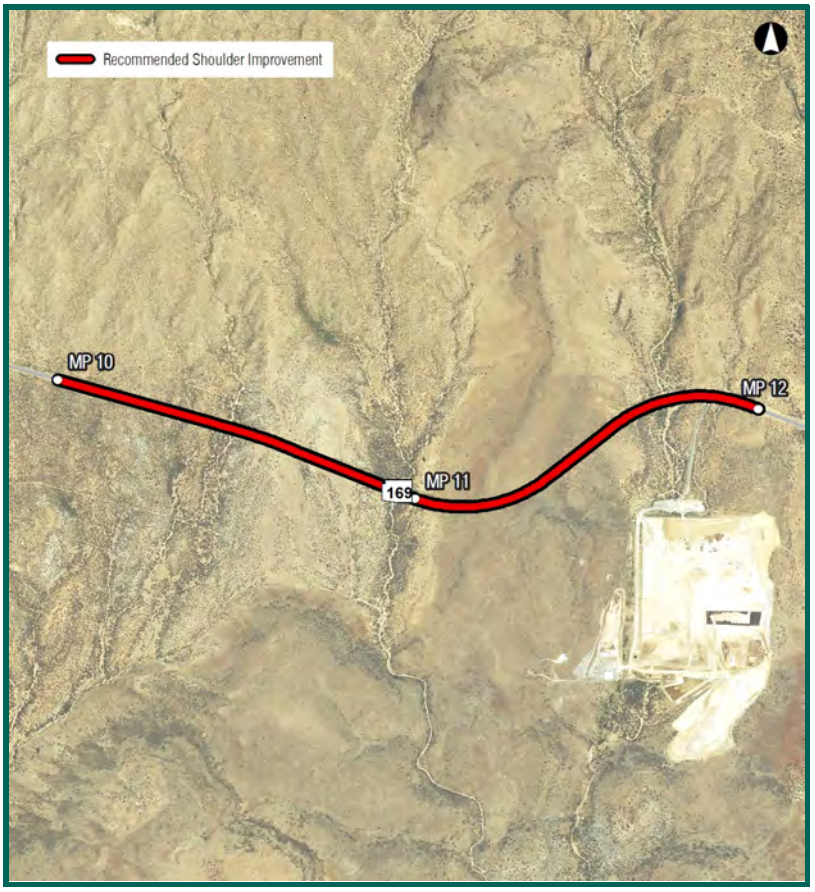
General Location Assessment: Paved shoulders in good condition; Ample room to widen roadway; Unpaved clear zone adjacent to shoulder

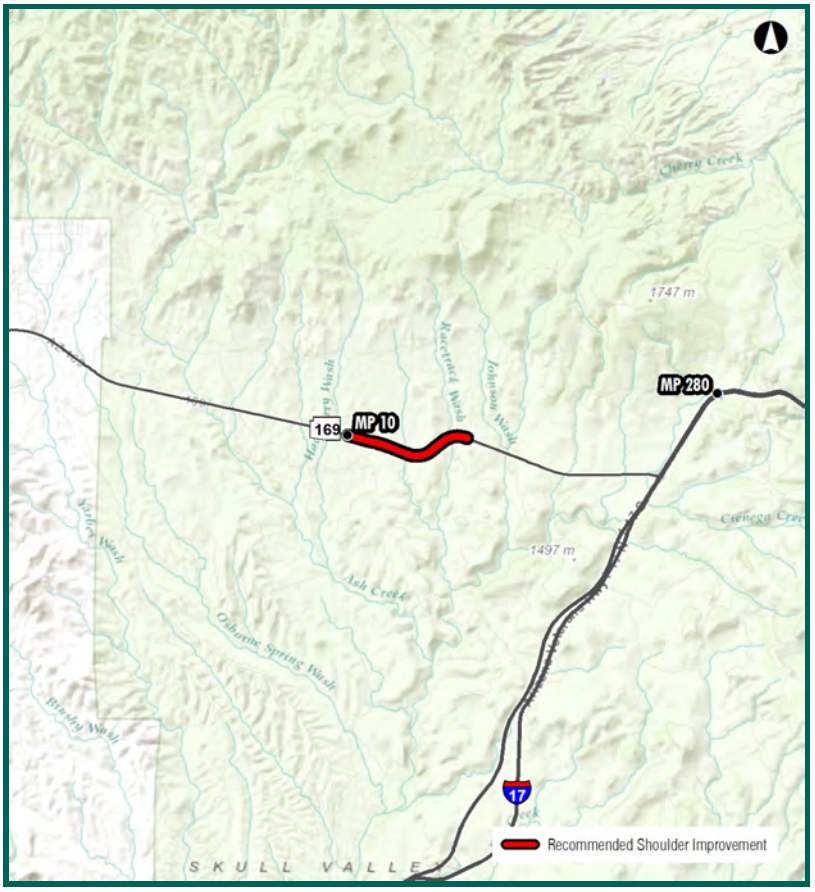
Cost Estimate: $1,980,000

Environmental Overview

Land Ownership: Prescott N.F

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wetlands





U 060: MP 227.1 - MP 230.2 (Both Directions)

Statewide Rank: 40

Project Details

Route: U 060	**Direction:** Both Directions
BMP: 227.1	**Tier Level:** 1
EMP: 230.2	**District Rank:** 9
District: Globe	**Left Shoulder:** 2 to 6 FT
County: Pinal	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 6.48	**Terrain:** Mountainous
Speed Limit(mph): 55	**K-Factor:** 8
Existing AADT: 7335	**Future AADT:** 8200
Existing LOS: C	**Future LOS:** C
Directional Split: 51 / 49	**Truck %:** 11

Safety Analysis

Total Number of Crashes:	90
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	26
Non-Injury Crashes:	63
Equivalent Property Damage Value:	184
Crash Rate:	2.17

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

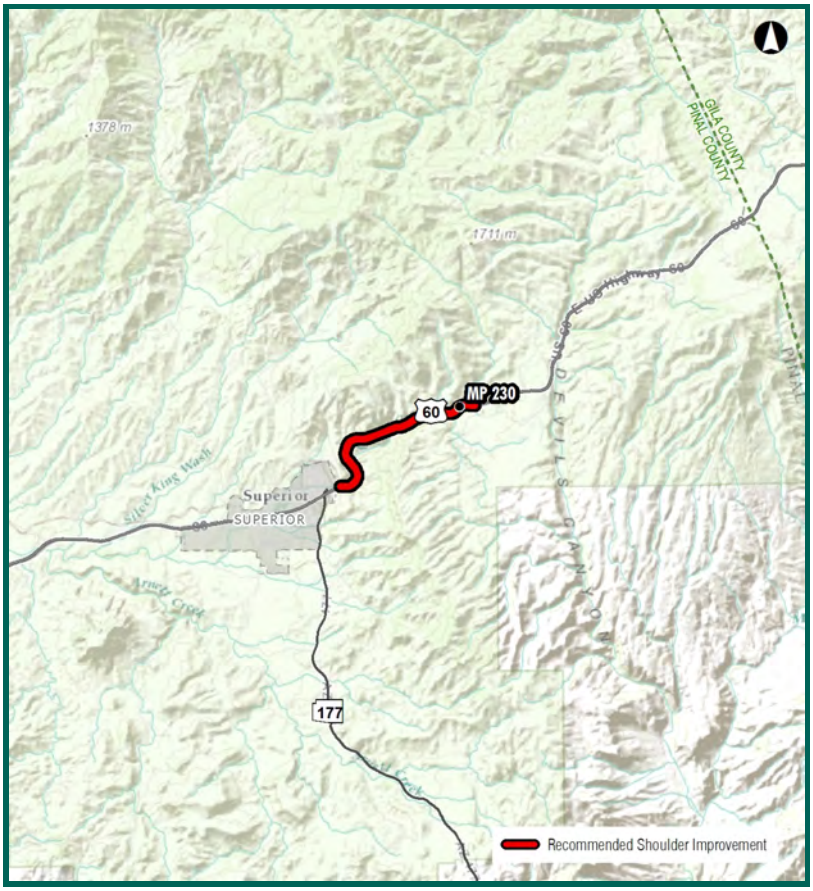
General Location Assessment: No Shoulder; Tunnel; Bridges on segment require widening; Roadside cliffs may limit construction

Cost Estimate: $3,515,874

Environmental Overview

Land Ownership: Tonto N.F, Private Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Impaired Waters; Wetlands;100-Yr Floodplain; PM10 Nonattainment Area



U 060: MP 346 - MP 348 (Both Directions)

Statewide Rank: 41

Project Details

Route: U 060	**Direction:** Both Directions
BMP: 346.0	**Tier Level:** 1
EMP: 348.0	**District Rank:** 10
District: Globe	**Left Shoulder:** 2 to 6 FT
County: Navajo	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 2.6	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 8
Existing AADT: 6143	**Future AADT:** 8300
Existing LOS: C	**Future LOS:** C
Directional Split: 50 / 50	**Truck %:** 9

Safety Analysis

Total Number of Crashes:	14
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	6
Non-Injury Crashes:	7
Equivalent Property Damage Value:	41
Crash Rate:	0.62

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

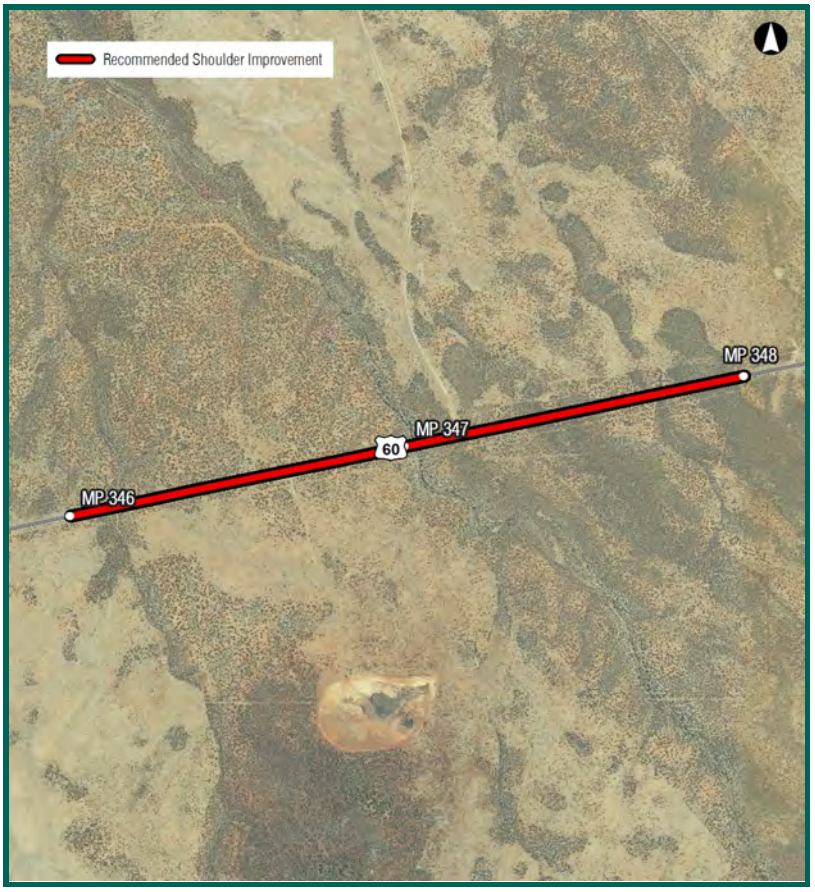
General Location Assessment: Paved shoulders in good condition

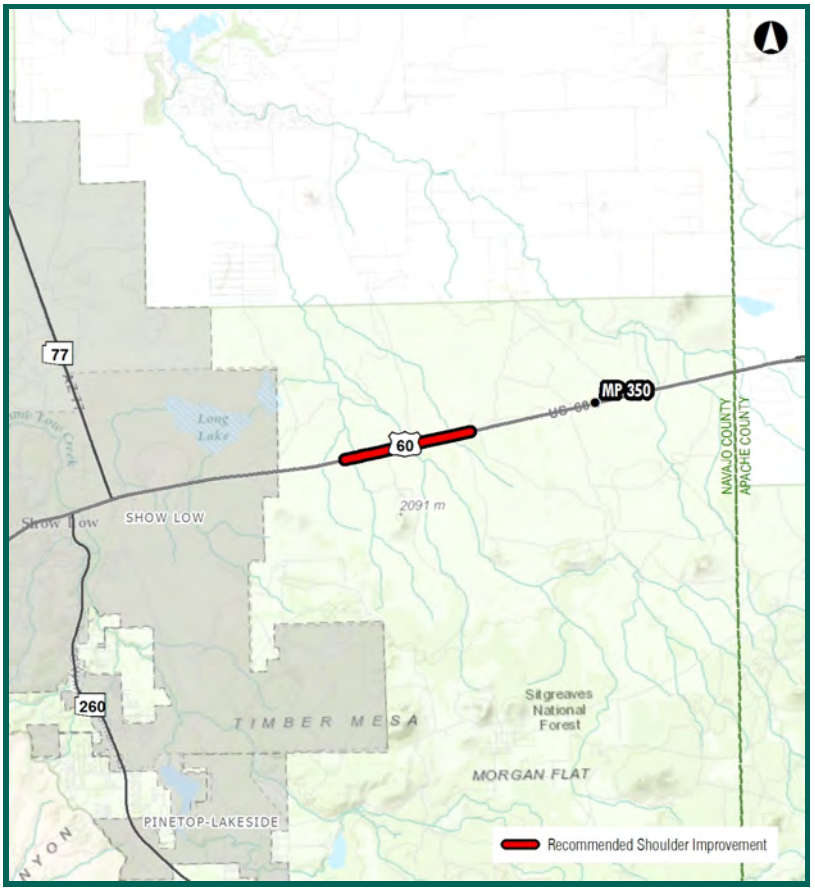
Cost Estimate: $2,159,922

Environmental Overview

Land Ownership: Apache-Sitgreaves N.F

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wetlands





S 287: MP 116.4 - MP 118 (Both Directions)

Statewide Rank: 42

Project Details

Route: S 287	**Direction:** Both Directions
BMP: 116.4	**Tier Level:** 1
EMP: 118.0	**District Rank:** 1
District: Tucson	**Left Shoulder:** 2 to 6 FT
County: Pinal	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Urban Local	
Wideload Corridor: No	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 0.26	**Terrain:** Level
Speed Limit(mph): 55	**K-Factor:** 8
Existing AADT: 5951	**Future AADT:** 5500
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 13

Safety Analysis

Total Number of Crashes:	4
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	1
Non-Injury Crashes:	3
Equivalent Property Damage Value:	10
Crash Rate:	0.22

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

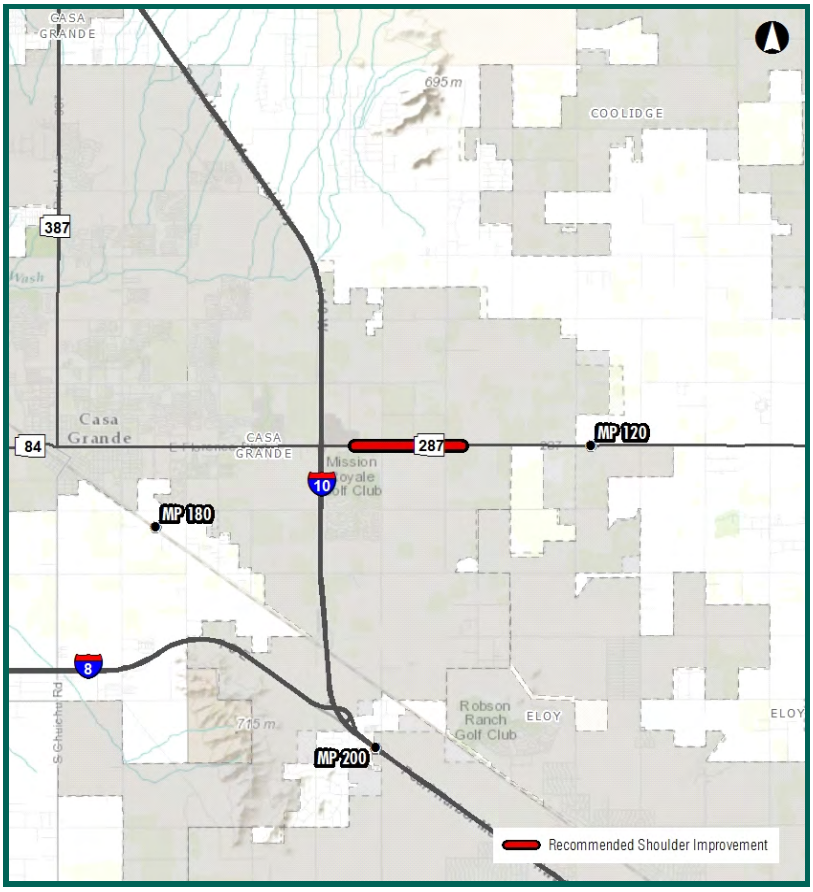
General Location Assessment: Part of the segment is curbed (MP 116.7 - 116.7); Narrow shoulder; Shoulders in deteriorating condition

Cost Estimate: $1,476,000

Environmental Overview

Land Ownership: Tonto N.F

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wetlands; Leaking underground storage tank; PM10 Nonattainment Area; Can expand project to MP 122



S 077: MP 386 - MP 387.8 (Both Directions)

Statewide Rank: 43

Project Details

Route: S 077	**Direction:** Both Directions
BMP: 386.0	**Tier Level:** 1
EMP: 387.8	**District Rank:** 13
District: Holbrook	**Left Shoulder:** 2 to 6 FT
County: Navajo	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial

Wideload Corridor: No	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 3.59	**Terrain:** Rolling
Speed Limit(mph): 55	**K-Factor:** 8
Existing AADT: 3065	**Future AADT:** 7800
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 23

Safety Analysis

Total Number of Crashes:	12
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	7
Non-Injury Crashes:	5
Equivalent Property Damage Value:	23
Crash Rate:	0.48

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

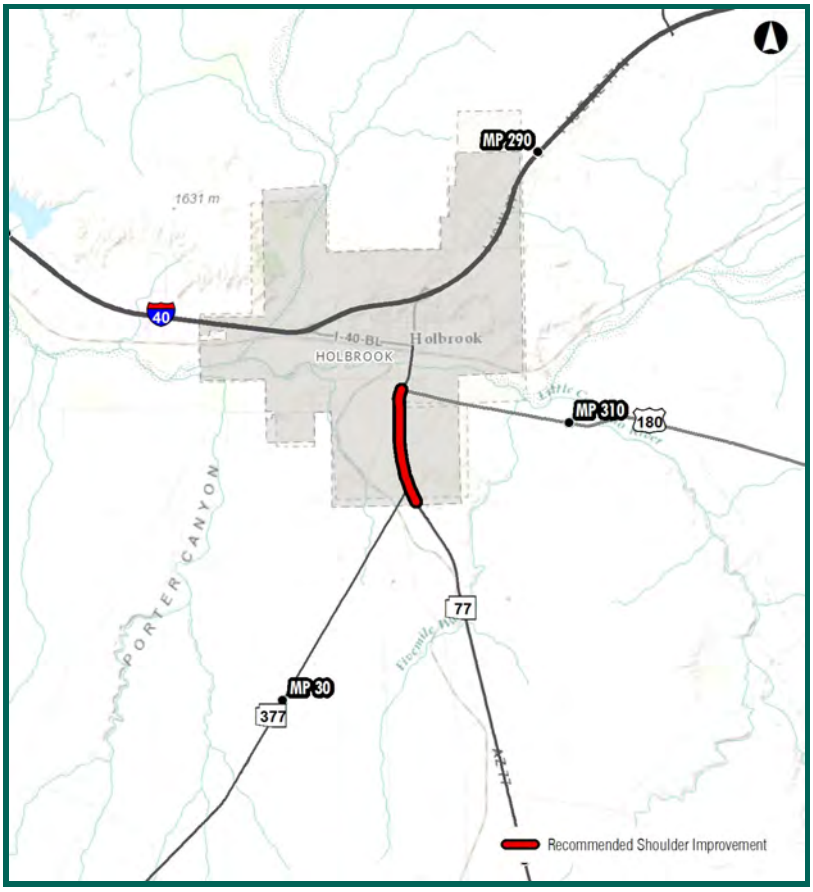
General Location Assessment: Ample room to widen roadway; Unpaved shoulder; Multiple intersecting roadways

Cost Estimate: $1,811,700

Environmental Overview

Land Ownership: Private Land, County Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone;100-Yr Floodplain; Leaking underground storage tank



S 095: MP 154.8 - MP 158 (Both Directions)

Statewide Rank: 44

Project Details

Route: S 095	**Direction:** Both Directions
BMP: 154.8	**Tier Level:** 1
EMP: 158.0	**District Rank:** 10
District: Yuma	**Left Shoulder:** 2 to 6 FT
County: La Paz	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 4.05	**Terrain:** Mountainous
Speed Limit(mph): 55	**K-Factor:** 10
Existing AADT: 6086	**Future AADT:** 8100
Existing LOS: C	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 19

Safety Analysis

Total Number of Crashes:	24
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	10
Non-Injury Crashes:	14
Equivalent Property Damage Value:	57
Crash Rate:	0.68

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

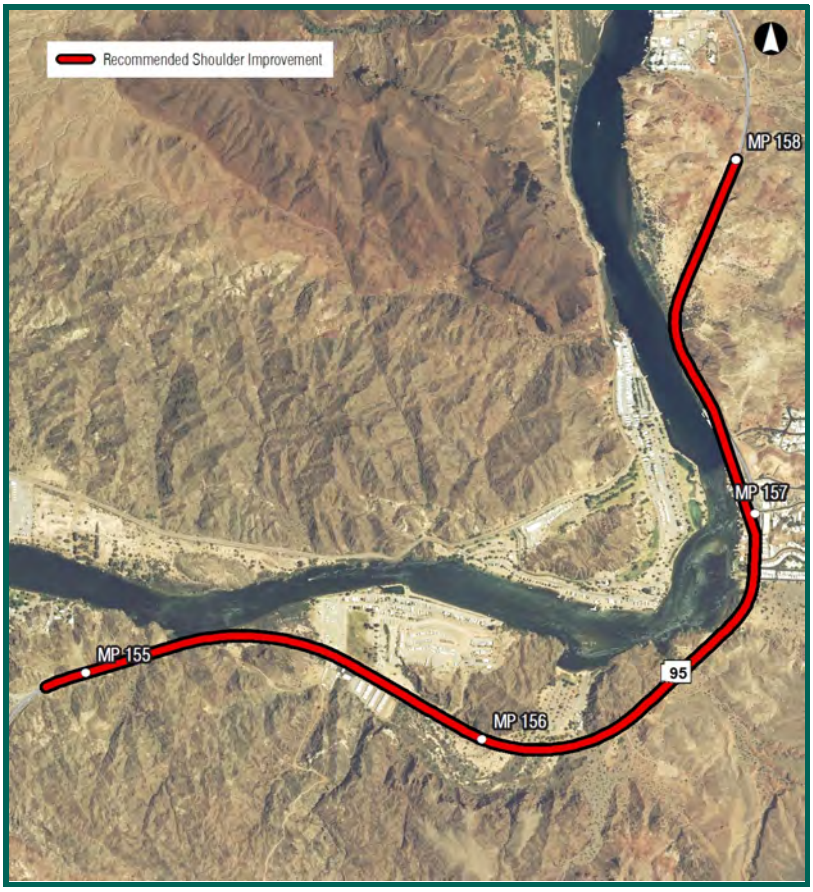
General Location Assessment: Roadside slopes may limit construction; Paved shoulder in good condition; Multiple intersecting streets

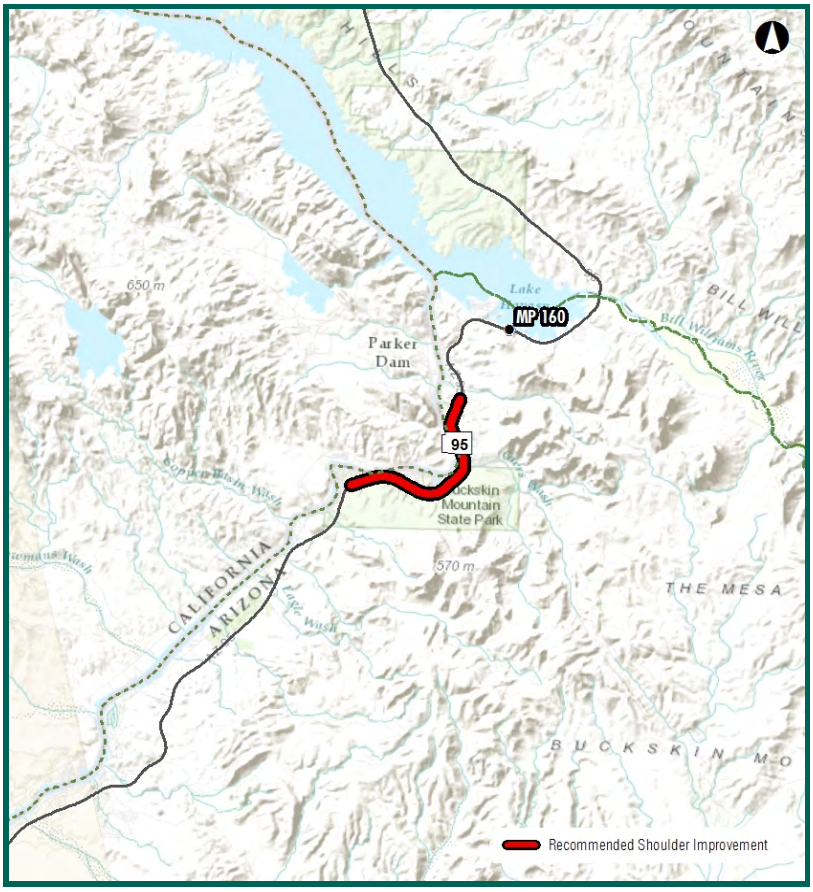
Cost Estimate: $3,618,470

Environmental Overview

Land Ownership: Private Land, State Trust Land, Bureau of Land Mgmt., Buckskin Mountain SP

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Parker Strip SRMA; Suitable Desert Tortoise Habitat; Riparian Habitats; Impaired Waters; Wetlands;100-Yr Floodplain; Critical Habitat Area





S 064: MP 236 - MP 237 (Both Directions)

Statewide Rank: 45

Project Details

Route: S 064	**Direction:** Both Directions
BMP: 236.0	**Tier Level:** 1
EMP: 237.0	**District Rank:** 4
District: Flagstaff	**Left Shoulder:** 2 to 6 FT
County: Coconino	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: No	**Pullouts:** Yes
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 3.82	**Terrain:** Rolling
Speed Limit(mph): 45	**K-Factor:** 10
Existing AADT: 6848	**Future AADT:** 8900
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 15

Safety Analysis

Total Number of Crashes:	15
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	1
Non-Injury Crashes:	14
Equivalent Property Damage Value:	16
Crash Rate:	1.2

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

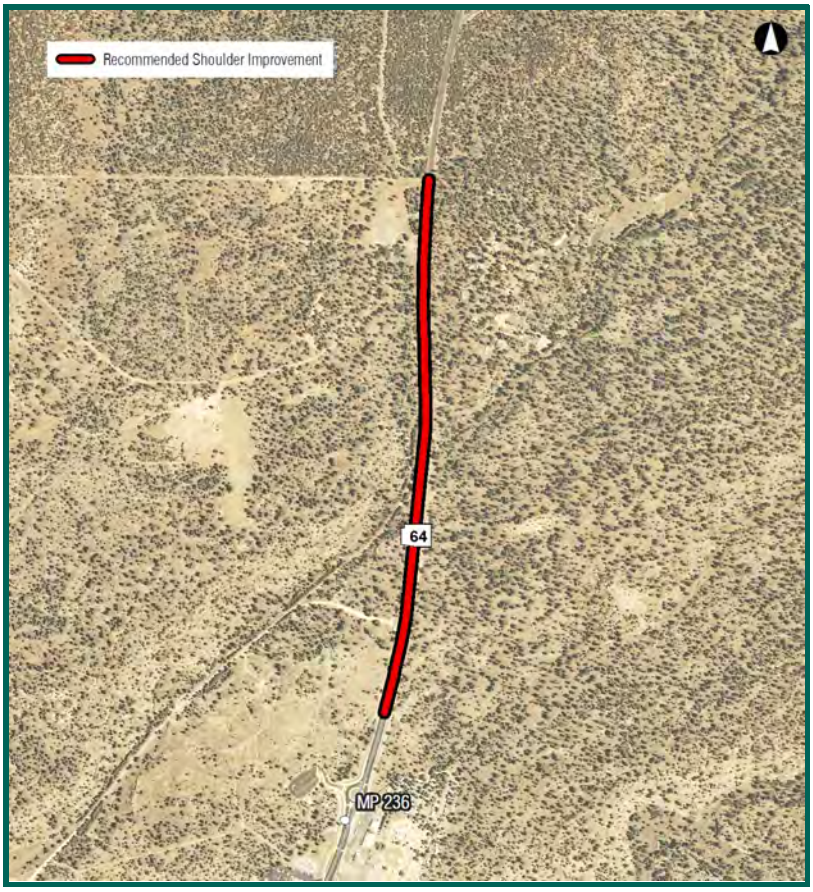
General Location Assessment: No Shoulder; Roadside slopes may limit construction

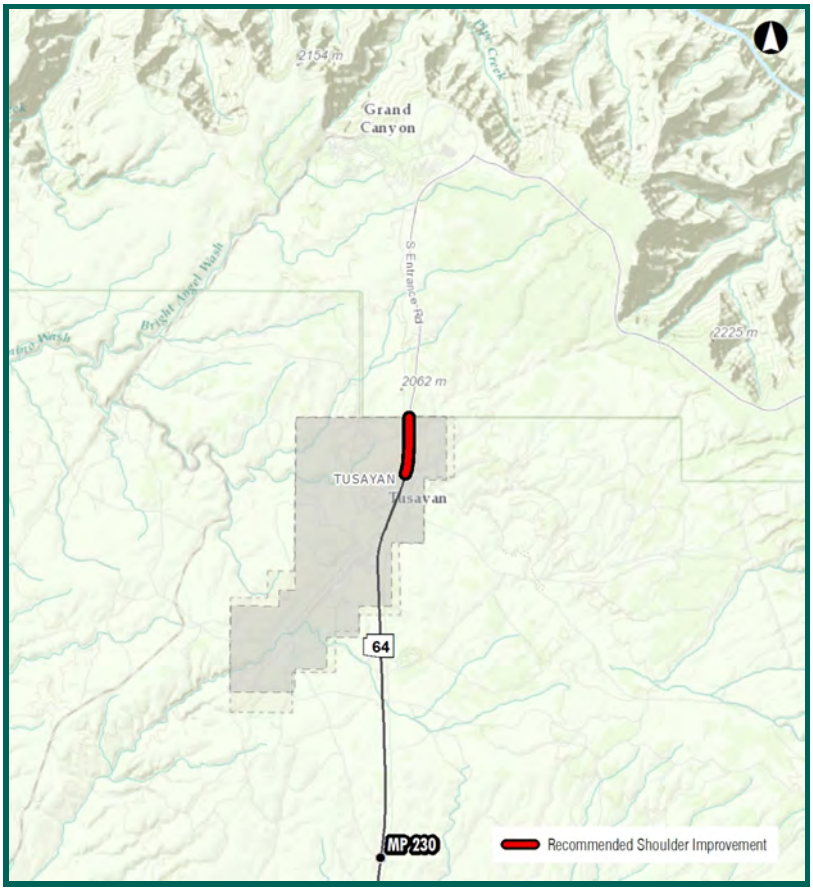
Cost Estimate: $990,000

Environmental Overview

Land Ownership: Kaibab N.F

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: active fault lines; Leaking underground storage tank





S 095: MP 170 - MP 172 (Both Directions)

Statewide Rank: 46

Project Details

Route: S 095	**Direction:** Both Directions
BMP: 170.0	**Tier Level:** 1
EMP: 172.0	**District Rank:** 5
District: Kingman	**Left Shoulder:** 2 to 6 FT
County: Mohave	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 1.54	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 9
Existing AADT: 5621	**Future AADT:** 8800
Existing LOS: D	**Future LOS:** D
Directional Split: 59 / 41	**Truck %:** 23

Safety Analysis

Total Number of Crashes:	13
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	5
Non-Injury Crashes:	7
Equivalent Property Damage Value:	40
Crash Rate:	0.63

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

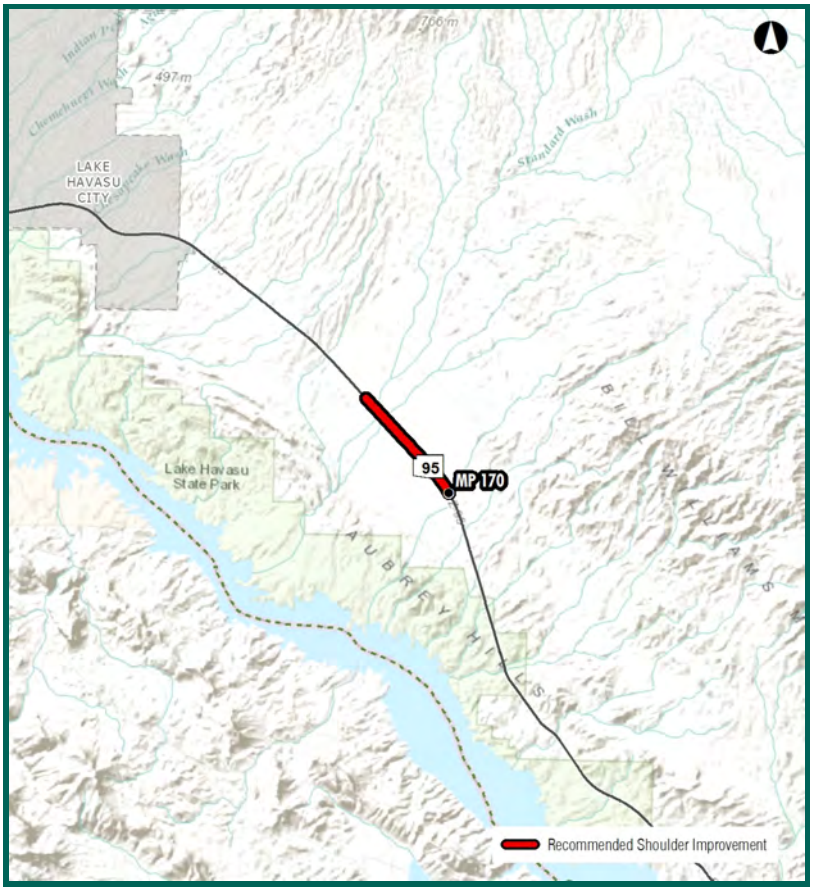
General Location Assessment: Paved shoulders in good condition; Ample room to widen roadway; Multiple intersecting roadways; Portions of eastbound and westbound are to standard

Cost Estimate: $2,281,576

Environmental Overview

Land Ownership: Bureau of Land Mgmt.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Lake Havasu SRMA; Suitable Desert Tortoise Habitat; Wildlife Linkage Zone;100-Yr Floodplain



S 077: MP 106 - MP 108 (Both Directions)

Statewide Rank: 47

Project Details

Route: S 077	**Direction:** Both Directions
BMP: 106.0	**Tier Level:** 1
EMP: 108.0	**District Rank:** 2
District: Tucson	**Left Shoulder:** 2 to 6 FT
County: Pinal	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial

Wideload Corridor: No	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 5.87	**Terrain:** Rolling
Speed Limit(mph): 55	**K-Factor:** 8
Existing AADT: 4566	**Future AADT:** 7300
Existing LOS: C	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 12

Safety Analysis

Total Number of Crashes:	31
Number of Fatal Crashes:	2
Injury & Possible Injury Crashes:	12
Non-Injury Crashes:	17
Equivalent Property Damage Value:	94
Crash Rate:	1.86

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

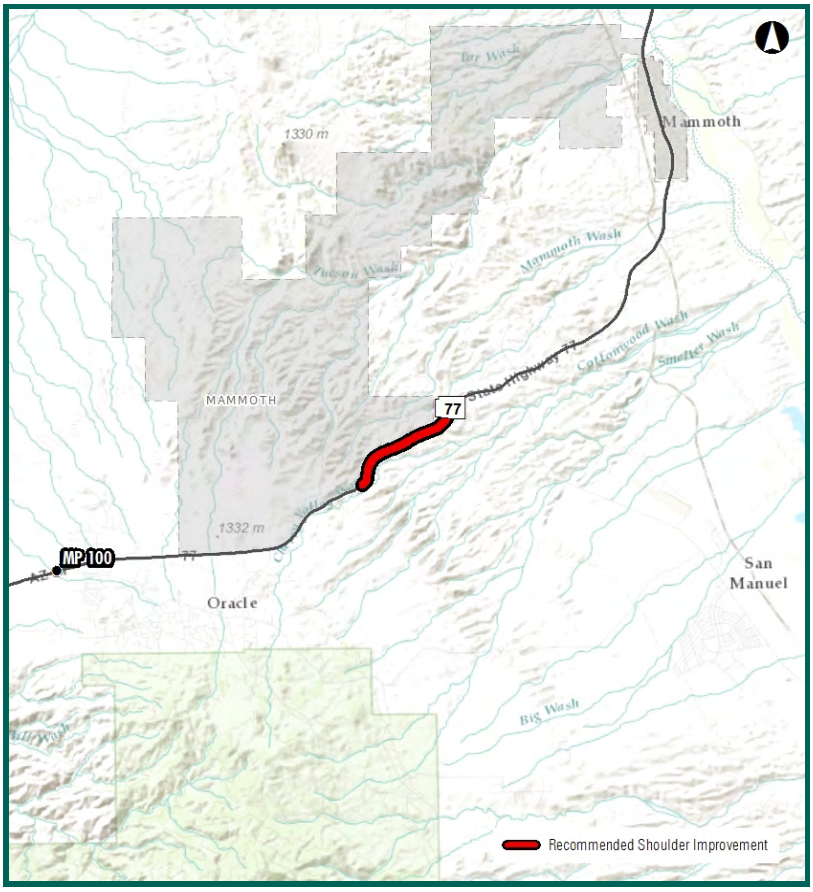
General Location Assessment: Narrow shoulder; Roadside slopes may limit construction

Cost Estimate: $1,980,000

Environmental Overview

Land Ownership: Private Land, State Trust Land, Oracle SP

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: 100-Yr Floodplain



S 080: MP 293.5 - MP 293.7 (Both Directions)

Statewide Rank: 48

Project Details

Route: S 080	**Direction:** Both Directions
BMP: 293.5	**Tier Level:** 1
EMP: 293.7	**District Rank:** 2
District: Safford	**Left Shoulder:** 2 to 6 FT
County: Cochise	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: No	**Guardrail:** No
Terrain/Max Slope: 1.47	**Terrain:** Level
Speed Limit(mph): 50	**K-Factor:** 9
Existing AADT: 8856	**Future AADT:** 13500
Existing LOS: D	**Future LOS:** D
Directional Split: 50 / 50	**Truck %:** 22

Safety Analysis

Total Number of Crashes:	13
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	6
Non-Injury Crashes:	7
Equivalent Property Damage Value:	26
Crash Rate:	0.68

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

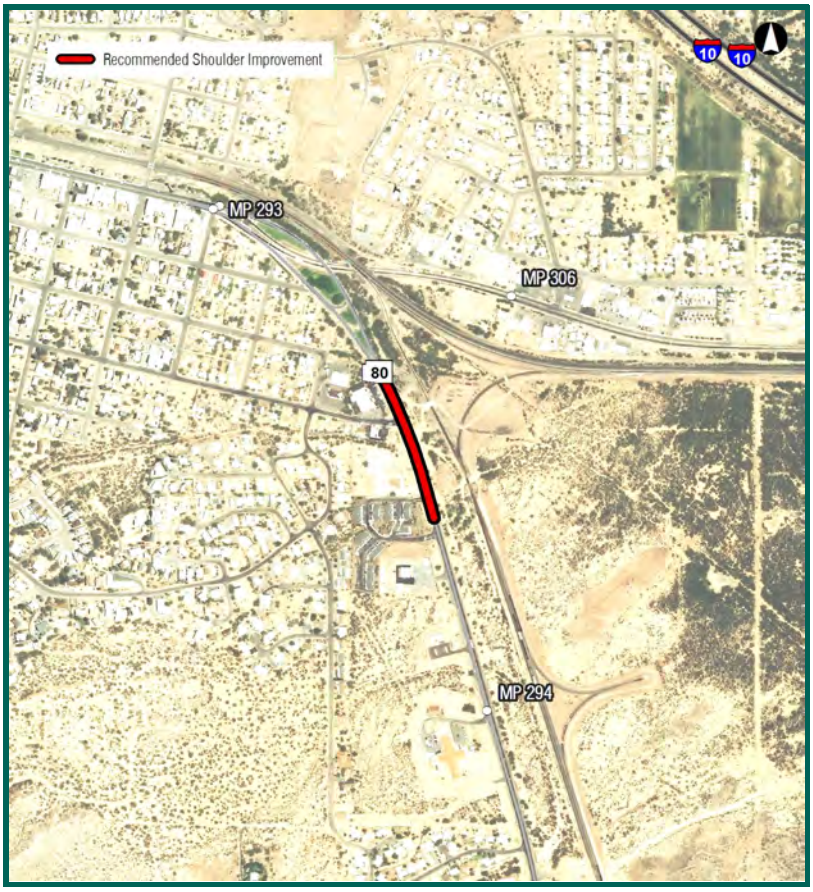
General Location Assessment: Paved portion of shoulders in deteriorating condition; Ample room to expand roadway

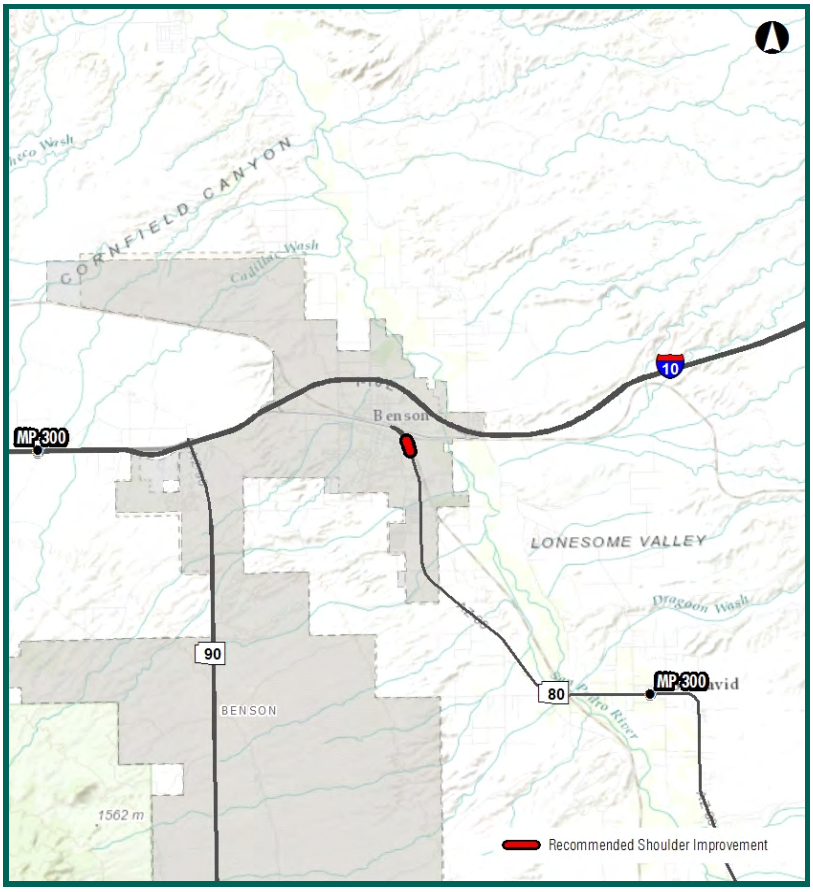
Cost Estimate: $171,000

Environmental Overview

Land Ownership: Private Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Leaking underground storage tank





S 260: MP 256.8 - MP 260.1 (Both Directions)

Statewide Rank: 49

Project Details

Route: S 260	**Direction:** Both Directions
BMP: 256.8	**Tier Level:** 1
EMP: 260.1	**District Rank:** 3
District: Prescott	**Left Shoulder:** Less than 2 FT
County: Gila	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: No	**Pullouts:** Yes
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 3.46	**Terrain:** Rolling
Speed Limit(mph): 55	**K-Factor:** 23
Existing AADT: 8355	**Future AADT:** 9000
Existing LOS: E	**Future LOS:** E
Directional Split: 48 / 52	**Truck %:** 5

Safety Analysis

Total Number of Crashes:	69
Number of Fatal Crashes:	2
Injury & Possible Injury Crashes:	17
Non-Injury Crashes:	50
Equivalent Property Damage Value:	131
Crash Rate:	1.4

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

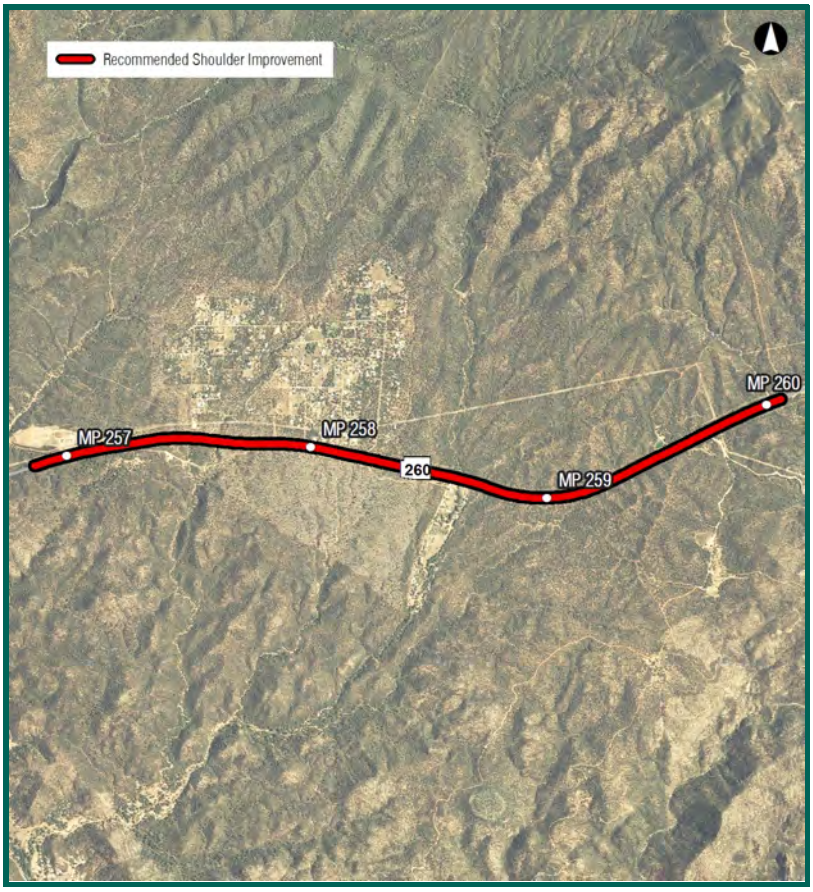
General Location Assessment: Narrow shoulders; Paved shoulders in good condition; Multiple intersecting roadways; Ample room to widen roadway

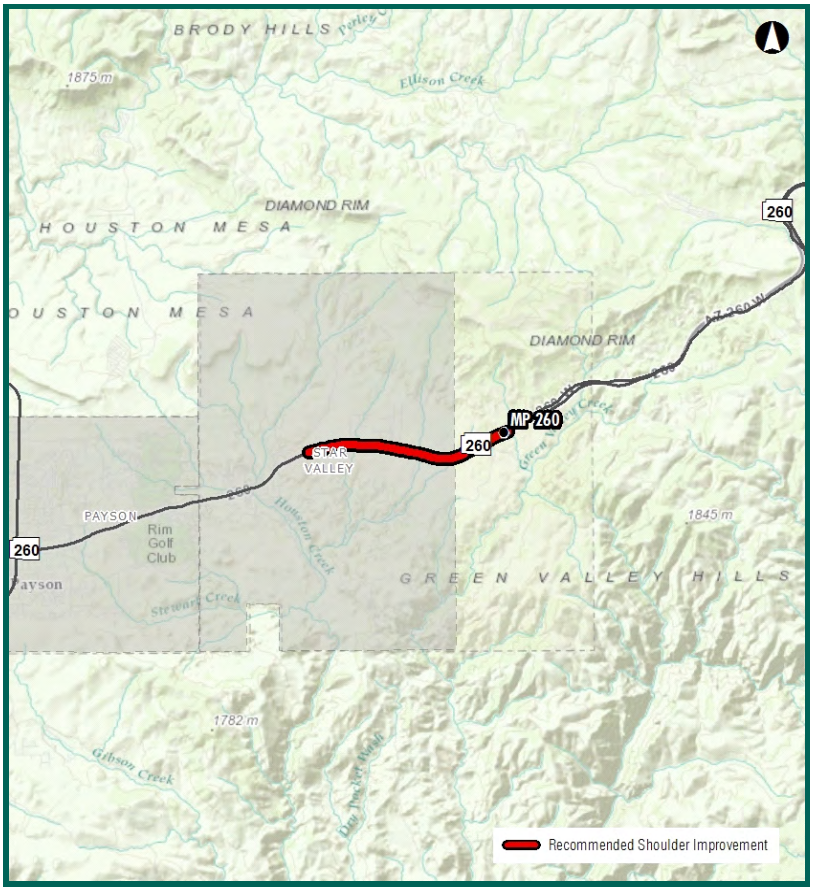
Cost Estimate: $5,595,975

Environmental Overview

Land Ownership: Tonto N.F

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone





S 077: MP 103.8 - MP 106 (Both Directions)

Statewide Rank: 50

Project Details

Route: S 077	**Direction:** Both Directions
BMP: 103.8	**Tier Level:** 1
EMP: 106.0	**District Rank:** 3
District: Tucson	**Left Shoulder:** Less than 2 FT
County: Pinal	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Major Collector

Wideload Corridor: No	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 5.82	**Terrain:** Rolling
Speed Limit(mph): 55	**K-Factor:** 9
Existing AADT: 4149	**Future AADT:** 6200
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 11

Safety Analysis

Total Number of Crashes:	32
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	14
Non-Injury Crashes:	17
Equivalent Property Damage Value:	91
Crash Rate:	1.94

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

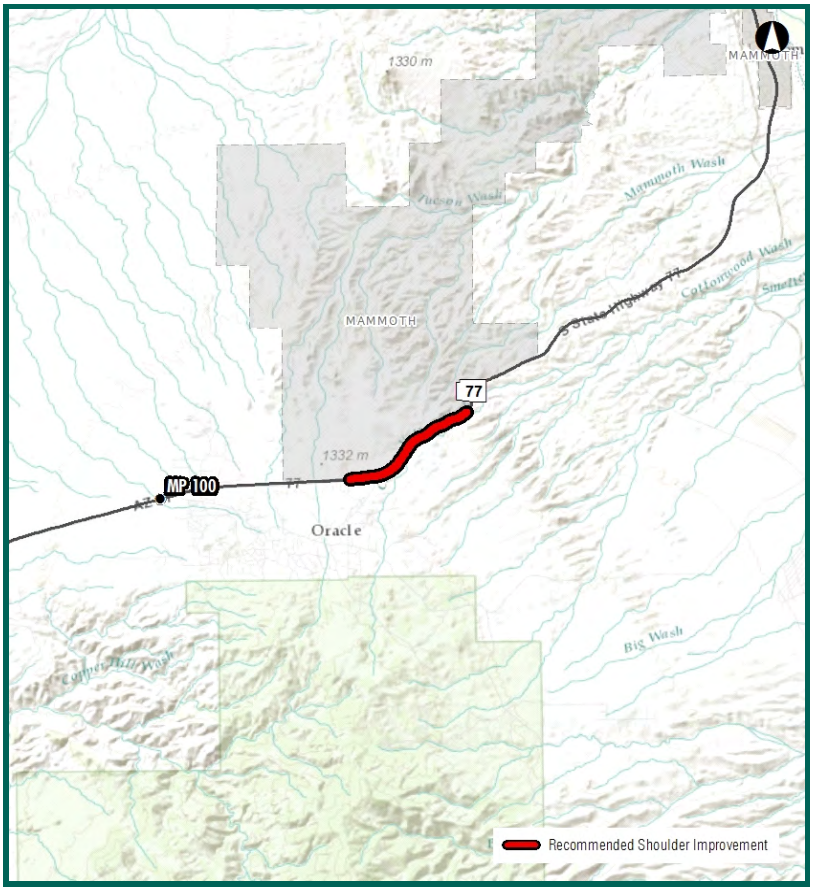
General Location Assessment: Narrow shoulder; Roadside slopes may limit construction

Cost Estimate: $3,776,850

Environmental Overview

Land Ownership: Private Land, State Trust Land, Oracle SP

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: 100-Yr Floodplain



S 087: MP 268 - MP 270 (Both Directions)

Statewide Rank: 51

Project Details

Route: S 087	**Direction:** Both Directions
BMP: 268.0	**Tier Level:** 1
EMP: 270.0	**District Rank:** 4
District: Prescott	**Left Shoulder:** Less than 2 FT
County: Gila	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Rural Local	
Wideload Corridor: No	**Pullouts:** Yes
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 6.28	**Terrain:** Mountainous
Speed Limit(mph): 50	**K-Factor:** 10
Existing AADT: 4327	**Future AADT:** 5200
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 10

Safety Analysis

Total Number of Crashes:	37
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	11
Non-Injury Crashes:	26
Equivalent Property Damage Value:	71
Crash Rate:	2.34

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

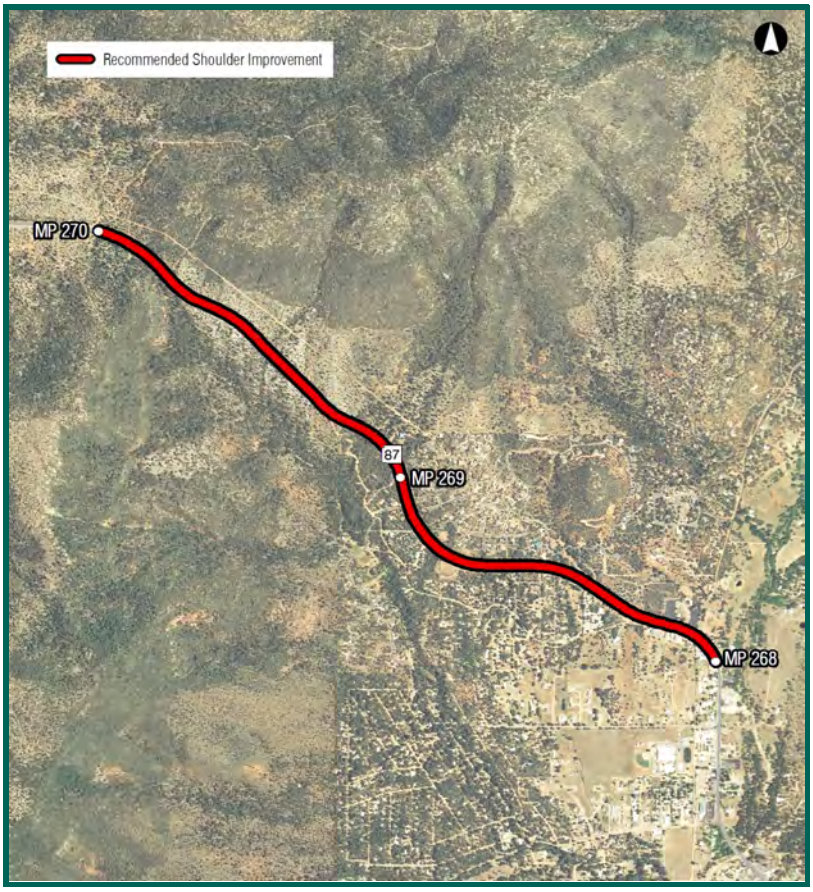
General Location Assessment: Structures along segment; Narrow shoulders; Paved shoulders in good condition

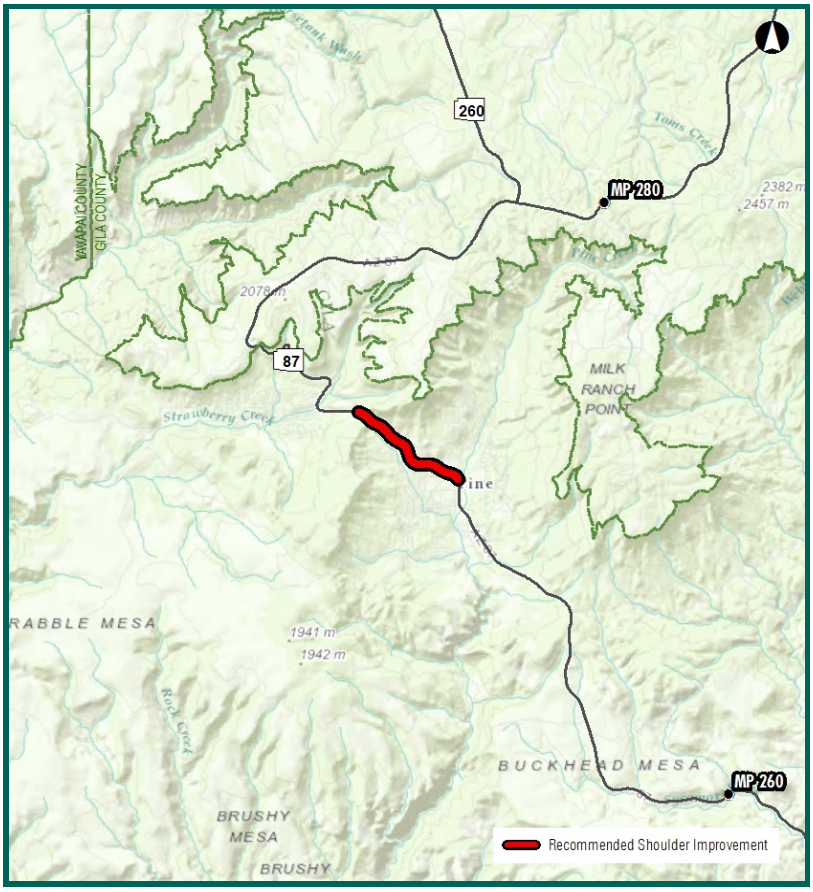
Cost Estimate: $3,780,000

Environmental Overview

Land Ownership: Tonto N.F, Private Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Wetlands;100-Yr Floodplain; Critical Habitat Area





S 264: MP 446 - MP 448 (Both Directions)

Statewide Rank: 52

Project Details

Route: S 264	**Direction:** Both Directions
BMP: 446.0	**Tier Level:** 1
EMP: 448.0	**District Rank:** 14
District: Holbrook	**Left Shoulder:** Less than 2 FT
County: Apache	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 5.87	**Terrain:** Rolling
Speed Limit(mph): 40	**K-Factor:** 14
Existing AADT: 6223	**Future AADT:** 5900
Existing LOS: D	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 6

Safety Analysis

Total Number of Crashes:	4
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	2
Non-Injury Crashes:	1
Equivalent Property Damage Value:	19
Crash Rate:	0.18

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

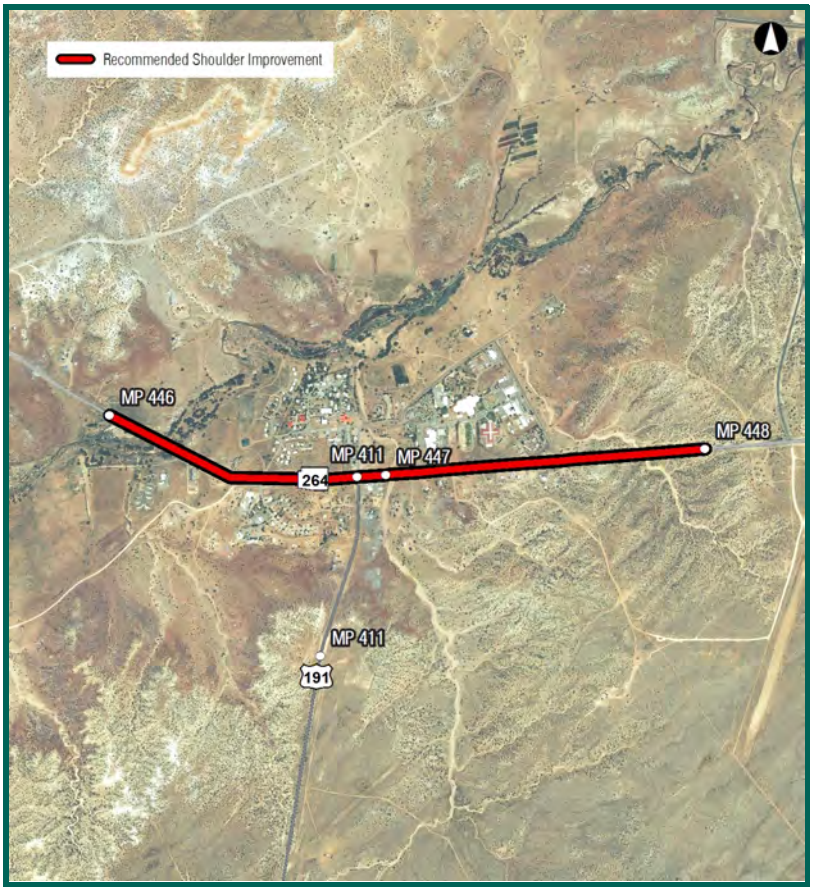
General Location Assessment: Ample room to widen roadway; Multiple intersecting roadways; Paved shoulders in good condition

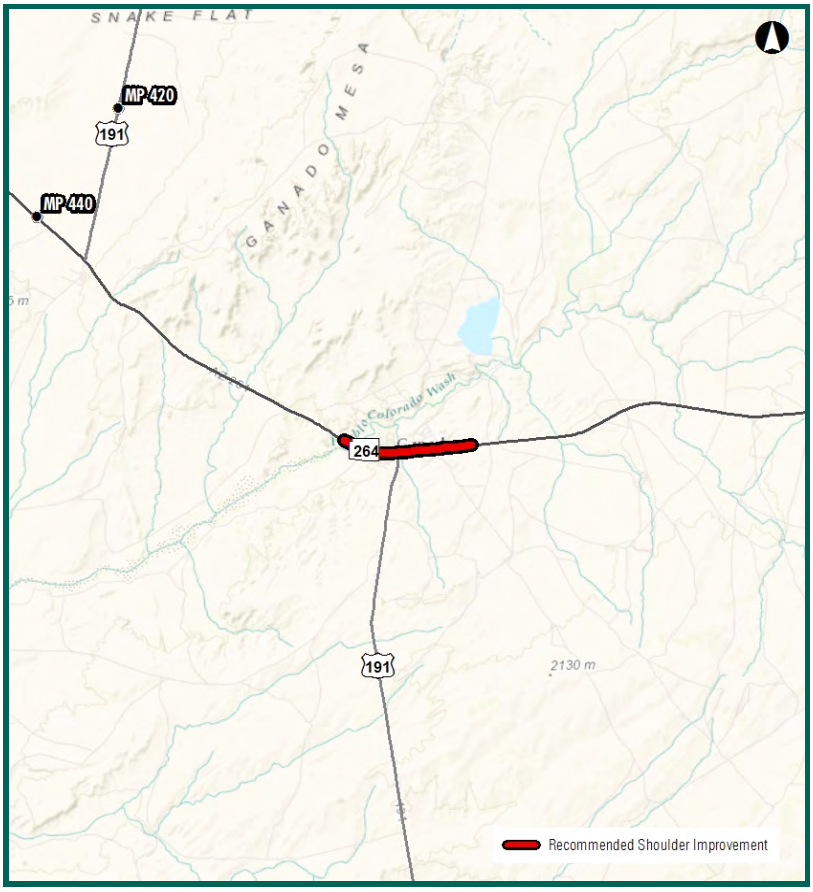
Cost Estimate: $4,049,606

Environmental Overview

Land Ownership: Navajo Indian Res., Hubble NHS, Private Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints





U 160: MP 390 - MP 392 (Both Directions)

Statewide Rank: 53

Project Details

Route: U 160	**Direction:** Both Directions
BMP: 390.0	**Tier Level:** 1
EMP: 392.0	**District Rank:** 15
District: Holbrook	**Left Shoulder:** 2 to 6 FT
County: Navajo	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 2.53	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 11
Existing AADT: 4679	**Future AADT:** 6200
Existing LOS: C	**Future LOS:** C
Directional Split: 50 / 50	**Truck %:** 10

Safety Analysis

Total Number of Crashes:	9
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	6
Non-Injury Crashes:	2
Equivalent Property Damage Value:	26
Crash Rate:	0.53

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

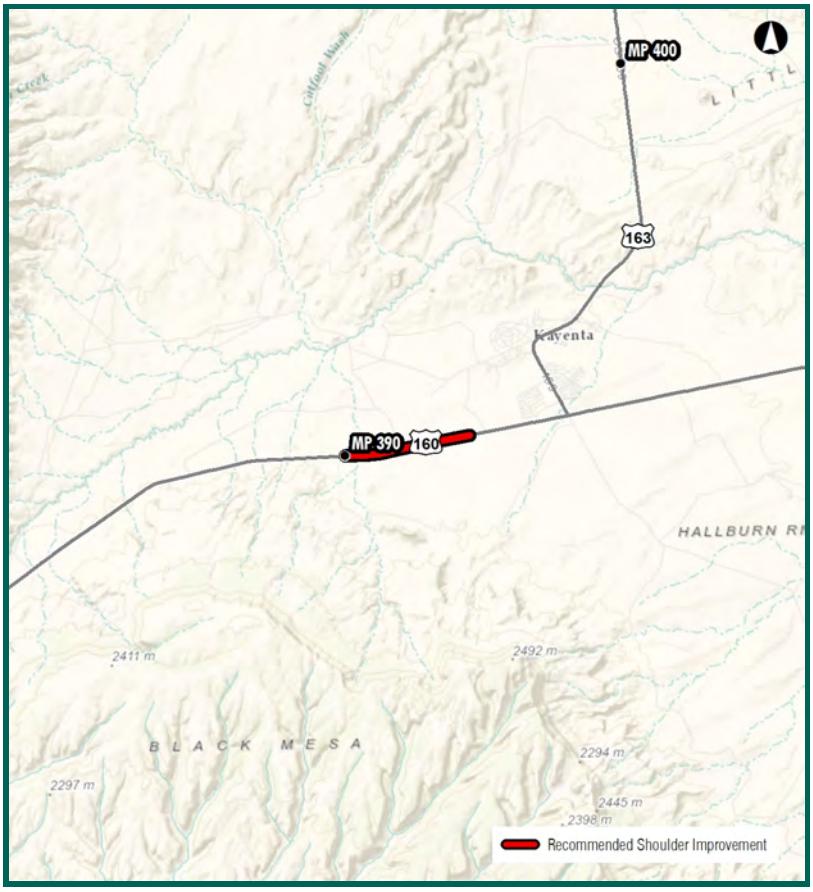
General Location Assessment: Paved shoulder in good condition; Ample room to widen roadway; Multiple intersecting roadways

Cost Estimate: $1,850,394

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone



S 095: MP 174 - MP 176.9 (Both Directions)

Statewide Rank: 54

Project Details

Route: S 095	**Direction:** Both Directions
BMP: 174.0	**Tier Level:** 1
EMP: 176.9	**District Rank:** 6
District: Kingman	**Left Shoulder:** 2 to 6 FT
County: Mohave	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 3.41	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 11
Existing AADT: 3000	**Future AADT:** 8800
Existing LOS: C	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 25

Safety Analysis

Total Number of Crashes:	21
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	10
Non-Injury Crashes:	10
Equivalent Property Damage Value:	71
Crash Rate:	1.34

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

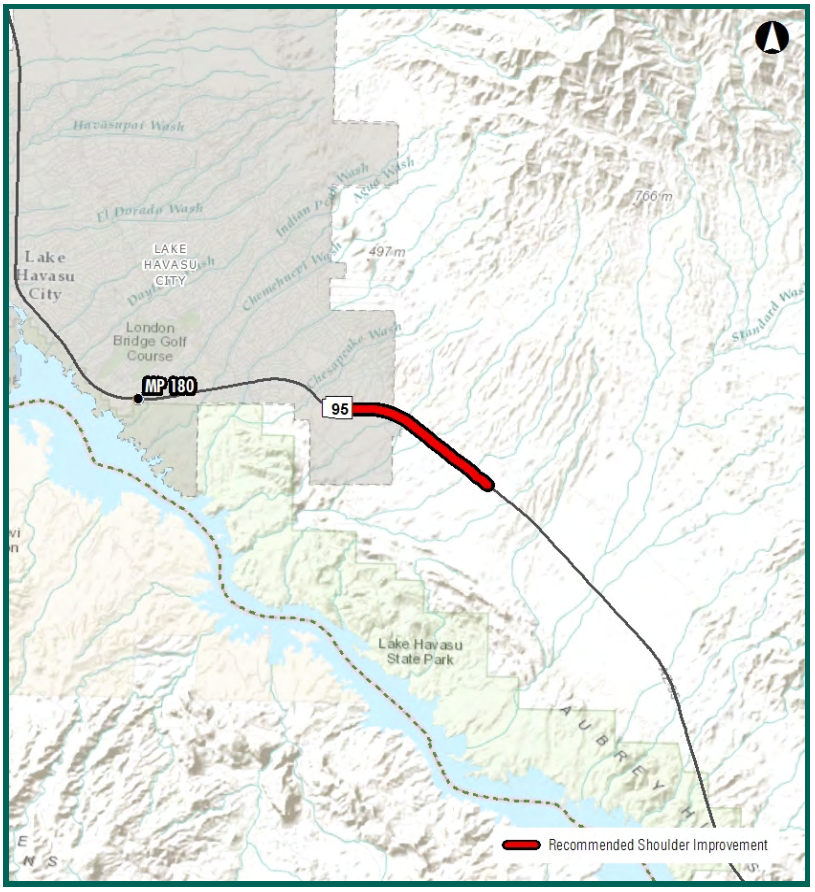
General Location Assessment: Paved shoulders in deteriorating condtion; Ample room to widen roadway

Cost Estimate: $2,762,528

Environmental Overview

Land Ownership: Private Land, State Trust Land, Bureau of Land Mgmt.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Lake Havasu SRMA; Suitable Desert Tortoise Habitat;100-Yr Floodplain



S 064: MP 224 - MP 226 (Both Directions)

Statewide Rank: 55

Project Details

Route: S 064	**Direction:** Both Directions
BMP: 224.0	**Tier Level:** 1
EMP: 226.0	**District Rank:** 5
District: Flagstaff	**Left Shoulder:** 2 to 6 FT
County: Coconino	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: No	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 3.35	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 14
Existing AADT: 4679	**Future AADT:** 6200
Existing LOS: D	**Future LOS:** D
Directional Split: 51 / 49	**Truck %:** 10

Safety Analysis

Total Number of Crashes:	32
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	4
Non-Injury Crashes:	28
Equivalent Property Damage Value:	44
Crash Rate:	1.87

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

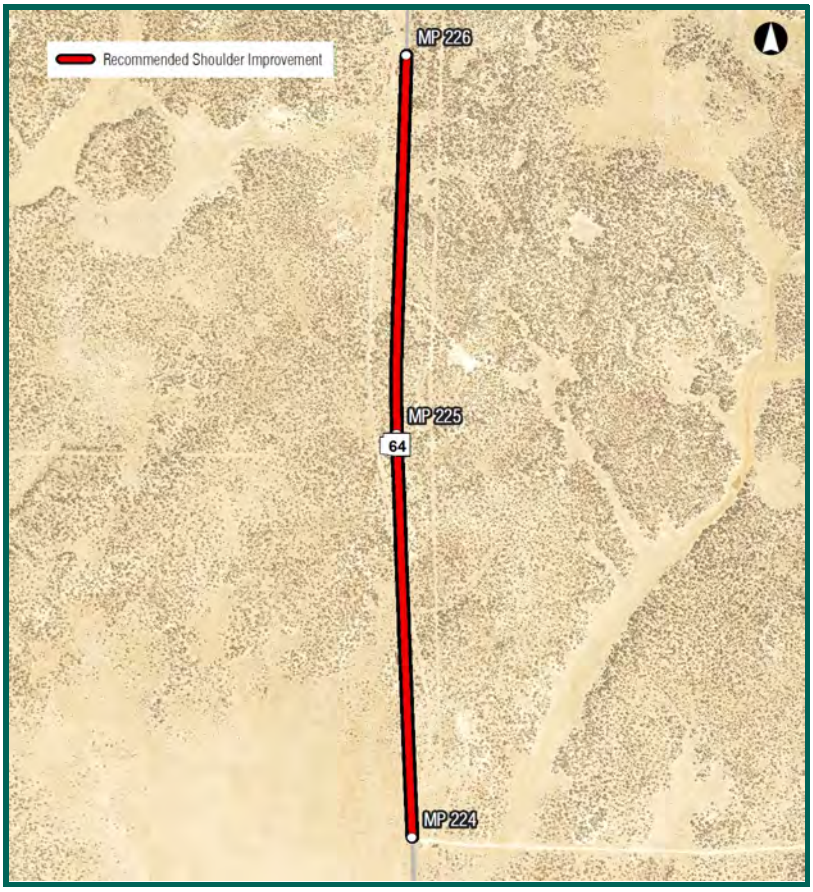
General Location Assessment: Unpaved clear zone adjacent to shoulder; Paved shoulders in good condition; Ample room to widen roadway

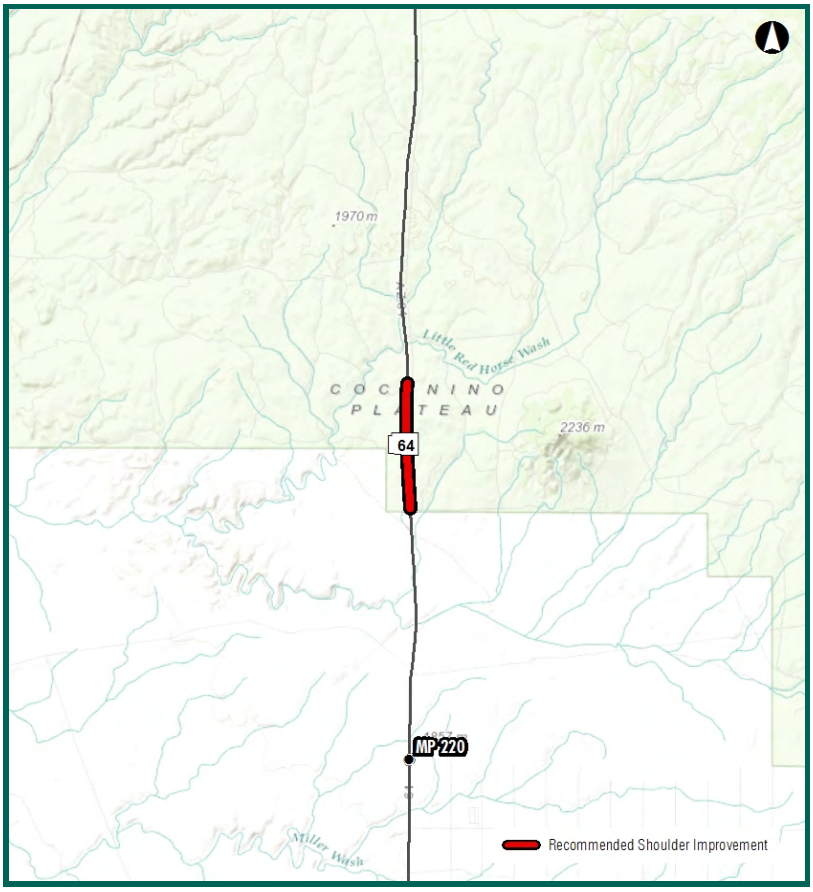
Cost Estimate: $1,800,000

Environmental Overview

Land Ownership: Kaibab N.F

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone





S 169: MP 6 - MP 8 (Both Directions)

Statewide Rank: 56

Project Details

Route: S 169	**Direction:** Both Directions
BMP: 6.0	**Tier Level:** 1
EMP: 8.0	**District Rank:** 5
District: Prescott	**Left Shoulder:** 2 to 6 FT
County: Yavapai	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial

Wideload Corridor: No	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 4.09	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 8
Existing AADT: 5119	**Future AADT:** 7400
Existing LOS: C	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 14

Safety Analysis

Total Number of Crashes:	17
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	5
Non-Injury Crashes:	12
Equivalent Property Damage Value:	24
Crash Rate:	0.91

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

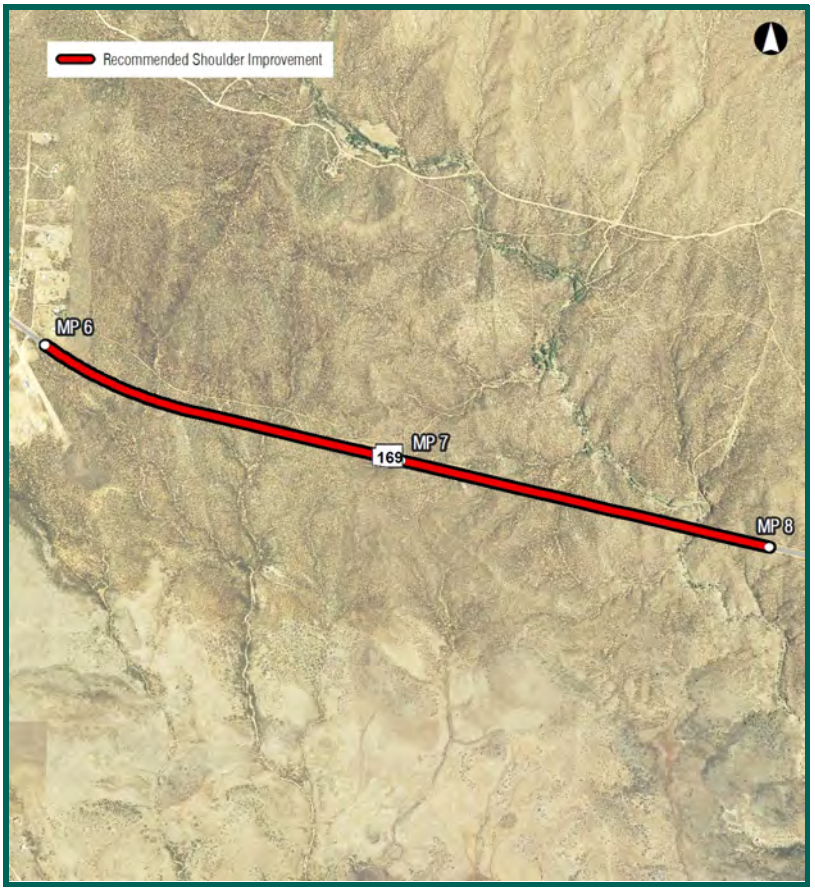
General Location Assessment: Ample room to widen roadway; Paved shoulders in good condition; Bridge on segment requires widening

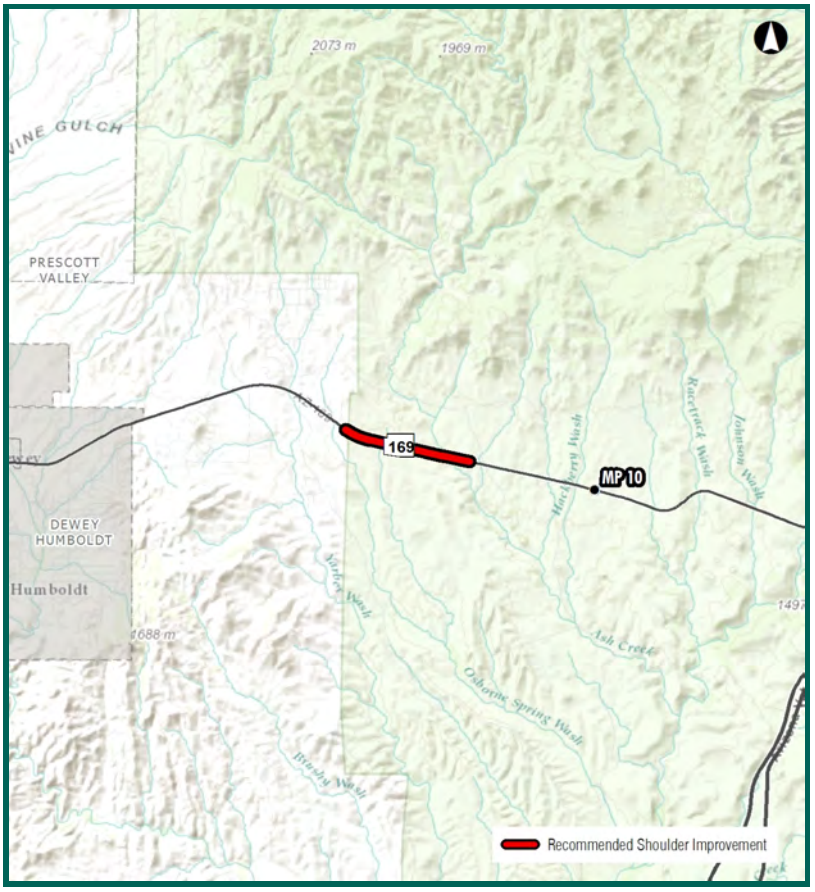
Cost Estimate: $2,070,682

Environmental Overview

Land Ownership: Prescott N.F

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: 100-Yr Floodplain





S 064: MP 230 - MP 232 (Both Directions)

Statewide Rank: 57

Project Details

Route: S 064	**Direction:** Both Directions
BMP: 230.0	**Tier Level:** 1
EMP: 232.0	**District Rank:** 6
District: Flagstaff	**Left Shoulder:** 2 to 6 FT
County: Coconino	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: No	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 3.4	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 14
Existing AADT: 4679	**Future AADT:** 6200
Existing LOS: C	**Future LOS:** D
Directional Split: 51 / 49	**Truck %:** 10

Safety Analysis

Total Number of Crashes:	33
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	7
Non-Injury Crashes:	26
Equivalent Property Damage Value:	50
Crash Rate:	1.93

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

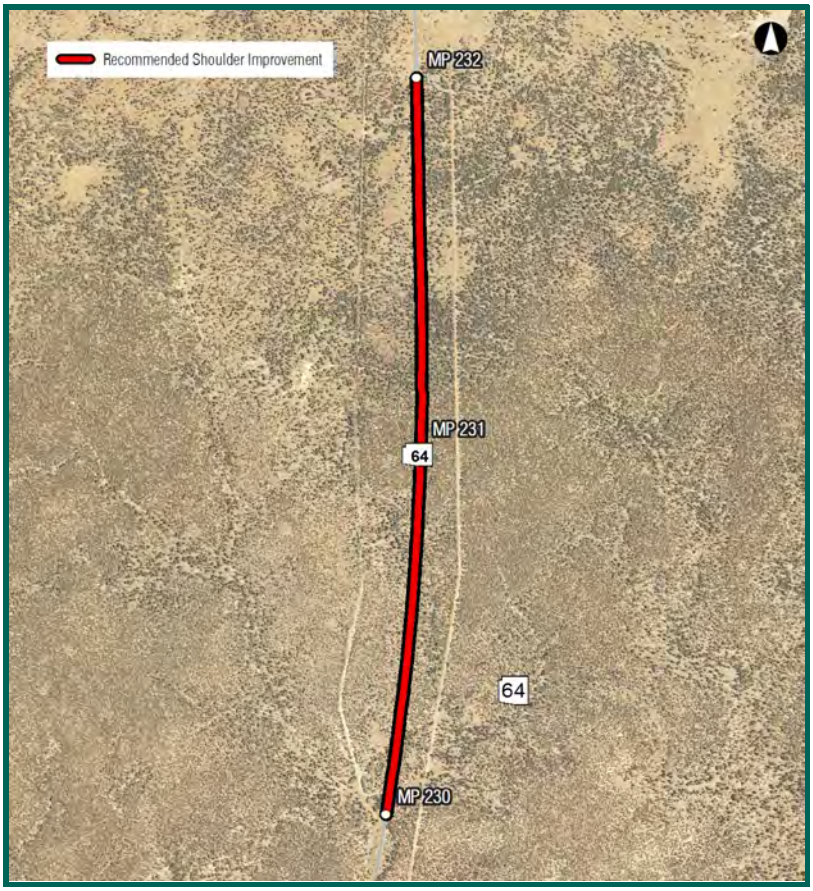
General Location Assessment: Paved shoulders in good condition; Ample room to widen roadway

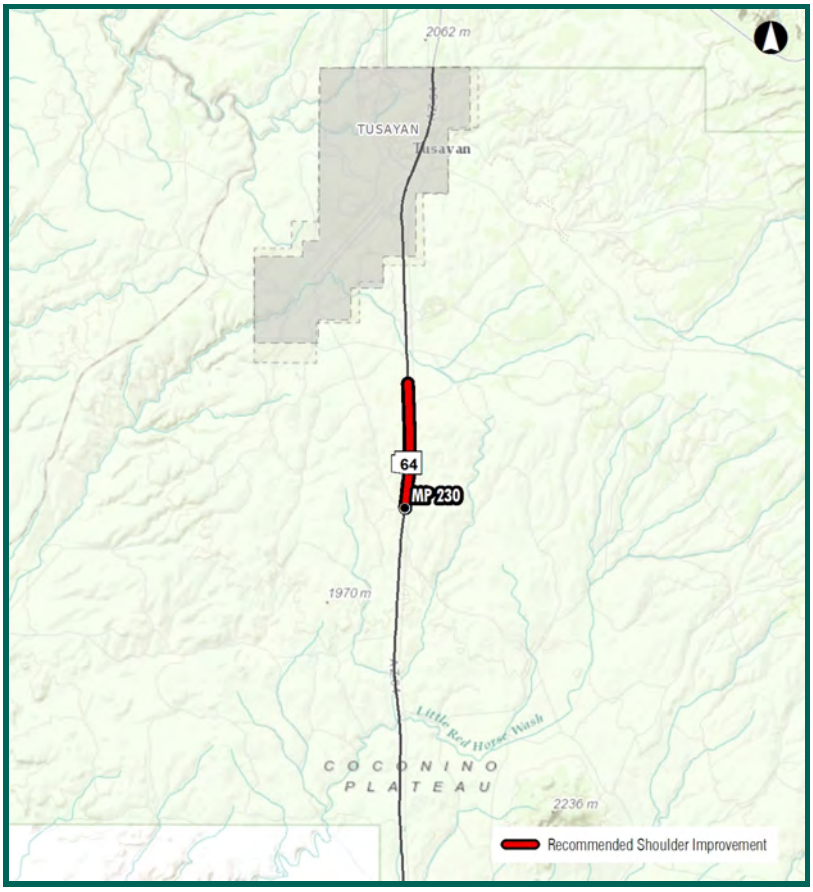
Cost Estimate: $1,980,000

Environmental Overview

Land Ownership: Kaibab N.F

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone





U 160: MP 448 - MP 450 (Both Directions)

Statewide Rank: 58

Project Details

Route: U 160	**Direction:** Both Directions
BMP: 448.0	**Tier Level:** 1
EMP: 450.0	**District Rank:** 16
District: Holbrook	**Left Shoulder:** 2 to 6 FT
County: Apache	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Major Collector

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 1.18	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 33
Existing AADT: 3067	**Future AADT:** 4000
Existing LOS: D	**Future LOS:** E
Directional Split: 52 / 48	**Truck %:** 11

Safety Analysis

Total Number of Crashes:	9
Number of Fatal Crashes:	2
Injury & Possible Injury Crashes:	4
Non-Injury Crashes:	3
Equivalent Property Damage Value:	42
Crash Rate:	0.8

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

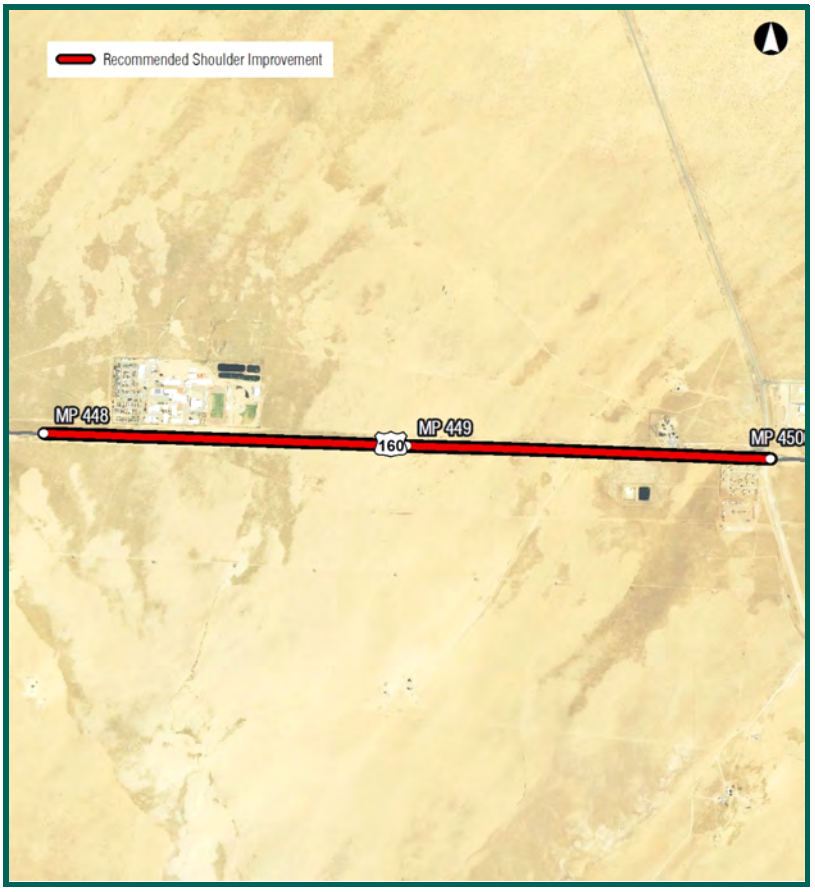
General Location Assessment: Ample room to widen roadway; Paved shoulders in good condition; Multiple intersecting roadways

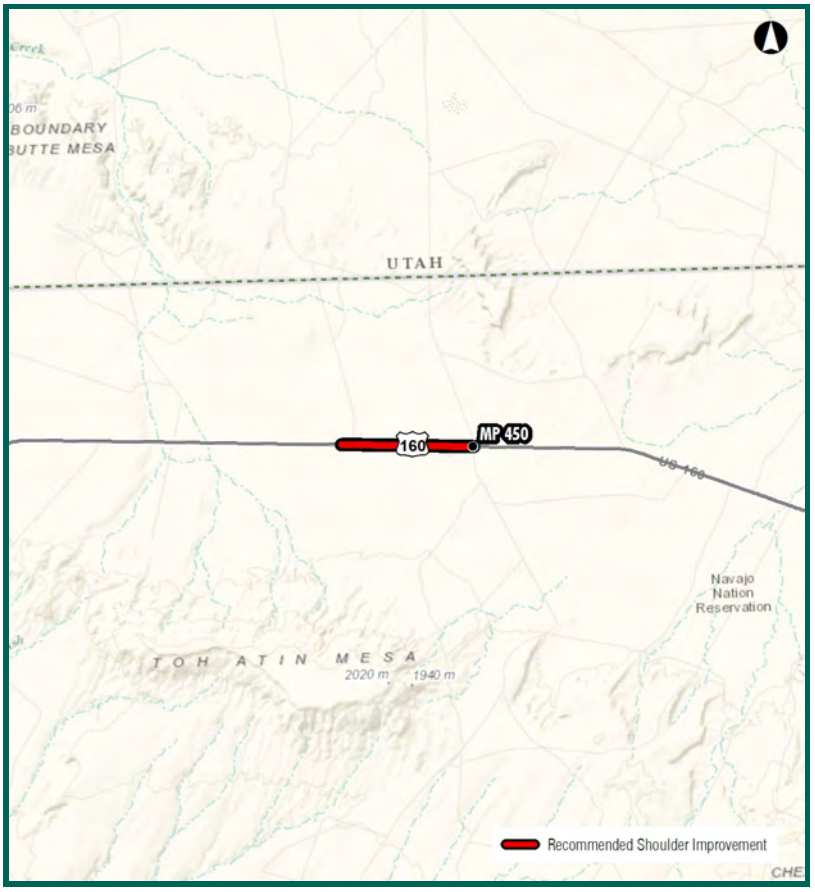
Cost Estimate: $1,800,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wetlands





S 089: MP 320 - MP 320.1 (Both Directions)

Statewide Rank: 59

Project Details

Route: S 089	**Direction:** Both Directions
BMP: 320.0	**Tier Level:** 1
EMP: 320.1	**District Rank:** 6
District: Prescott	**Left Shoulder:** 2 to 6 FT
County: Yavapai	**Right Shoulder:** 6 to 8 FT

Roadway Characteristics

Functional Class: Urban Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: No	**Guardrail:** No
Terrain/Max Slope: 1.64	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 9
Existing AADT: 13248	**Future AADT:** 23500
Existing LOS: D	**Future LOS:** E
Directional Split: 60 / 40	**Truck %:** 11

Safety Analysis

Total Number of Crashes:	90
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	39
Non-Injury Crashes:	51
Equivalent Property Damage Value:	192
Crash Rate:	3.29

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

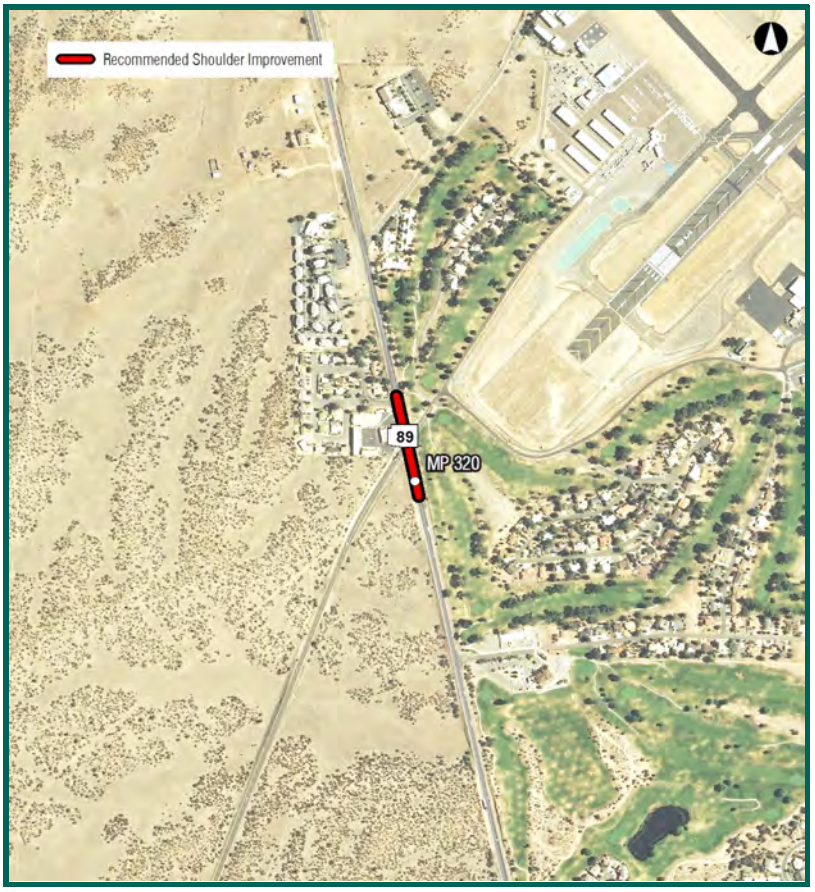
General Location Assessment: Paved shoulders in good condition; Ample room to widen roadway; Intersecting roadway

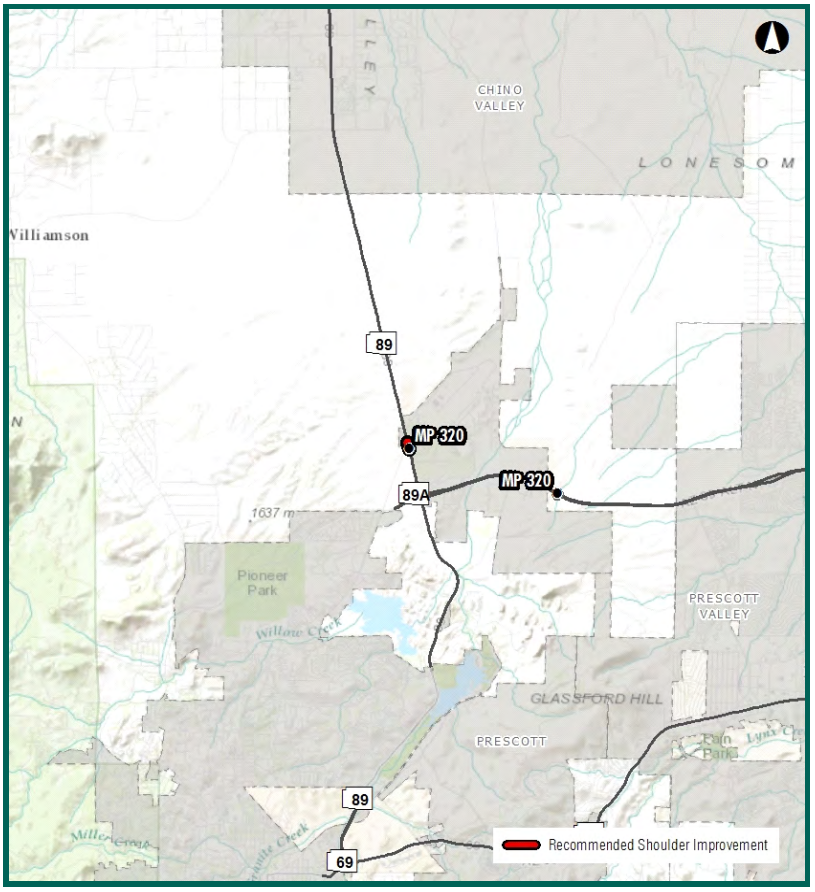
Cost Estimate: $117,000

Environmental Overview

Land Ownership: Private Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Wetlands; Leaking underground storage tank





U 089: MP 474.5 - MP 475.4 (Both Directions)

Statewide Rank: 60

Project Details

Route: U 089	**Direction:** Both Directions
BMP: 474.5	**Tier Level:** 1
EMP: 475.4	**District Rank:** 7
District: Flagstaff	**Left Shoulder:** 2 to 6 FT
County: Coconino	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: No	**Guardrail:** No
Terrain/Max Slope: 1.71	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 9
Existing AADT: 6762	**Future AADT:** 8200
Existing LOS: C	**Future LOS:** D
Directional Split: 49 / 51	**Truck %:** 13

Safety Analysis

Total Number of Crashes:	12
Number of Fatal Crashes:	2
Injury & Possible Injury Crashes:	4
Non-Injury Crashes:	6
Equivalent Property Damage Value:	47
Crash Rate:	0.51

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

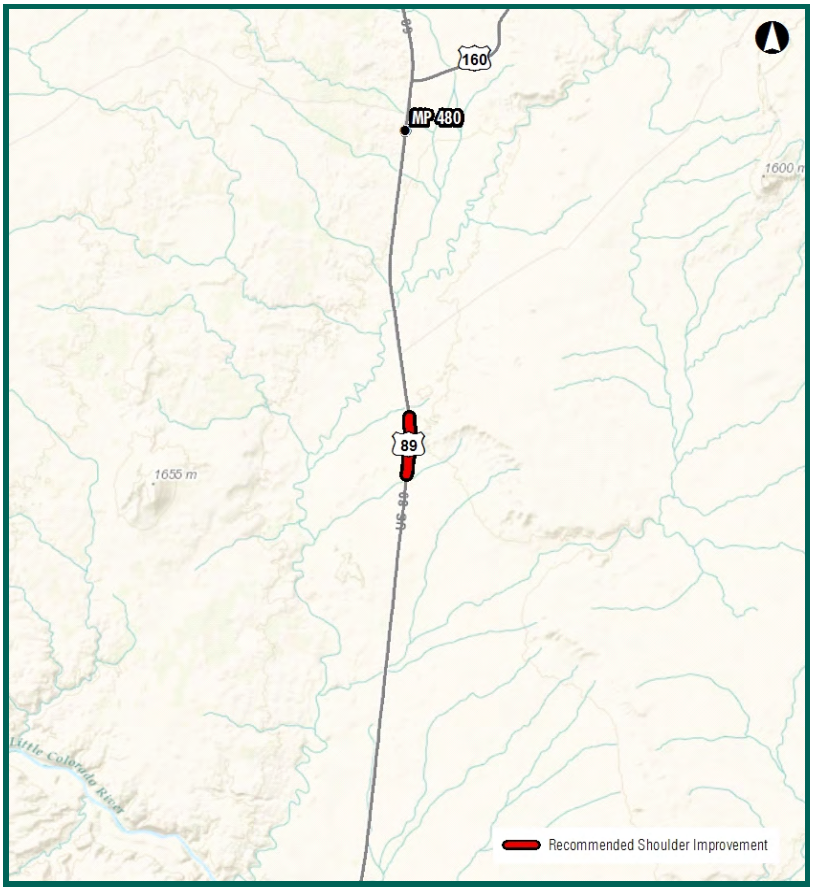
General Location Assessment: Paved shoulders in good condition; Ample room to widen roadway; Unpaved clear zone adjacent to shoulder

Cost Estimate: $819,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints



S 064: MP 234.3 - MP 235.3 (Westbound)

Statewide Rank: 61

Project Details

Route: S 064	**Direction:** Westbound
BMP: 234.3	**Tier Level:** 1
EMP: 235.3	**District Rank:** 8
District: Flagstaff	**Left Shoulder:** 2 to 6 FT
County: Coconino	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: No	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 0.45	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 14
Existing AADT: 4679	**Future AADT:** 6200
Existing LOS: C	**Future LOS:** C
Directional Split: 51 / 49	**Truck %:** 10

Safety Analysis

Total Number of Crashes:	16
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	3
Non-Injury Crashes:	13
Equivalent Property Damage Value:	23
Crash Rate:	1.84

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

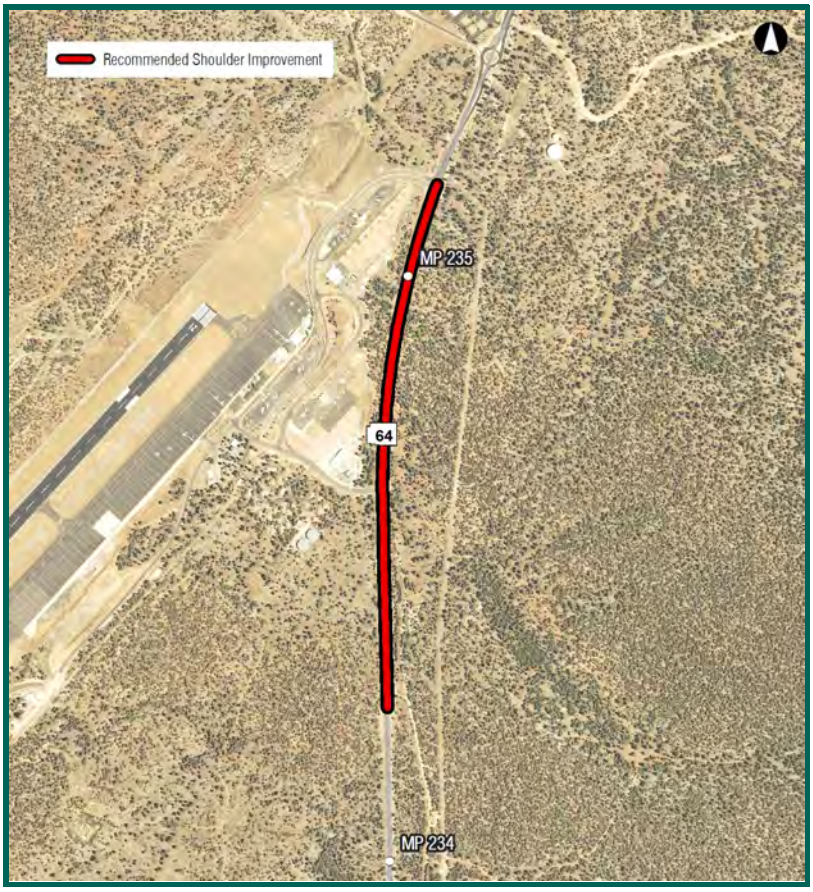
General Location Assessment: Ample room to widen roadway; Multiple intersecting roadways; Paved shoulders in good condition

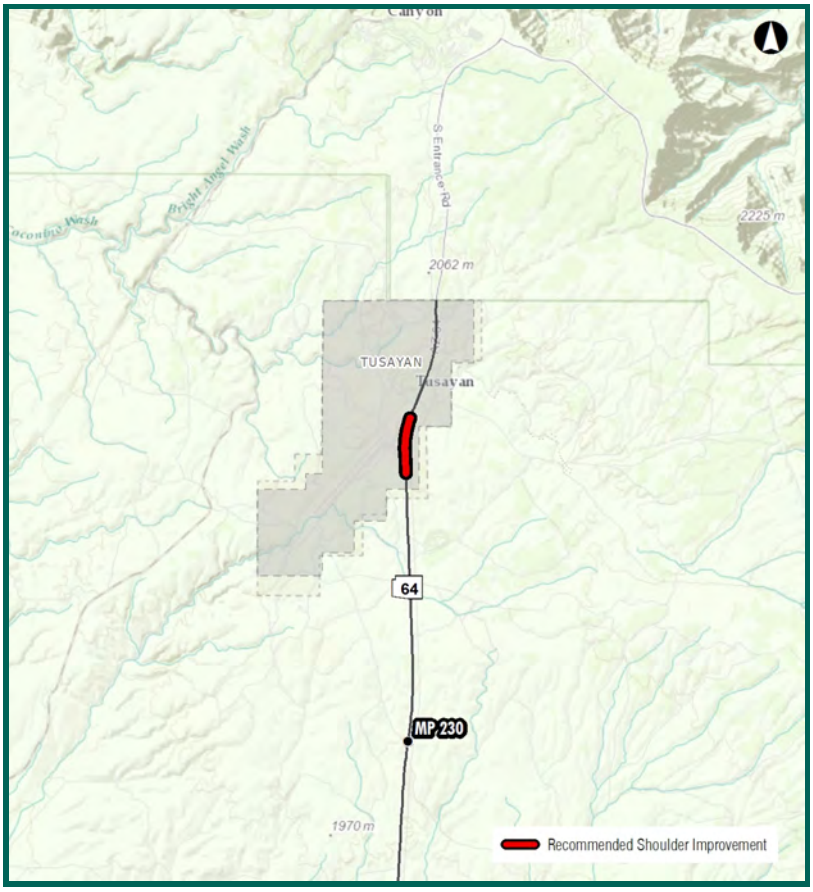
Cost Estimate: $459,000

Environmental Overview

Land Ownership: Kaibab N.F

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: active fault lines; Leaking underground storage tank





S 064: MP 226 - MP 228 (Both Directions)

Statewide Rank: 62

Project Details

Route: S 064	**Direction:** Both Directions
BMP: 226.0	**Tier Level:** 1
EMP: 228.0	**District Rank:** 9
District: Flagstaff	**Left Shoulder:** 2 to 6 FT
County: Coconino	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: No	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 3.68	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 14
Existing AADT: 4679	**Future AADT:** 6200
Existing LOS: C	**Future LOS:** D
Directional Split: 51 / 49	**Truck %:** 10

Safety Analysis

Total Number of Crashes:	20
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	7
Non-Injury Crashes:	13
Equivalent Property Damage Value:	45
Crash Rate:	1.17

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

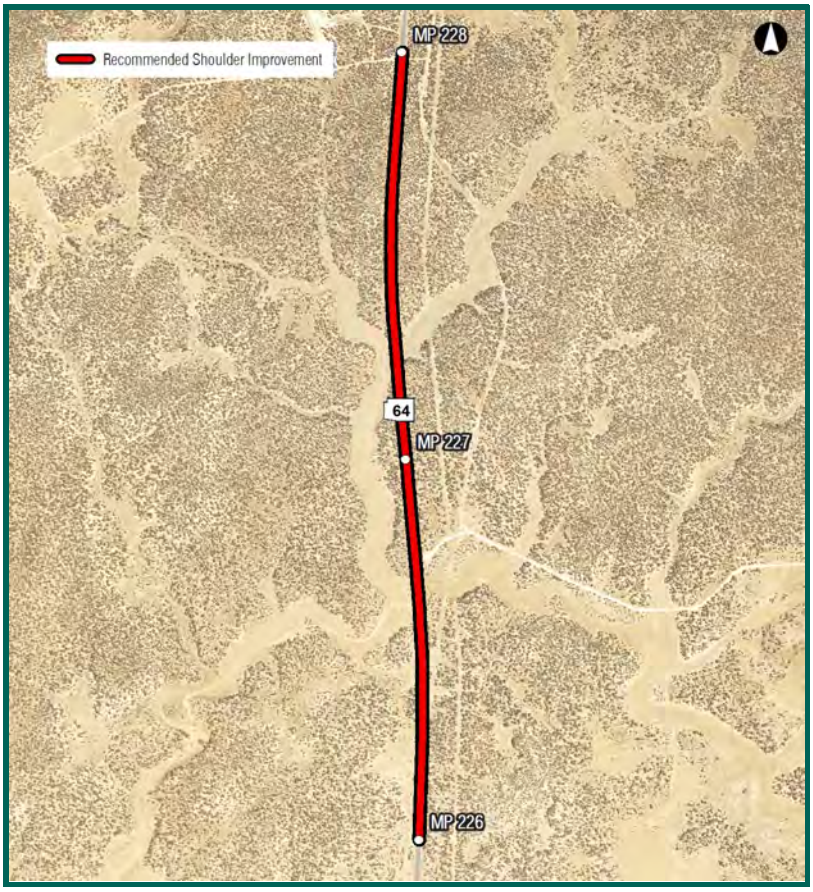
General Location Assessment: Ample room to widen roadway; Paved shoulders in good condition

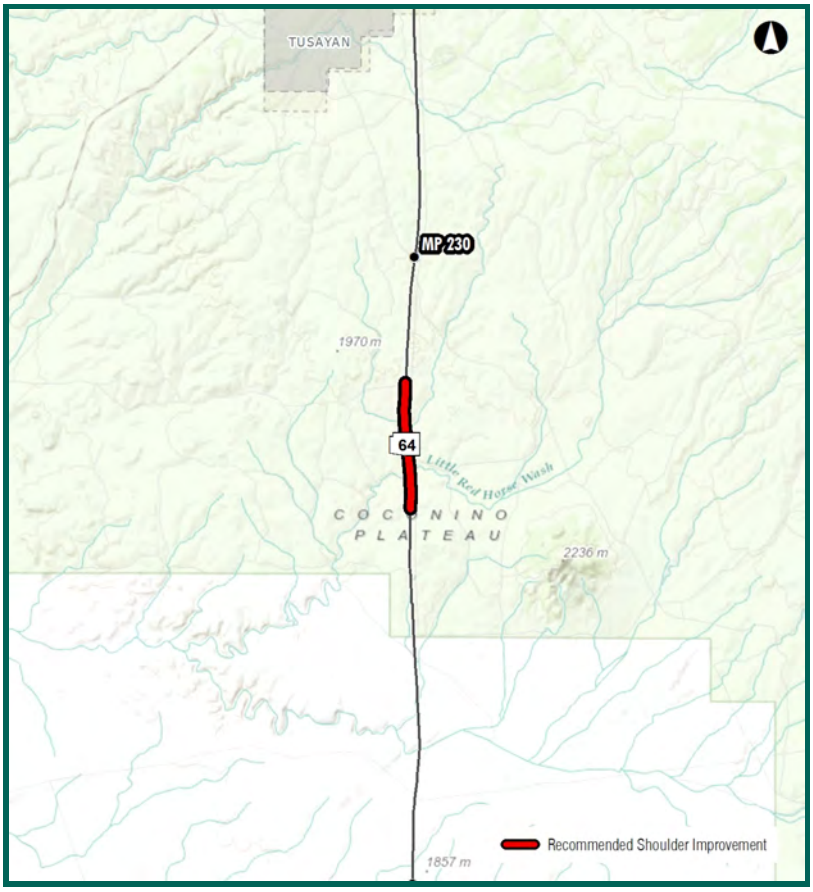
Cost Estimate: $1,980,000

Environmental Overview

Land Ownership: Kaibab N.F

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone





S 064: MP 218 - MP 220 (Both Directions)

Statewide Rank: 63

Project Details

Route: S 064	**Direction:** Both Directions
BMP: 218.0	**Tier Level:** 1
EMP: 220.0	**District Rank:** 10
District: Flagstaff	**Left Shoulder:** 2 to 6 FT
County: Coconino	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: No	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 2.02	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 14
Existing AADT: 4679	**Future AADT:** 6200
Existing LOS: C	**Future LOS:** D
Directional Split: 51 / 49	**Truck %:** 10

Safety Analysis

Total Number of Crashes:	15
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	5
Non-Injury Crashes:	10
Equivalent Property Damage Value:	36
Crash Rate:	0.88

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

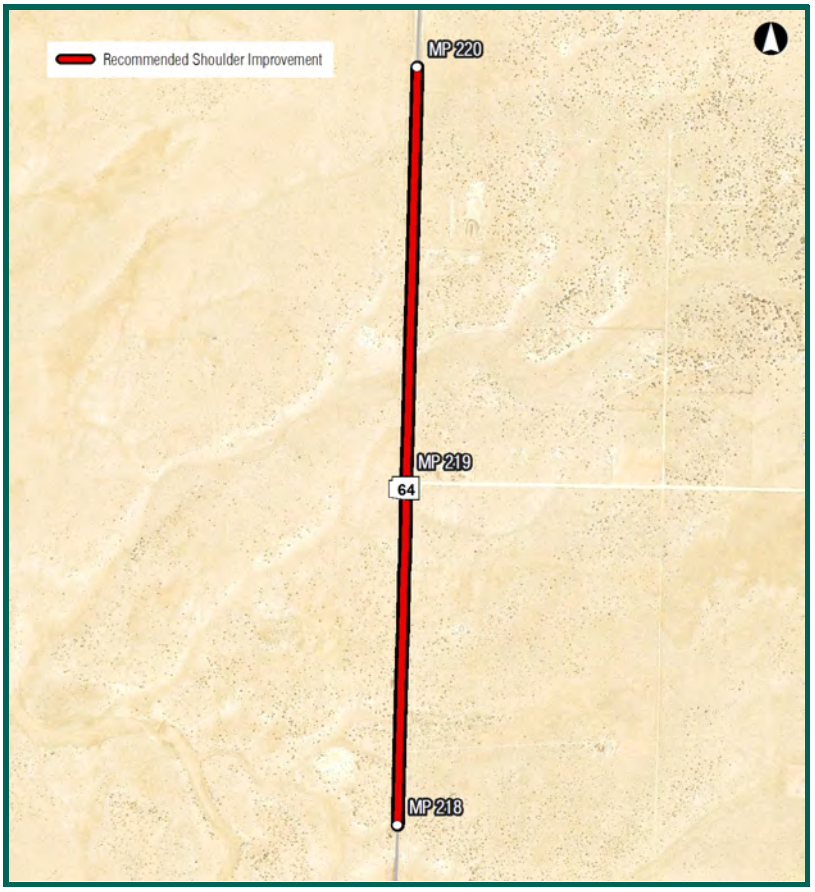
General Location Assessment: Ample room to widen roadway; Paved shoulders in good condition; Intersecting roadway

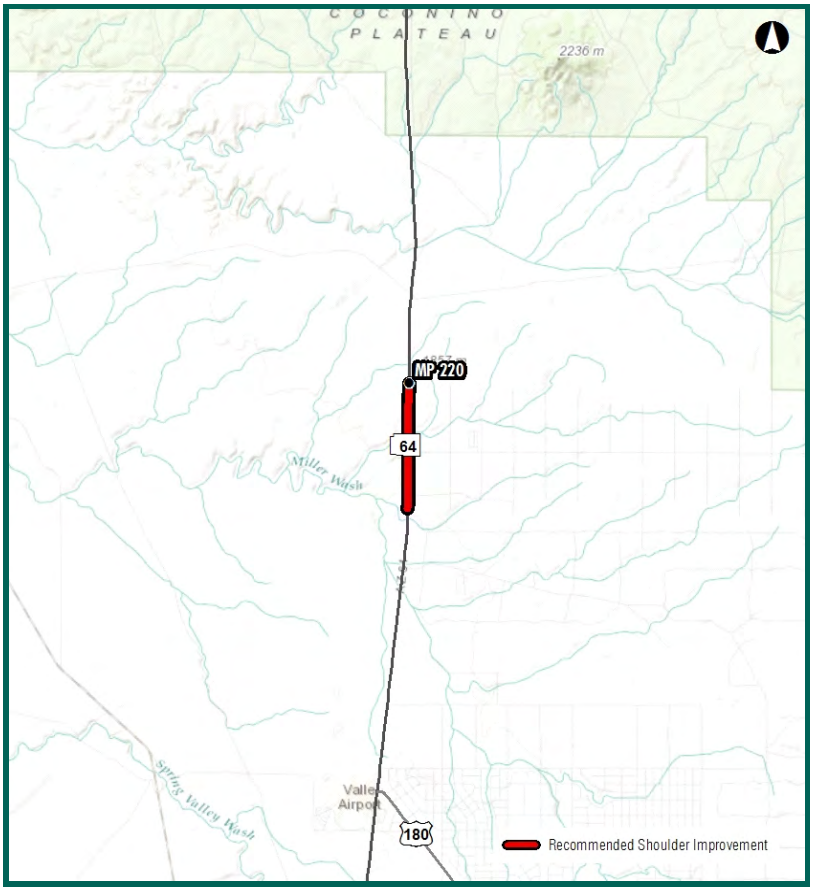
Cost Estimate: $1,800,000

Environmental Overview

Land Ownership: Private Land, State Trust Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Wetlands





U 160: MP 392 - MP 394 (Both Directions)

Statewide Rank: 64

Project Details

Route: U 160	**Direction:** Both Directions
BMP: 392.0	**Tier Level:** 1
EMP: 394.0	**District Rank:** 17
District: Holbrook	**Left Shoulder:** 2 to 6 FT
County: Navajo	**Right Shoulder:** 6 to 8 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 1.94	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 11
Existing AADT: 4679	**Future AADT:** 3200
Existing LOS: C	**Future LOS:** B
Directional Split: 60 / 40	**Truck %:** 11

Safety Analysis

Total Number of Crashes:	47
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	22
Non-Injury Crashes:	24
Equivalent Property Damage Value:	94
Crash Rate:	2.75

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

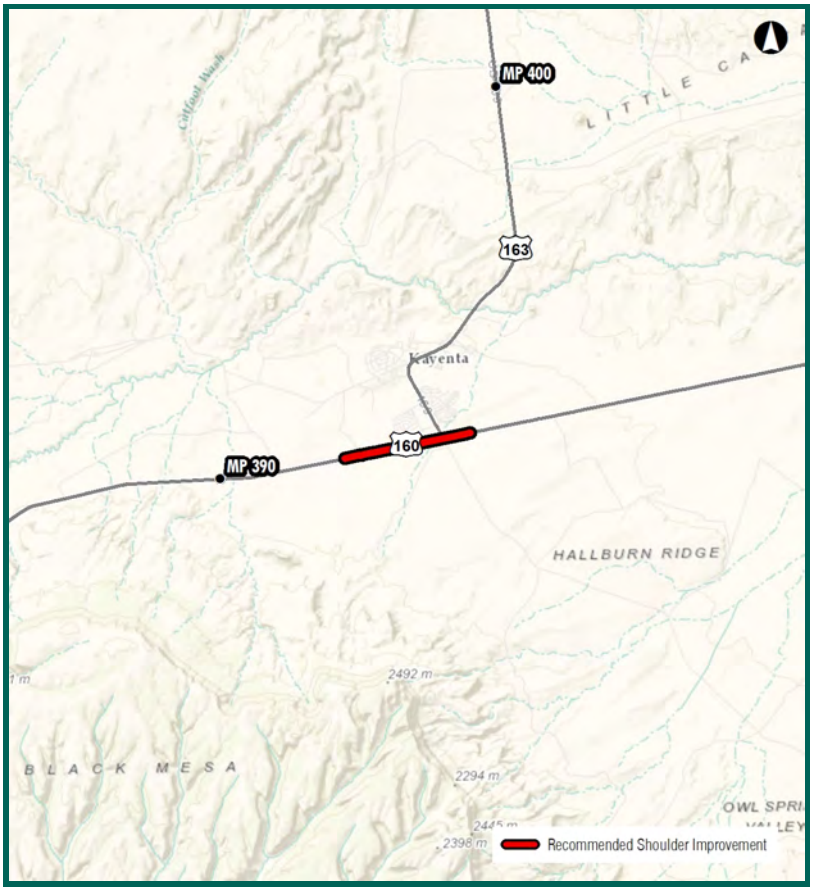
General Location Assessment: Portion is curbed (MP 393.2 - 393.6); Ample room to widen roadway; Paved portion of shoulders in good condition; Multiple intersecting roadways

Cost Estimate: $1,800,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone



S 064: MP 222 - MP 224 (Both Directions)

Statewide Rank: 65

Project Details

Route: S 064	**Direction:** Both Directions
BMP: 222.0	**Tier Level:** 1
EMP: 224.0	**District Rank:** 11
District: Flagstaff	**Left Shoulder:** 2 to 6 FT
County: Coconino	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: No	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 1.8	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 14
Existing AADT: 4679	**Future AADT:** 6200
Existing LOS: C	**Future LOS:** D
Directional Split: 51 / 49	**Truck %:** 10

Safety Analysis

Total Number of Crashes:	16
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	2
Non-Injury Crashes:	13
Equivalent Property Damage Value:	33
Crash Rate:	0.94

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

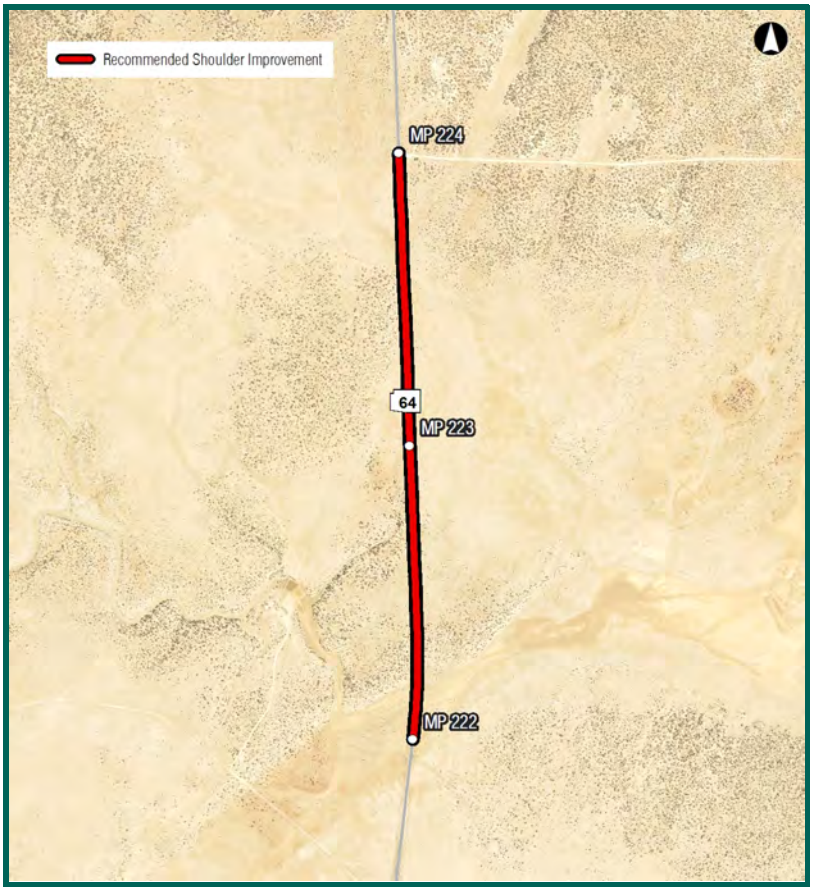
General Location Assessment: Ample room to widen roadway; Paved shoulders in good condition

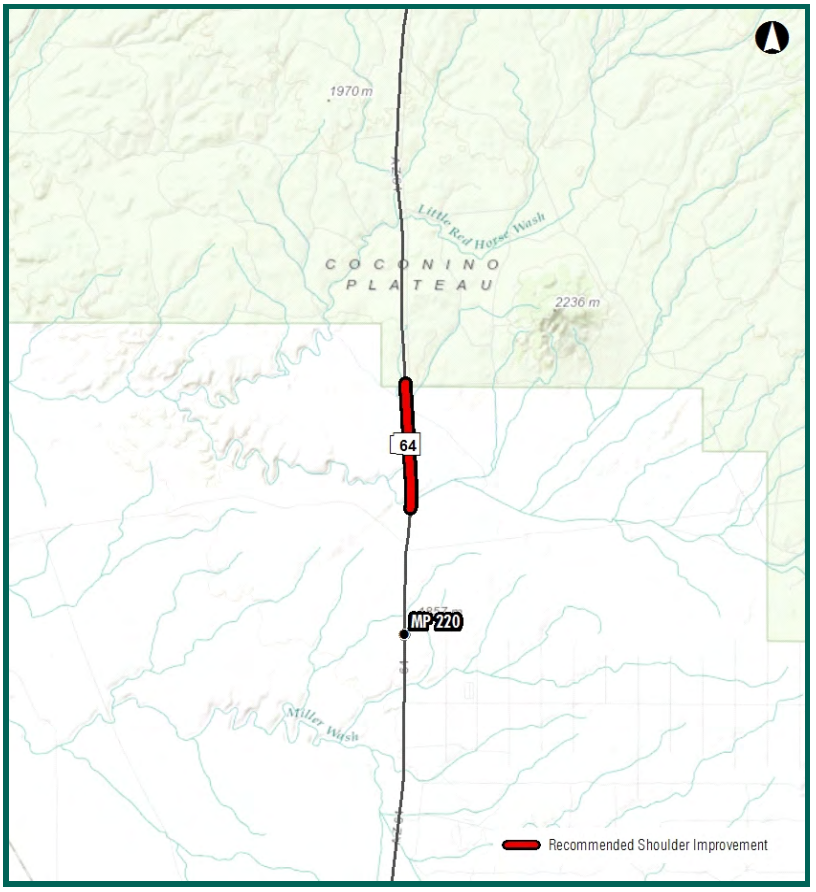
Cost Estimate: $1,800,000

Environmental Overview

Land Ownership: Kaibab N.F

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: active fault lines





U 060: MP 332 - MP 334 (Both Directions)

Statewide Rank: 66

Project Details

Route: U 060	**Direction:** Both Directions
BMP: 332.0	**Tier Level:** 1
EMP: 334.0	**District Rank:** 11
District: Globe	**Left Shoulder:** 2 to 6 FT
County: Navajo	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 4	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 10
Existing AADT: 2513	**Future AADT:** 2800
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 11

Safety Analysis

Total Number of Crashes:	18
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	6
Non-Injury Crashes:	12
Equivalent Property Damage Value:	39
Crash Rate:	1.96

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

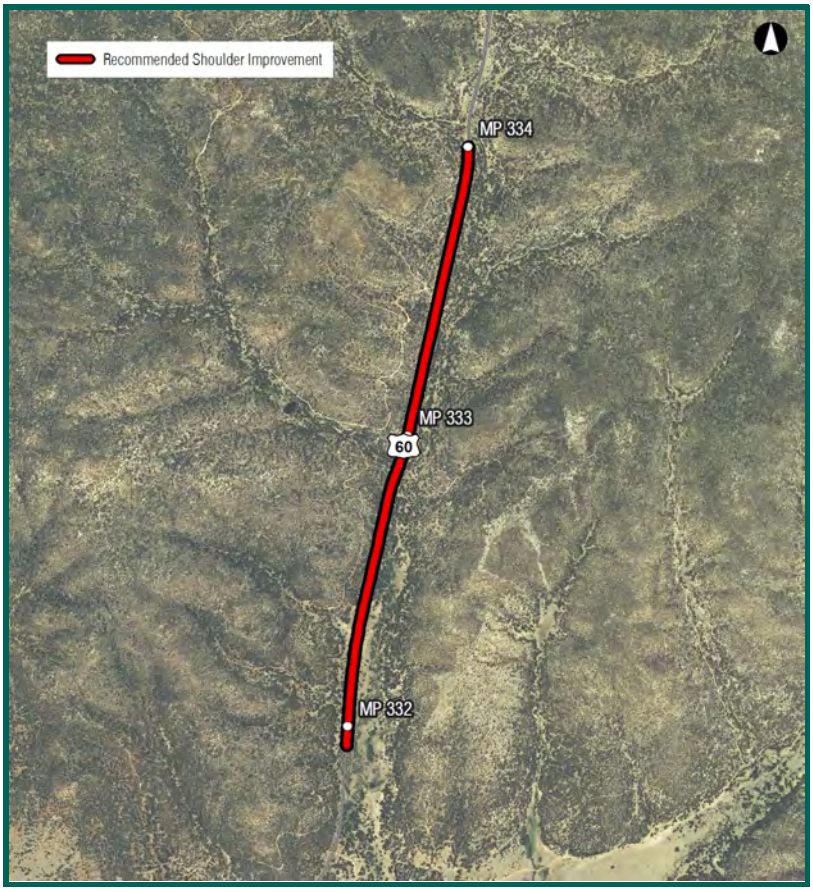
General Location Assessment: No Shoulder; Roadside cliffs may limit construction

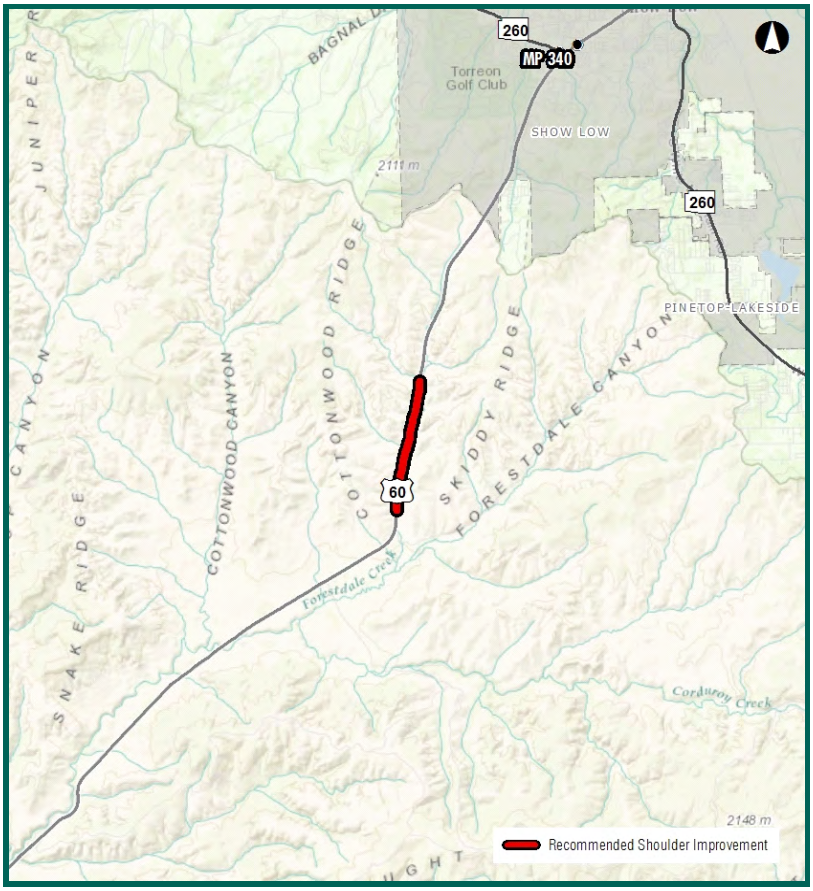
Cost Estimate: $1,980,000

Environmental Overview

Land Ownership: White Mtn Apache Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Wetlands





U 089: MP 461.8 - MP 460.7 (Both Directions)

Statewide Rank: 67

Project Details

Route: U 089	**Direction:** Both Directions
BMP: 461.8	**Tier Level:** 1
EMP: 460.7	**District Rank:** 12
District: Flagstaff	**Left Shoulder:** 2 to 6 FT
County: Coconino	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: No	**Guardrail:** No
Terrain/Max Slope: 1.74	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 8
Existing AADT: 6491	**Future AADT:** 7900
Existing LOS: D	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 13

Safety Analysis

Total Number of Crashes:	5
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	4
Non-Injury Crashes:	1
Equivalent Property Damage Value:	18
Crash Rate:	0.39

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

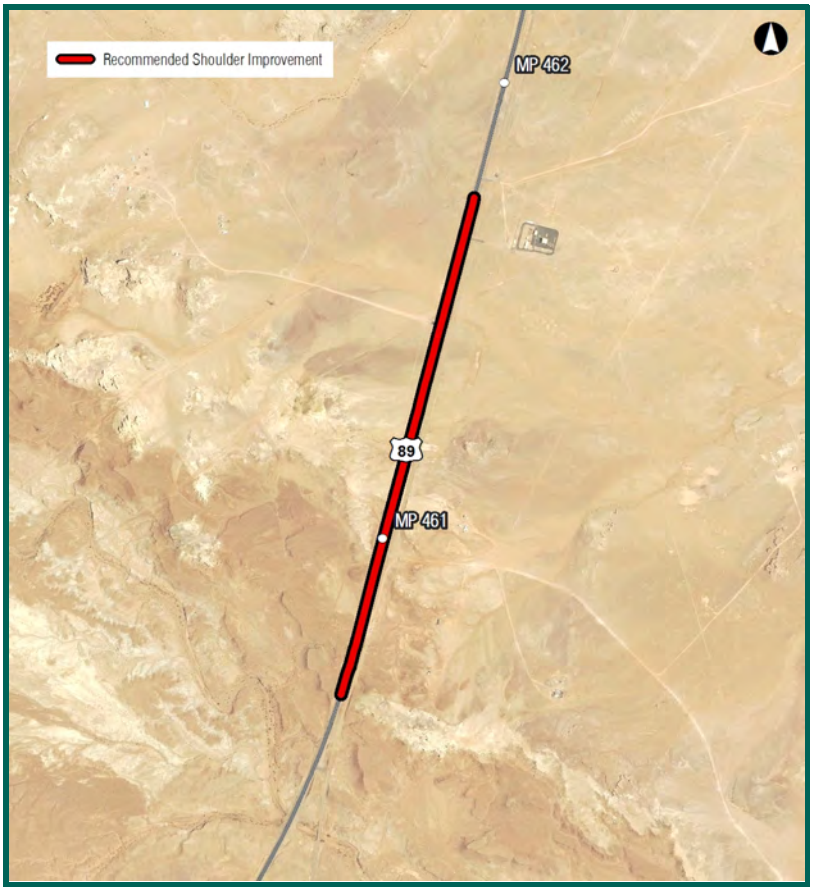
General Location Assessment: Paved shoulders in good condition; Ample room to widen roadway; Multiple intersecting roadways

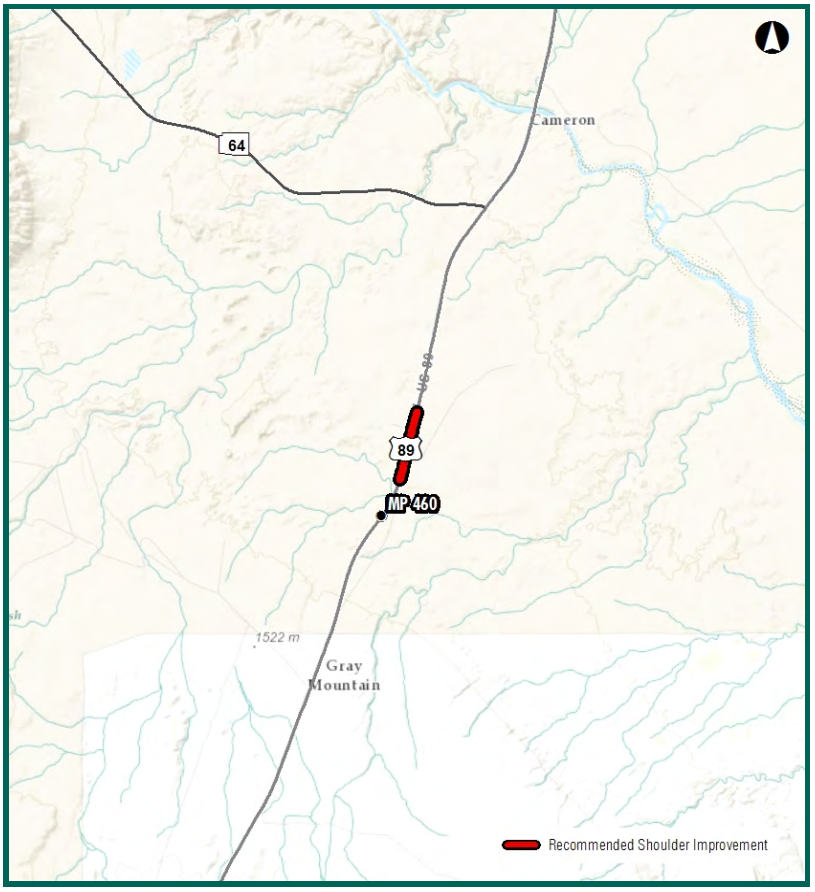
Cost Estimate: $981,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone





S 064: MP 228 - MP 230 (Both Directions)

Statewide Rank: 68

Project Details

Route: S 064	**Direction:** Both Directions
BMP: 228.0	**Tier Level:** 1
EMP: 230.0	**District Rank:** 13
District: Flagstaff	**Left Shoulder:** 2 to 6 FT
County: Coconino	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: No	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 2.86	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 14
Existing AADT: 4679	**Future AADT:** 6200
Existing LOS: C	**Future LOS:** D
Directional Split: 51 / 49	**Truck %:** 10

Safety Analysis

Total Number of Crashes:	19
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	4
Non-Injury Crashes:	15
Equivalent Property Damage Value:	31
Crash Rate:	1.11

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

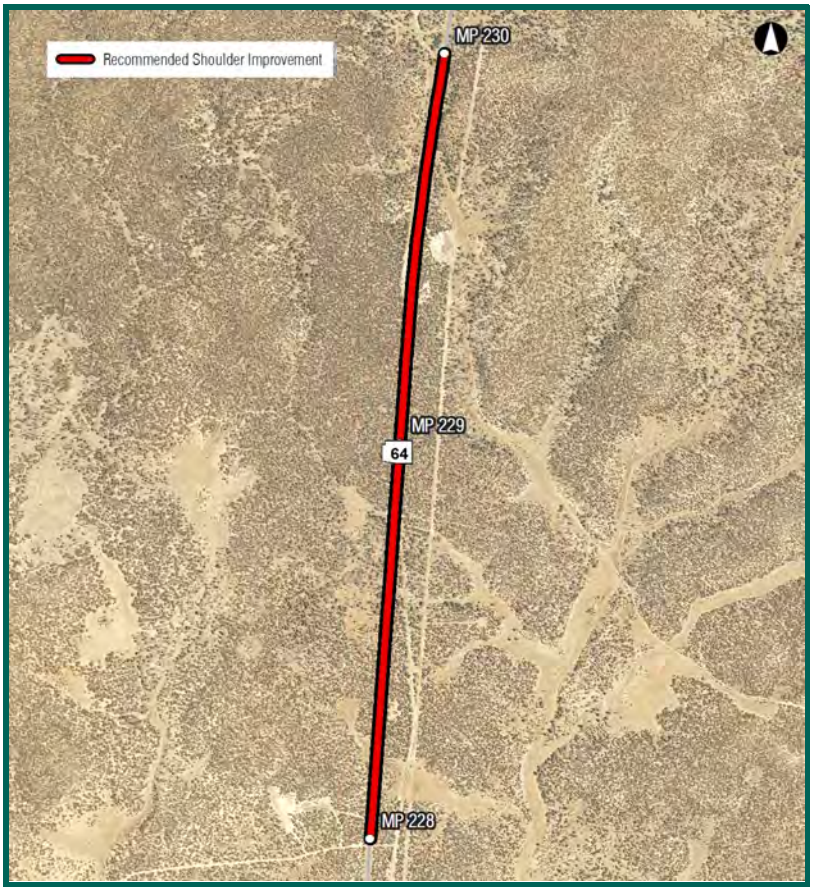
General Location Assessment: Ample room to widen roadway; Paved shoulders in good condition; Intersecting roadway

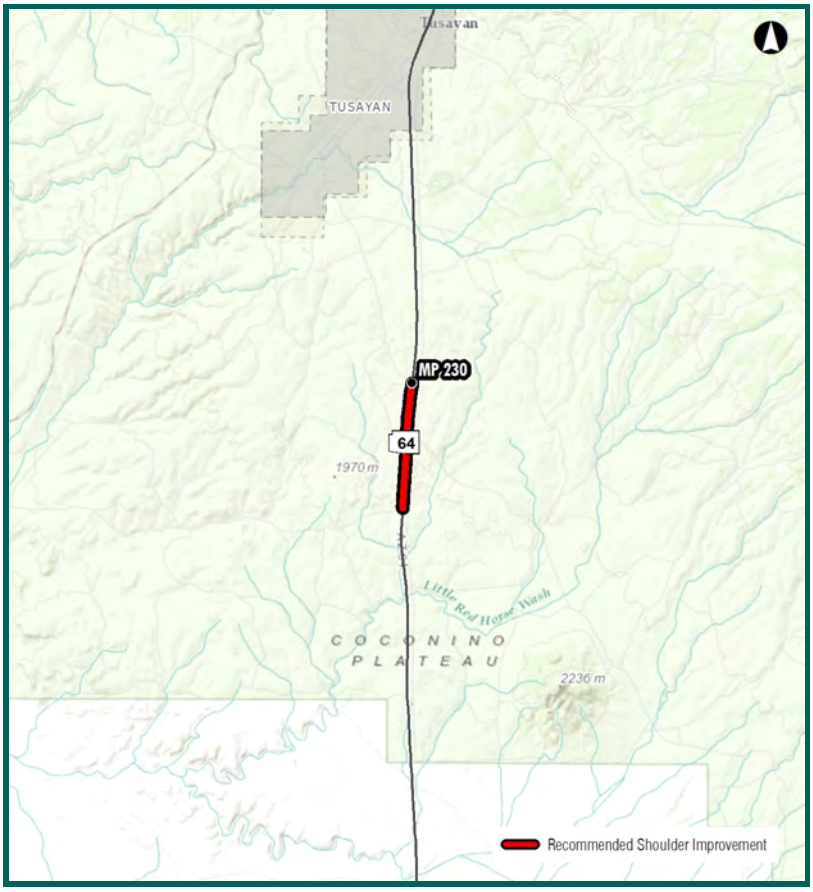
Cost Estimate: $1,980,000

Environmental Overview

Land Ownership: Kaibab N.F

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone





U 160: MP 382 - MP 384 (Both Directions)

Statewide Rank: 69

Project Details

Route: U 160	**Direction:** Both Directions
BMP: 382.0	**Tier Level:** 1
EMP: 384.0	**District Rank:** 18
District: Holbrook	**Left Shoulder:** 2 to 6 FT
County: Navajo	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: No	**Guardrail:** Yes
Terrain/Max Slope: 4.83	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 11
Existing AADT: 5206	**Future AADT:** 6200
Existing LOS: D	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 10

Safety Analysis

Total Number of Crashes:	12
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	5
Non-Injury Crashes:	7
Equivalent Property Damage Value:	26
Crash Rate:	0.63

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

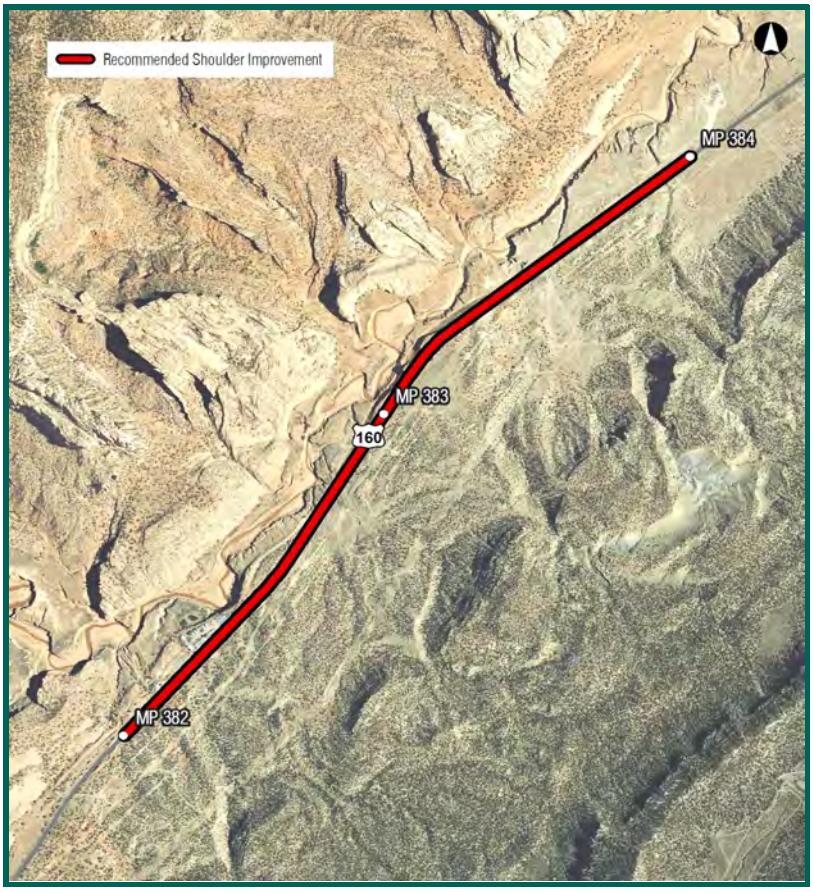
General Location Assessment: Ample room to widen roadway; Paved shoulders in good condition; Multiple intersecting roadways; Narrow shoulders

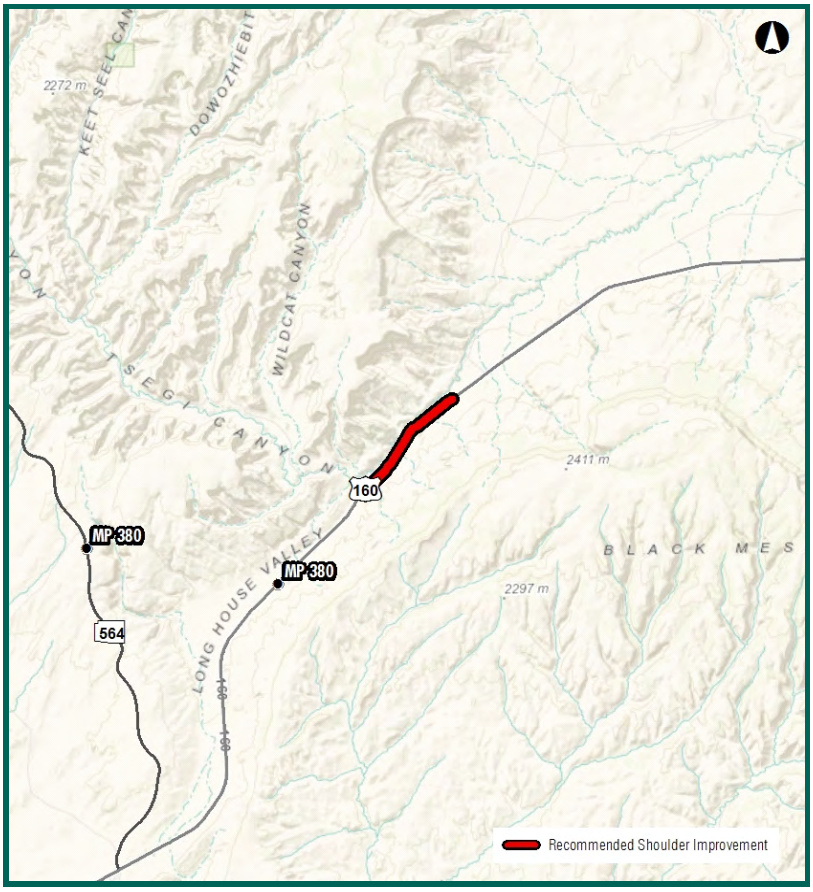
Cost Estimate: $1,800,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Riparian Habitats; Wetlands





U 060: MP 324 - MP 326 (Both Directions)

Statewide Rank: 70

Project Details

Route: U 060	**Direction:** Both Directions
BMP: 324.0	**Tier Level:** 1
EMP: 326.0	**District Rank:** 12
District: Globe	**Left Shoulder:** 2 to 6 FT
County: Navajo	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 5.81	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 10
Existing AADT: 2513	**Future AADT:** 2800
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 11

Safety Analysis

Total Number of Crashes:	19
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	4
Non-Injury Crashes:	15
Equivalent Property Damage Value:	29
Crash Rate:	2.07

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

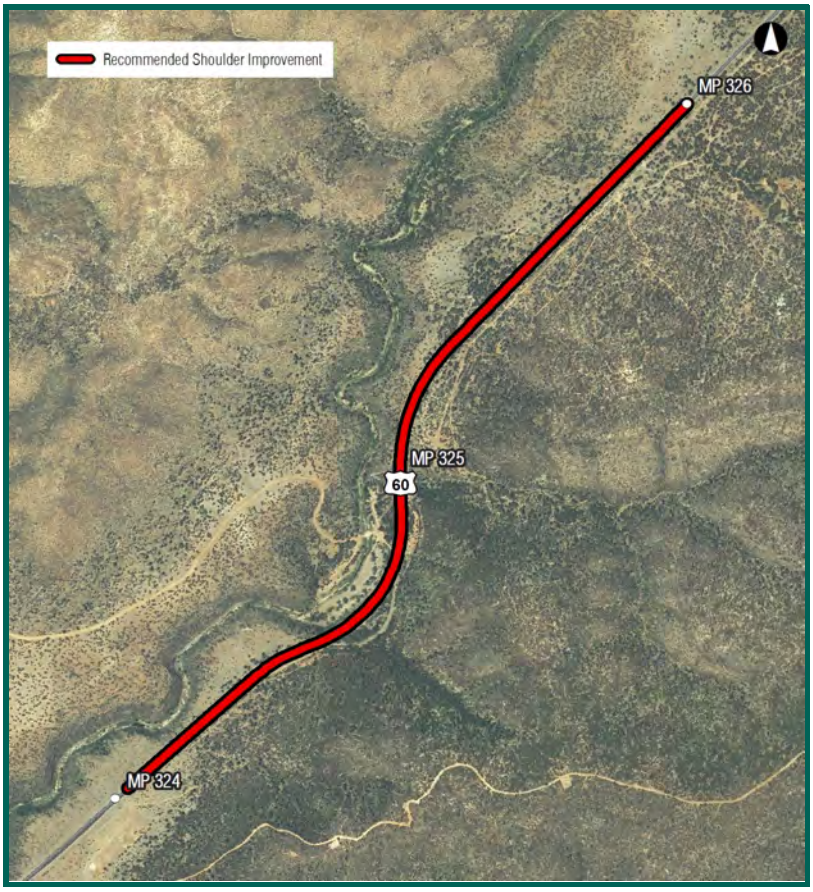
General Location Assessment: Paved shoulders in good condition; Narrow shoulder; Ample room to widen roadway; Multiple intersecting roadways

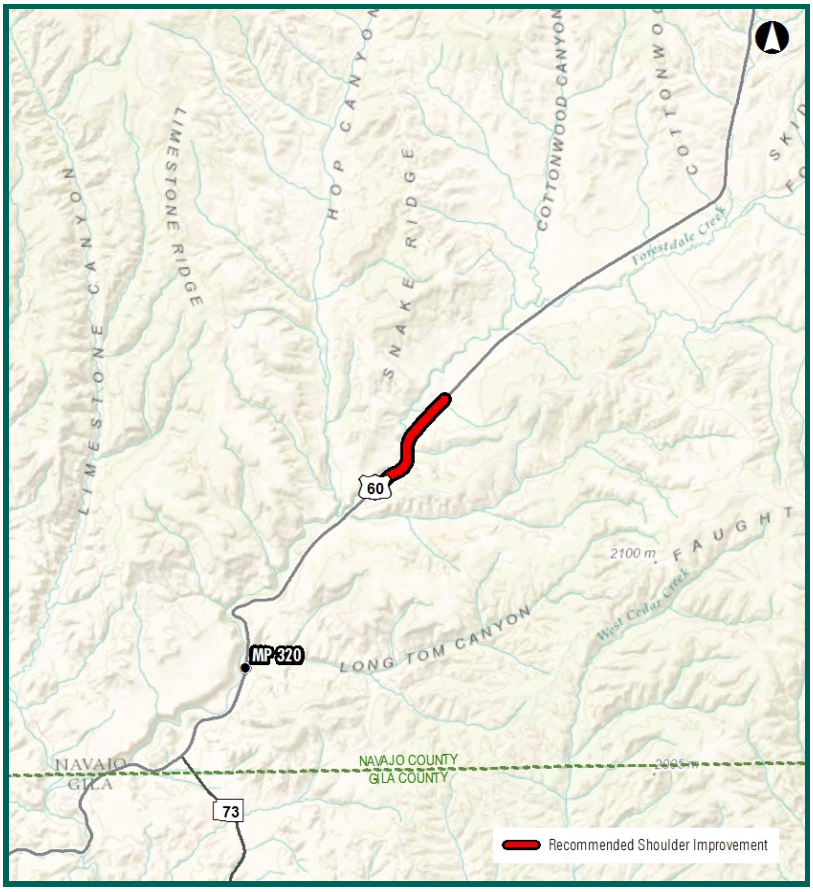
Cost Estimate: $1,980,000

Environmental Overview

Land Ownership: White Mtn Apache Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Wetlands





U 060: MP 336 - MP 338 (Both Directions)

Statewide Rank: 71

Project Details

Route: U 060	**Direction:** Both Directions
BMP: 336.0	**Tier Level:** 1
EMP: 338.0	**District Rank:** 13
District: Globe	**Left Shoulder:** 2 to 6 FT
County: Navajo	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 3.94	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 15
Existing AADT: 2513	**Future AADT:** 3300
Existing LOS: C	**Future LOS:** C
Directional Split: 49 / 51	**Truck %:** 12

Safety Analysis

Total Number of Crashes:	15
Number of Fatal Crashes:	2
Injury & Possible Injury Crashes:	3
Non-Injury Crashes:	10
Equivalent Property Damage Value:	44
Crash Rate:	1.64

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

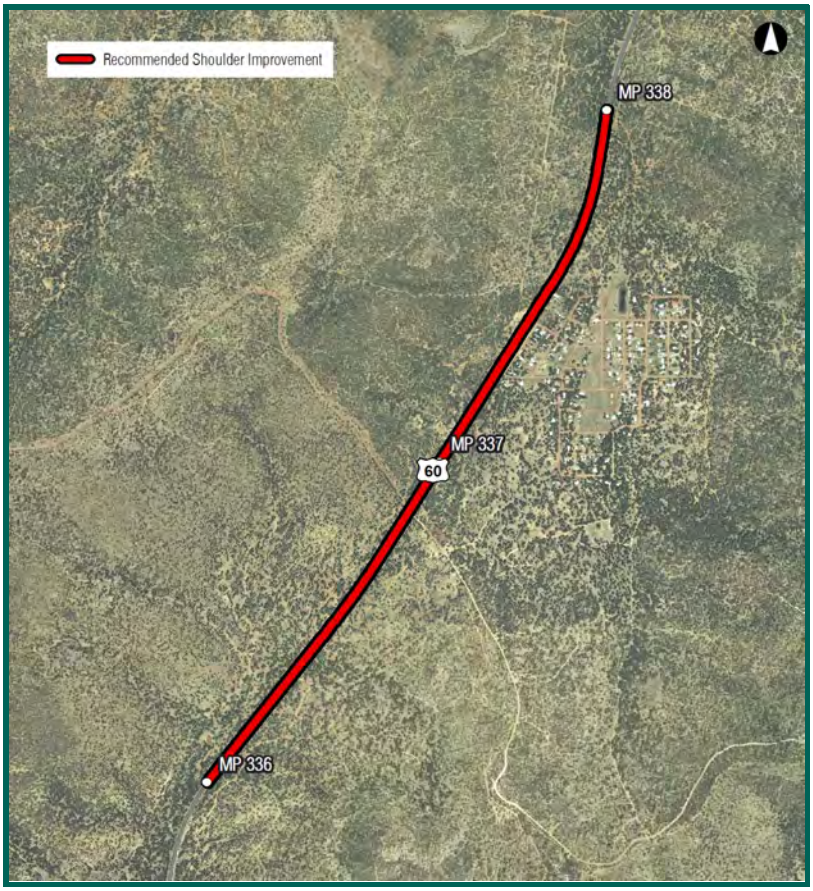
General Location Assessment: Narrow Shoulder; Roadside cliffs may limit construction

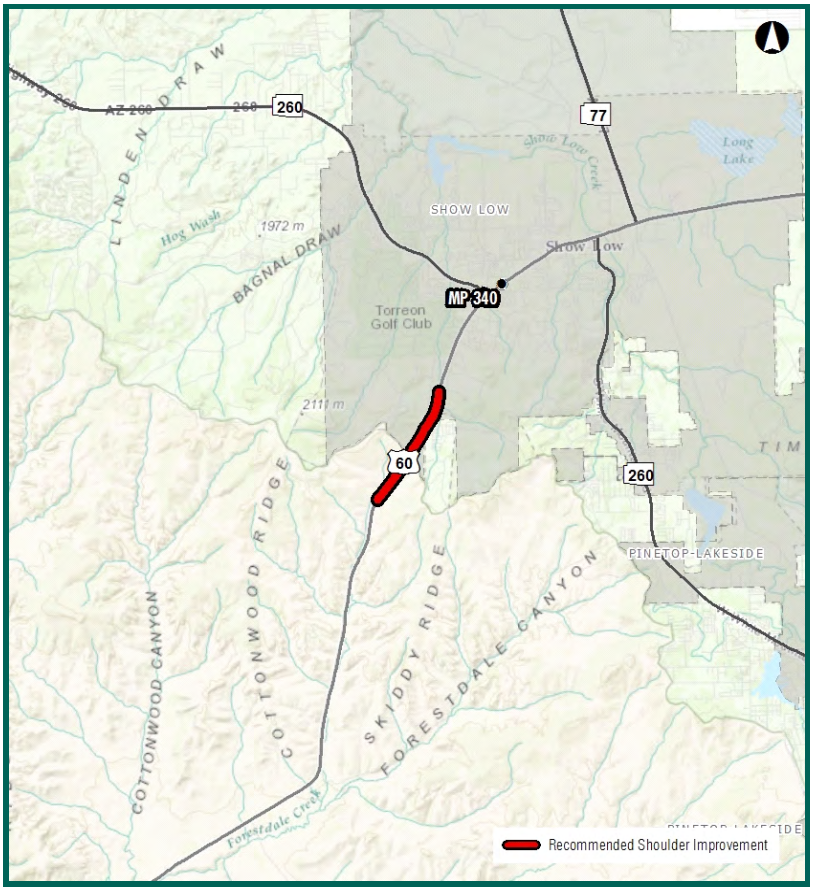
Cost Estimate: $1,980,000

Environmental Overview

Land Ownership: White Mtn Apache Indian Res., Apache-Sitgreaves N.F

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wetlands





S 064: MP 190 - MP 192 (Both Directions)

Statewide Rank: 72

Project Details

Route: S 064	**Direction:** Both Directions
BMP: 190.0	**Tier Level:** 1
EMP: 192.0	**District Rank:** 14
District: Flagstaff	**Left Shoulder:** 2 to 6 FT
County: Coconino	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: No	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 3.4	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 10
Existing AADT: 7166	**Future AADT:** 4100
Existing LOS: D	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 10

Safety Analysis

Total Number of Crashes:	34
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	2
Non-Injury Crashes:	32
Equivalent Property Damage Value:	40
Crash Rate:	1.3

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

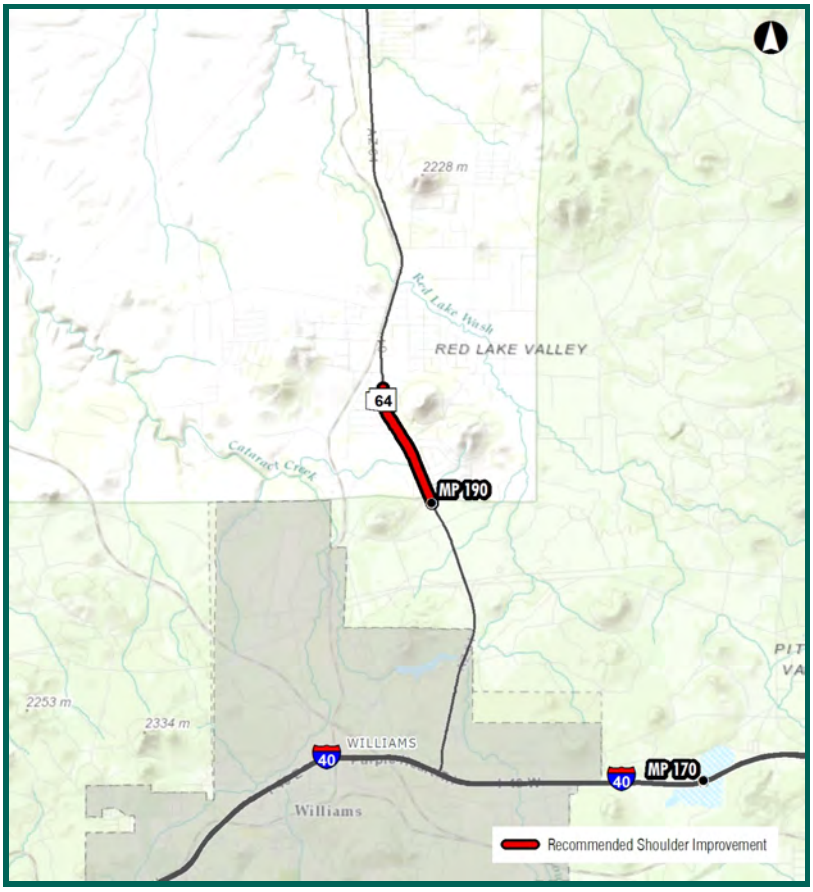
General Location Assessment: Ample room to widen roadway; Paved shoulders in good condition; Multiple intersecting roadways

Cost Estimate: $1,980,000

Environmental Overview

Land Ownership: Private Land, State Trust Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Wetlands



U 160: MP 446 - MP 448 (Both Directions)

Statewide Rank: 73

Project Details

Route: U 160	**Direction:** Both Directions
BMP: 446.0	**Tier Level:** 1
EMP: 448.0	**District Rank:** 19
District: Holbrook	**Left Shoulder:** 2 to 6 FT
County: Apache	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 4.65	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 33
Existing AADT: 3067	**Future AADT:** 4000
Existing LOS: D	**Future LOS:** D
Directional Split: 52 / 48	**Truck %:** 11

Safety Analysis

Total Number of Crashes:	7
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	4
Non-Injury Crashes:	3
Equivalent Property Damage Value:	19
Crash Rate:	0.63

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

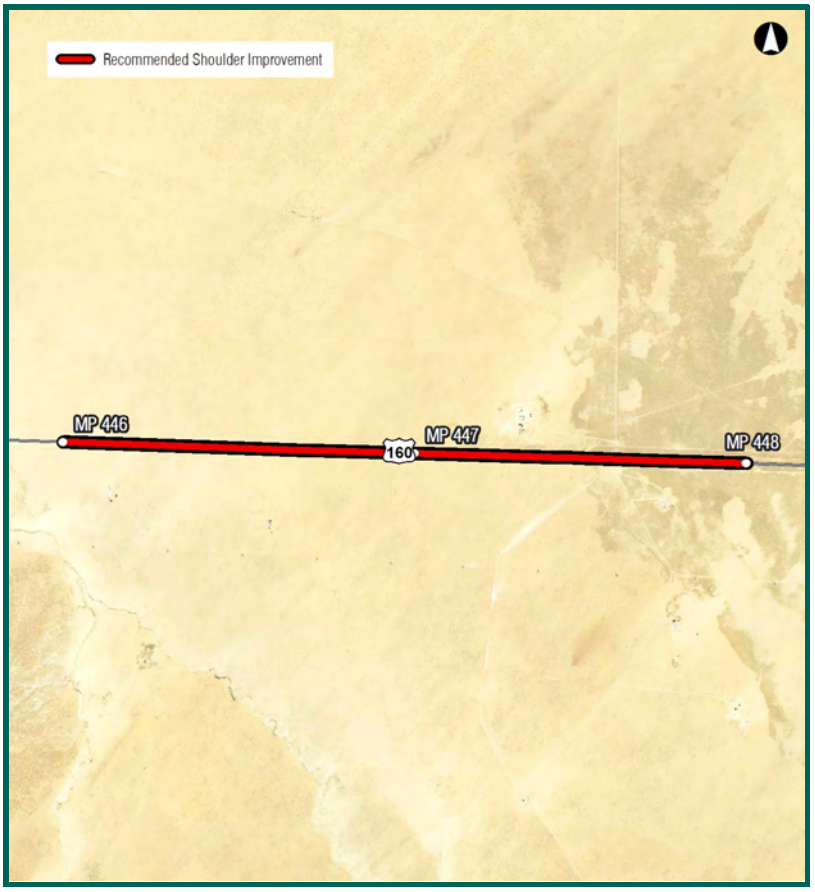
General Location Assessment: Paved shoulder in good condition; Ample room to widen roadway; Multiple intersecting roadways

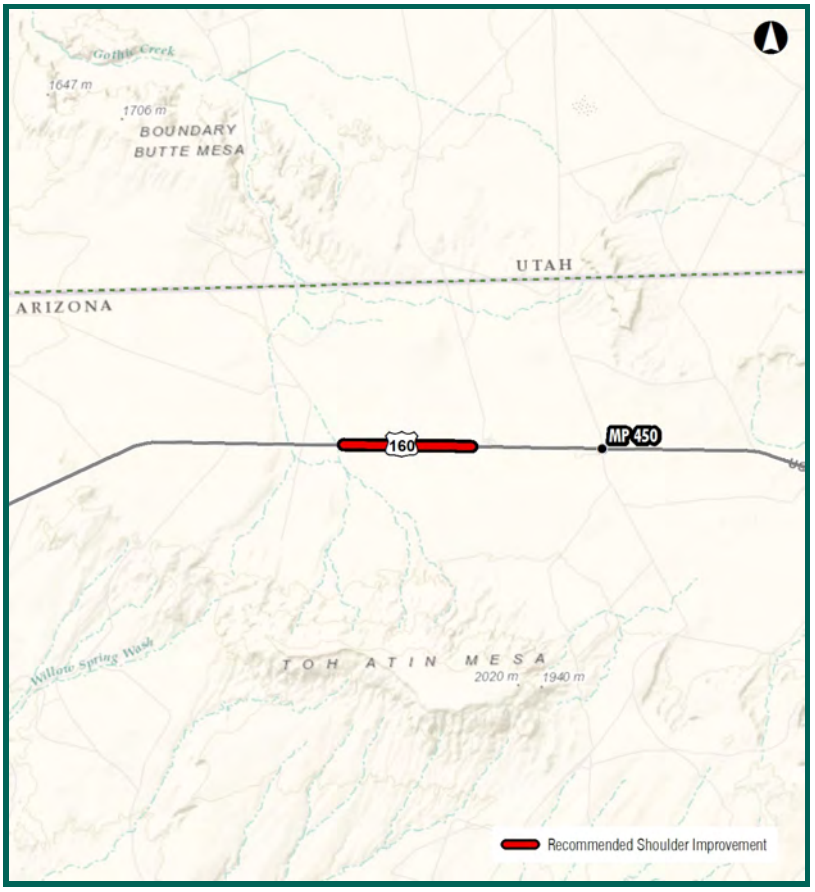
Cost Estimate: $1,800,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints





S 087: MP 270 - MP 272 (Both Directions)

Statewide Rank: 74

Project Details

Route: S 087	**Direction:** Both Directions
BMP: 270.0	**Tier Level:** 1
EMP: 272.0	**District Rank:** 7
District: Prescott	**Left Shoulder:** Less than 2 FT
County: Gila	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Rural Major Collector	
Wideload Corridor: No	**Pullouts:** Yes
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 5.89	**Terrain:** Mountainous
Speed Limit(mph): 50	**K-Factor:** 10
Existing AADT: 3825	**Future AADT:** 5200
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 12

Safety Analysis

Total Number of Crashes:	39
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	19
Non-Injury Crashes:	20
Equivalent Property Damage Value:	91
Crash Rate:	2.79

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

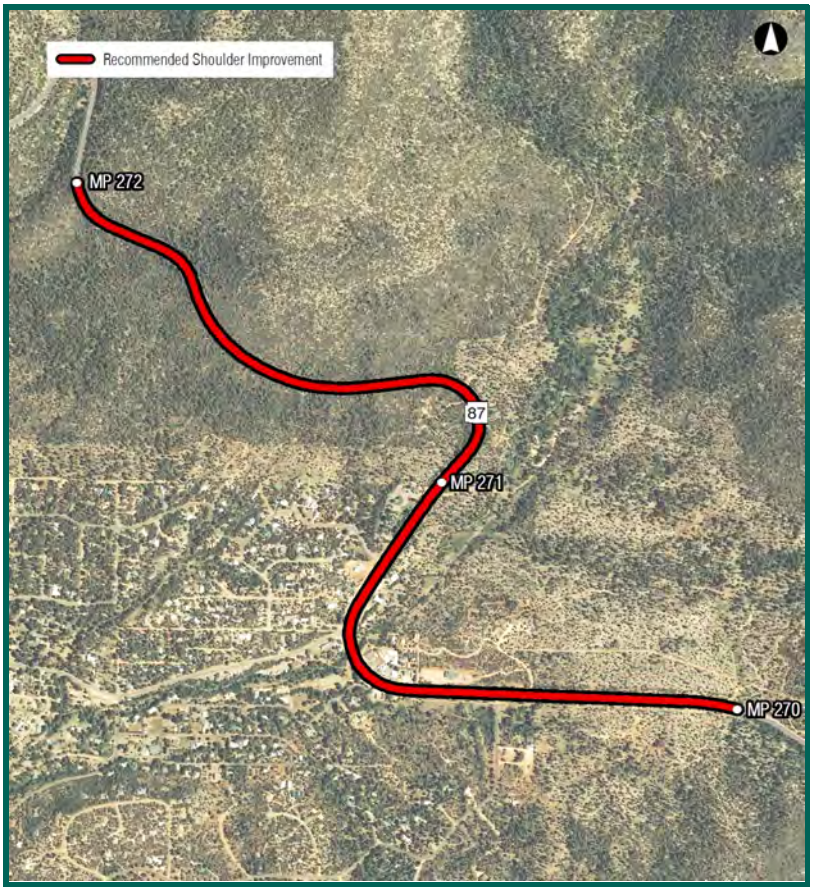
General Location Assessment: Narrow shoulders; Unpaved shoulders; Structures along segment

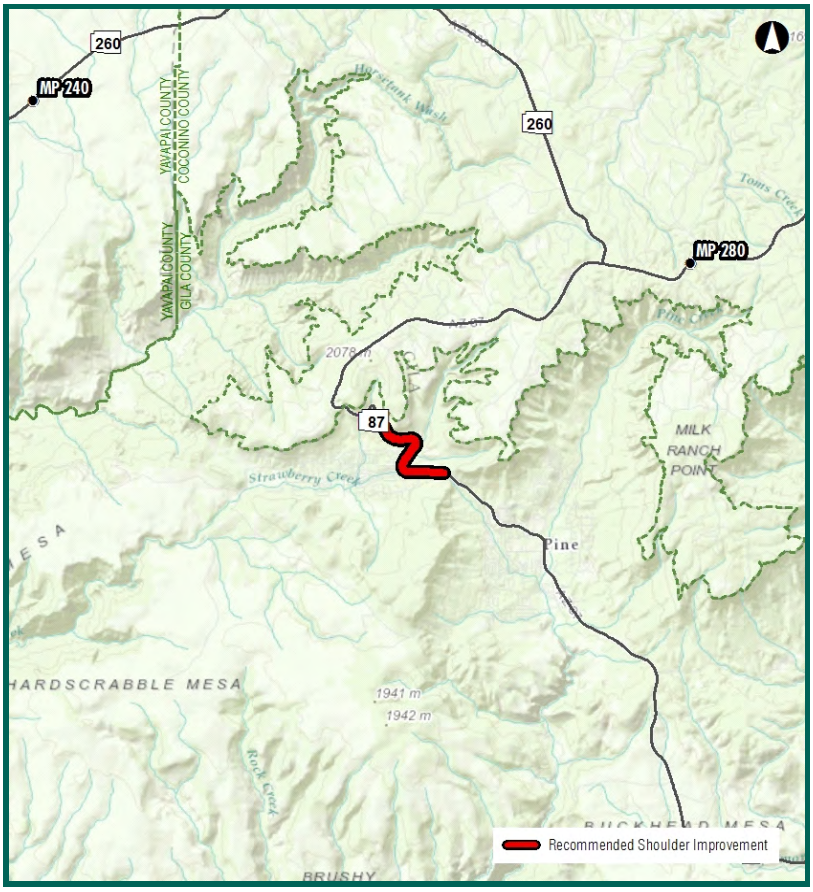
Cost Estimate: $3,780,000

Environmental Overview

Land Ownership: Tonto N.F, Private Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Wetlands;100-Yr Floodplain; Critical Habitat Area





S 064: MP 216 - MP 218 (Both Directions)

Statewide Rank: 75

Project Details

Route: S 064	**Direction:** Both Directions
BMP: 216.0	**Tier Level:** 1
EMP: 218.0	**District Rank:** 15
District: Flagstaff	**Left Shoulder:** 2 to 6 FT
County: Coconino	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: No	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 1.51	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 14
Existing AADT: 4679	**Future AADT:** 6200
Existing LOS: C	**Future LOS:** D
Directional Split: 51 / 49	**Truck %:** 10

Safety Analysis

Total Number of Crashes:	10
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	3
Non-Injury Crashes:	7
Equivalent Property Damage Value:	19
Crash Rate:	0.59

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

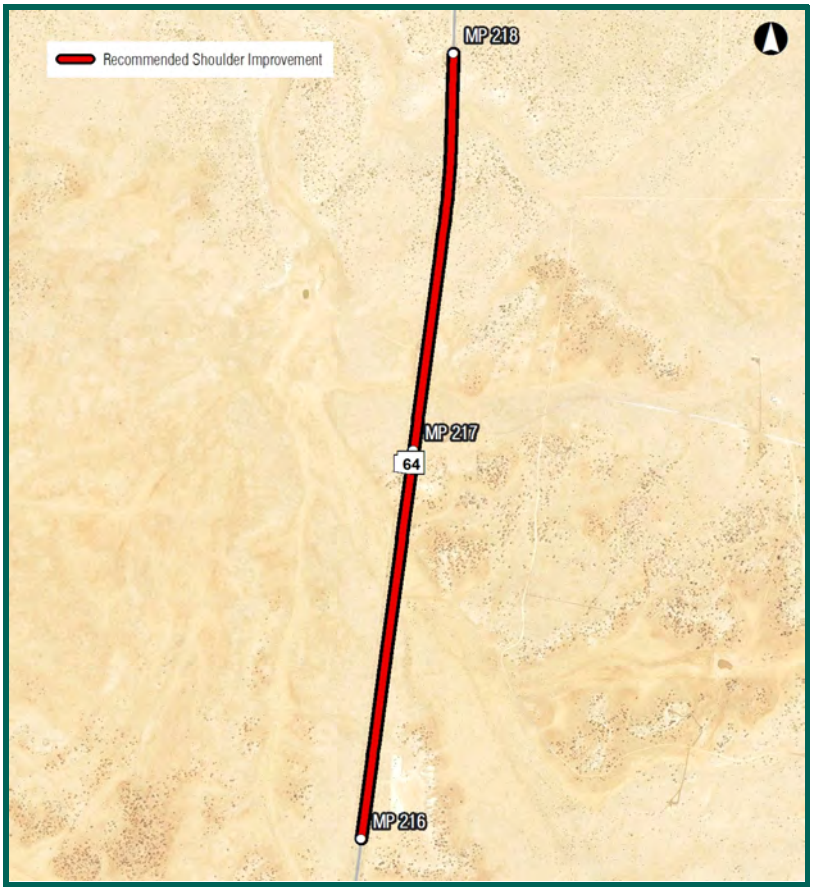
General Location Assessment: Ample room to widen roadway; Paved shoulders in good condition; Multiple intersecting roadways

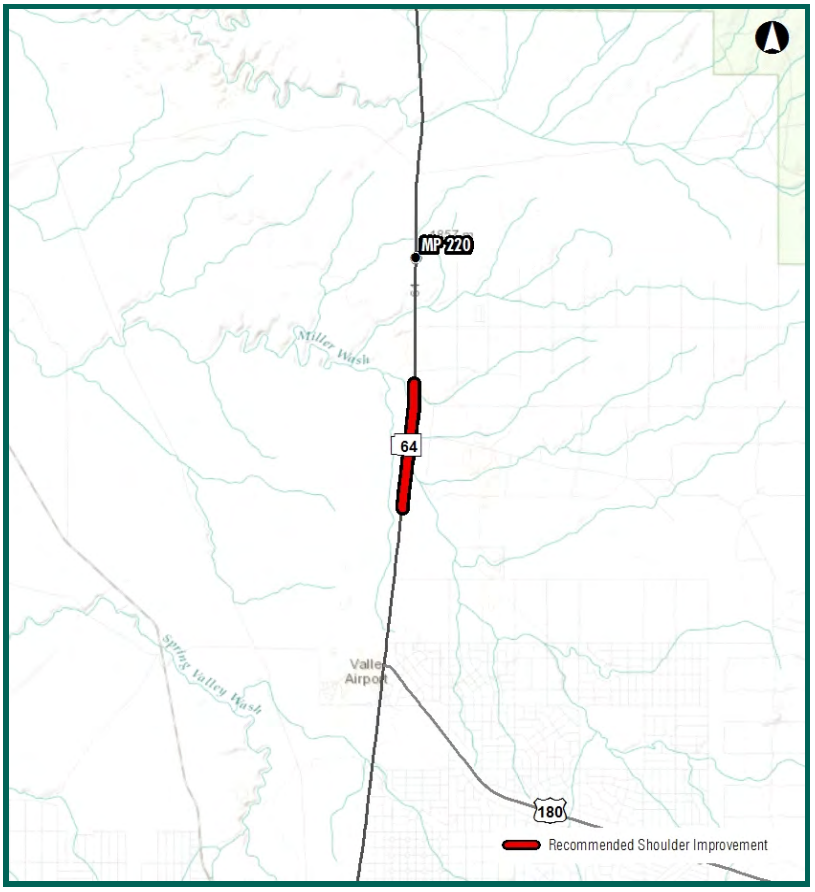
Cost Estimate: $1,800,000

Environmental Overview

Land Ownership: Private Land, State Trust Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Wetlands





S 077: MP 343.3 - MP 343.4 (Both Directions)

Statewide Rank: 76

Project Details

Route: S 077	**Direction:** Both Directions
BMP: 343.3	**Tier Level:** 1
EMP: 343.4	**District Rank:** 14
District: Globe	**Left Shoulder:** Less than 2 FT
County: Navajo	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: No	**Guardrail:** No
Terrain/Max Slope: 1.16	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 8
Existing AADT: 8317	**Future AADT:** 11000
Existing LOS: C	**Future LOS:** D
Directional Split: 49 / 51	**Truck %:** 12

Safety Analysis

Total Number of Crashes:	5
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	1
Non-Injury Crashes:	4
Equivalent Property Damage Value:	6
Crash Rate:	0.29

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

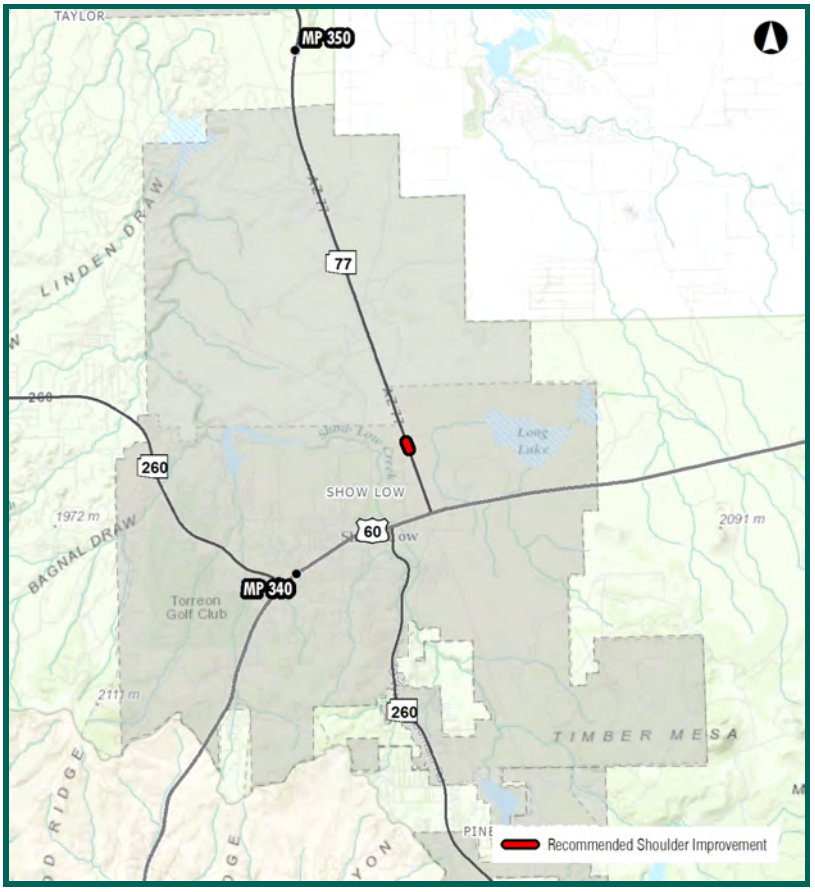
General Location Assessment: Ample room to widen roadway; Paved shoulders in good condition

Cost Estimate: $225,225

Environmental Overview

Land Ownership: Apache-Sitgreaves N.F, Private Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints



S 064: MP 220 - MP 222 (Both Directions)

Statewide Rank: 77

Project Details

Route: S 064	**Direction:** Both Directions
BMP: 220.0	**Tier Level:** 1
EMP: 222.0	**District Rank:** 16
District: Flagstaff	**Left Shoulder:** 2 to 6 FT
County: Coconino	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: No	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 2.51	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 14
Existing AADT: 4679	**Future AADT:** 6200
Existing LOS: D	**Future LOS:** D
Directional Split: 51 / 49	**Truck %:** 10

Safety Analysis

Total Number of Crashes:	10
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	1
Non-Injury Crashes:	9
Equivalent Property Damage Value:	13
Crash Rate:	0.59

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

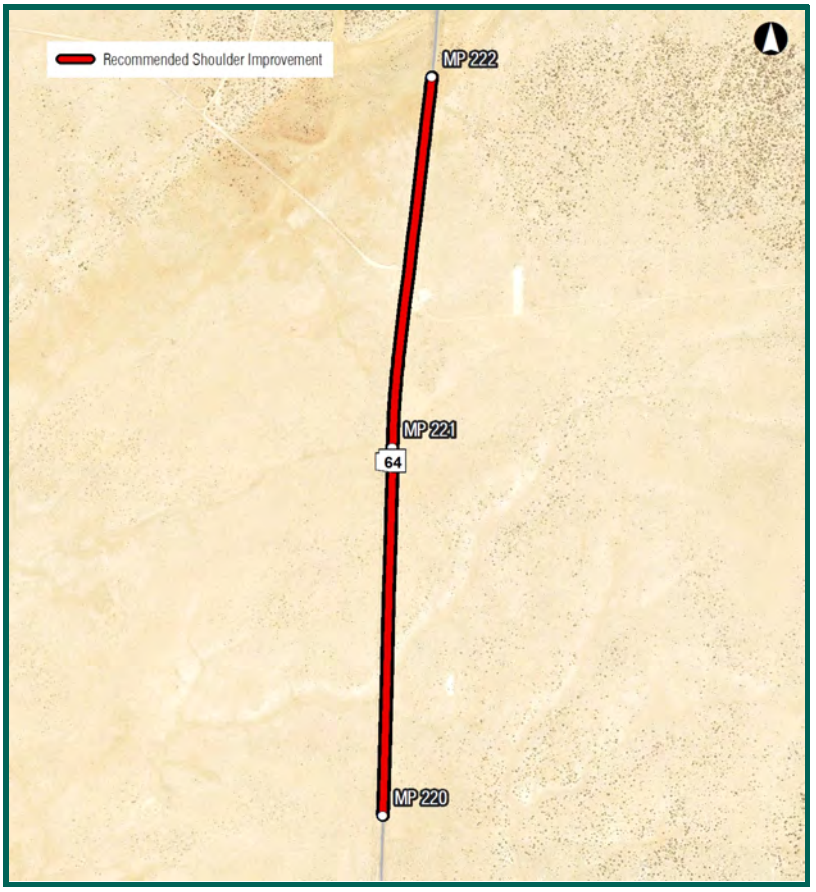
General Location Assessment: Ample room to widen roadway; Paved shoulders in good condition

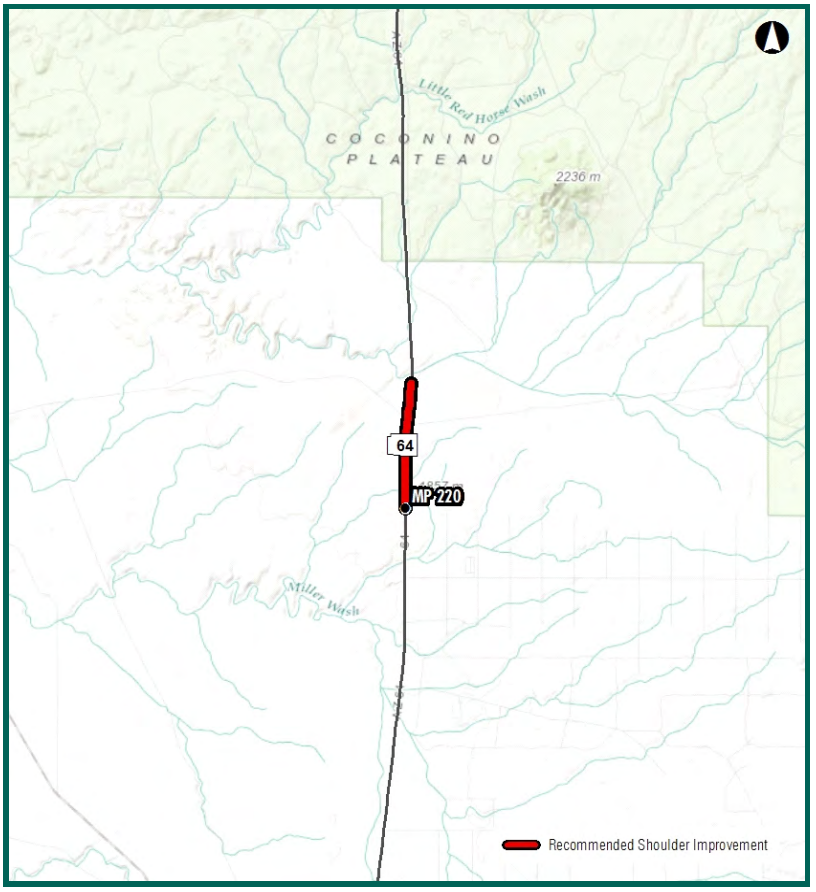
Cost Estimate: $1,800,000

Environmental Overview

Land Ownership: State Trust Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: active fault lines





U 160: MP 378 - MP 380 (Both Directions)

Statewide Rank: 78

Project Details

Route: U 160	**Direction:** Both Directions
BMP: 378.0	**Tier Level:** 1
EMP: 380.0	**District Rank:** 20
District: Holbrook	**Left Shoulder:** 2 to 6 FT
County: Navajo	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: No	**Guardrail:** No
Terrain/Max Slope: 2.23	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 11
Existing AADT: 5206	**Future AADT:** 6200
Existing LOS: D	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 10

Safety Analysis

Total Number of Crashes:	7
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	3
Non-Injury Crashes:	4
Equivalent Property Damage Value:	15
Crash Rate:	0.37

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

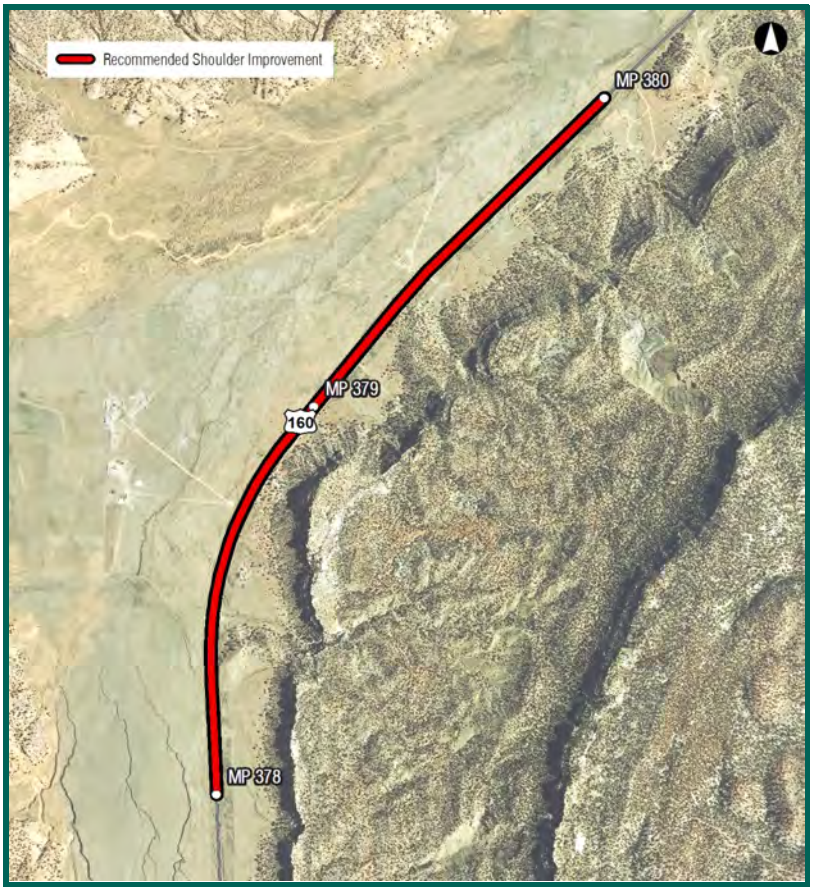
General Location Assessment: Paved shoulder in good condition; Ample room to widen roadway; Narrow shoulders

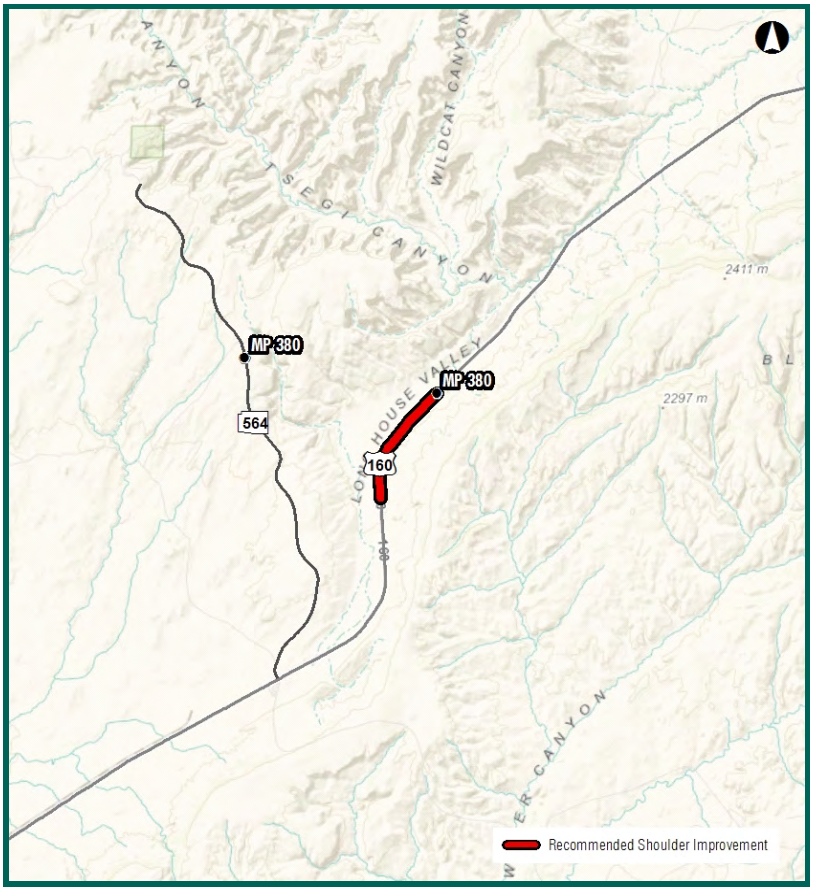
Cost Estimate: $1,800,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Wetlands





U 095: MP 39.9 - MP 42 (Both Directions)

Statewide Rank: 79

Project Details

Route: U 095	**Direction:** Both Directions
BMP: 39.9	**Tier Level:** 1
EMP: 42.0	**District Rank:** 11
District: Yuma	**Left Shoulder:** 2 to 6 FT
County: Yuma	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: No	**Guardrail:** Yes
Terrain/Max Slope: 0.59	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 14
Existing AADT: 7070	**Future AADT:** 8600
Existing LOS: D	**Future LOS:** D
Directional Split: 50 / 50	**Truck %:** 19

Safety Analysis

Total Number of Crashes:	22
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	9
Non-Injury Crashes:	13
Equivalent Property Damage Value:	44
Crash Rate:	0.79

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

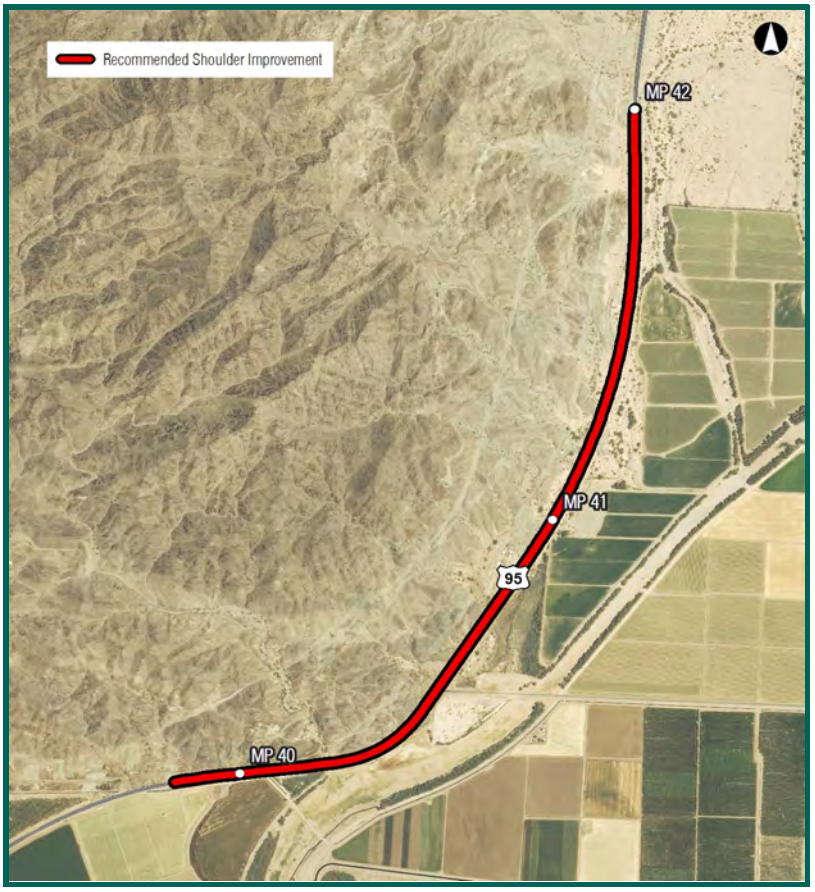
General Location Assessment: Paved shoulders in deteriorated condition; Ample room to widen roadway; Narrow shoulder; Multiple intersecting roadways

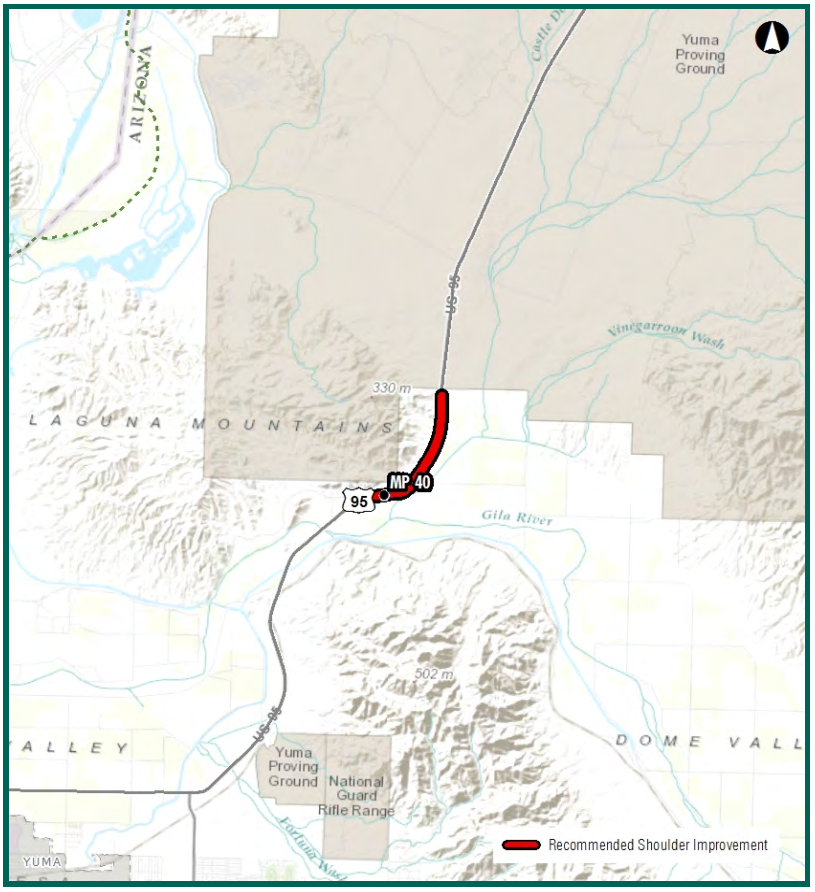
Cost Estimate: $1,935,000

Environmental Overview

Land Ownership: Private Land, State Trust Land, Bureau of Land Mgmt.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Greater Yuma Dstination SRMA; Wildlife Linkage Zone; Wetlands;100-Yr Floodplain; Superfund site; PM10 Nonattainment Area





U 160: MP 440 - MP 442 (Both Directions)

Statewide Rank: 80

Project Details

Route: U 160	**Direction:** Both Directions
BMP: 440.0	**Tier Level:** 1
EMP: 442.0	**District Rank:** 21
District: Holbrook	**Left Shoulder:** 2 to 6 FT
County: Apache	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 4.32	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 33
Existing AADT: 3067	**Future AADT:** 4000
Existing LOS: D	**Future LOS:** E
Directional Split: 52 / 48	**Truck %:** 11

Safety Analysis

Total Number of Crashes:	5
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	2
Non-Injury Crashes:	3
Equivalent Property Damage Value:	12
Crash Rate:	0.45

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

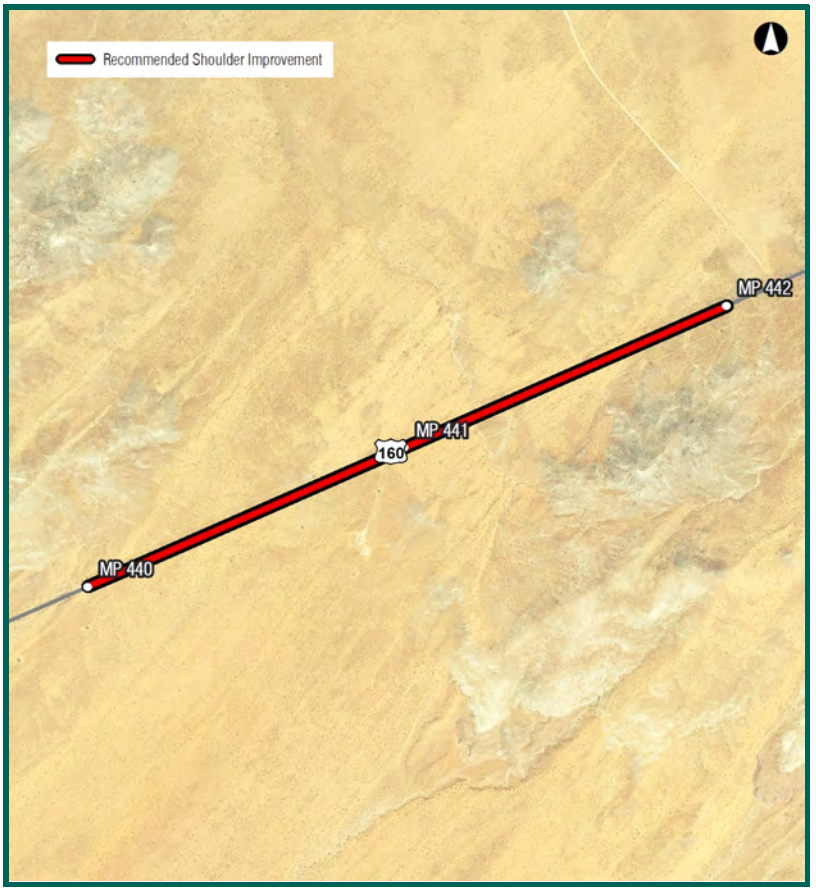
General Location Assessment: Paved shoulder in good condition; Ample room to widen roadway; Narrow shoulders

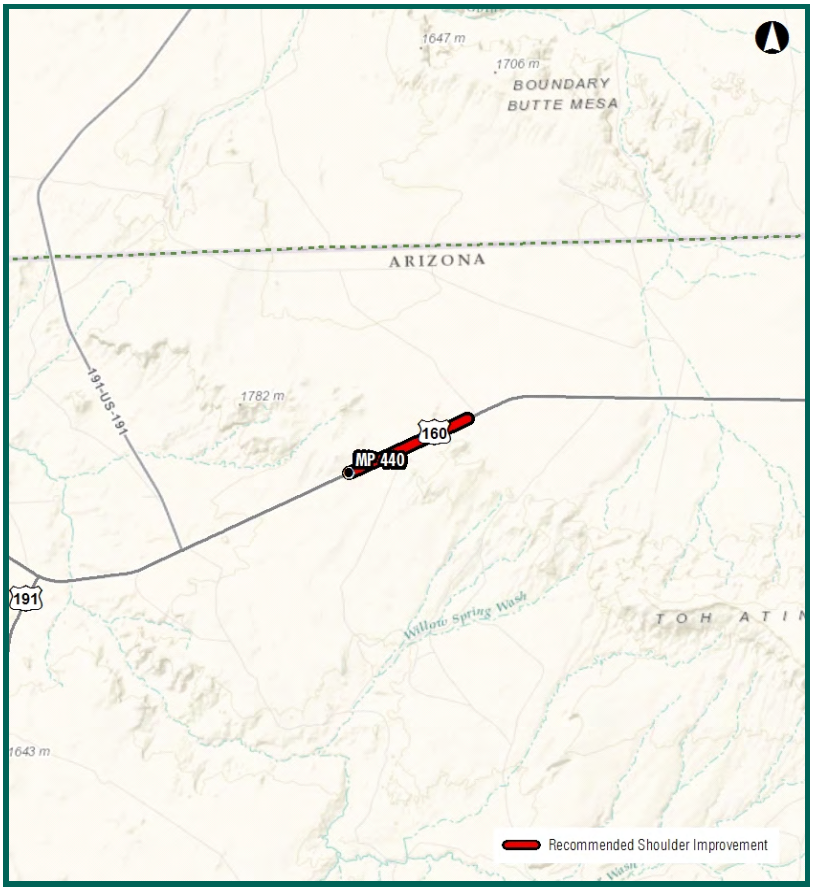
Cost Estimate: $1,800,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints





U 060: MP 344 - MP 346 (Both Directions)

Statewide Rank: 81

Project Details

Route: U 060	**Direction:** Both Directions
BMP: 344.0	**Tier Level:** 1
EMP: 346.0	**District Rank:** 15
District: Globe	**Left Shoulder:** 2 to 6 FT
County: Navajo	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: No	**Guardrail:** No
Terrain/Max Slope: 3.51	**Terrain:** Rolling
Speed Limit(mph): 55	**K-Factor:** 9
Existing AADT: 7370	**Future AADT:** 12000
Existing LOS: D	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 11

Safety Analysis

Total Number of Crashes:	23
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	11
Non-Injury Crashes:	12
Equivalent Property Damage Value:	52
Crash Rate:	0.86

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

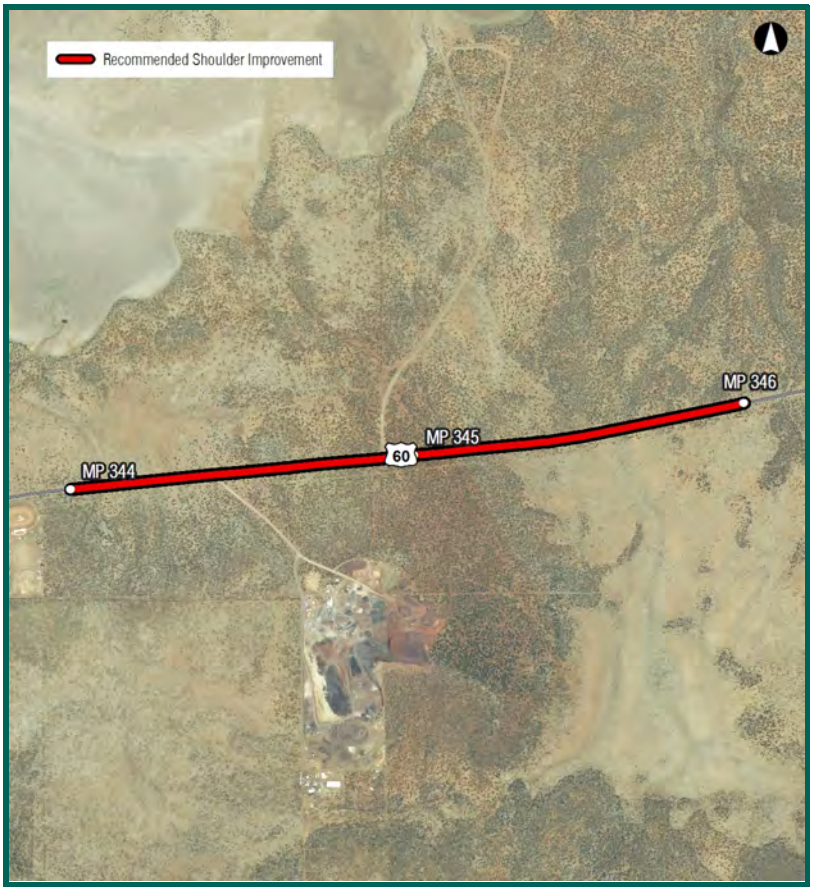
General Location Assessment: Paved shoulders in good condition; Ample room to widen roadway; Unpaved clear zone adjacent to shoulder; One intersecting roadway

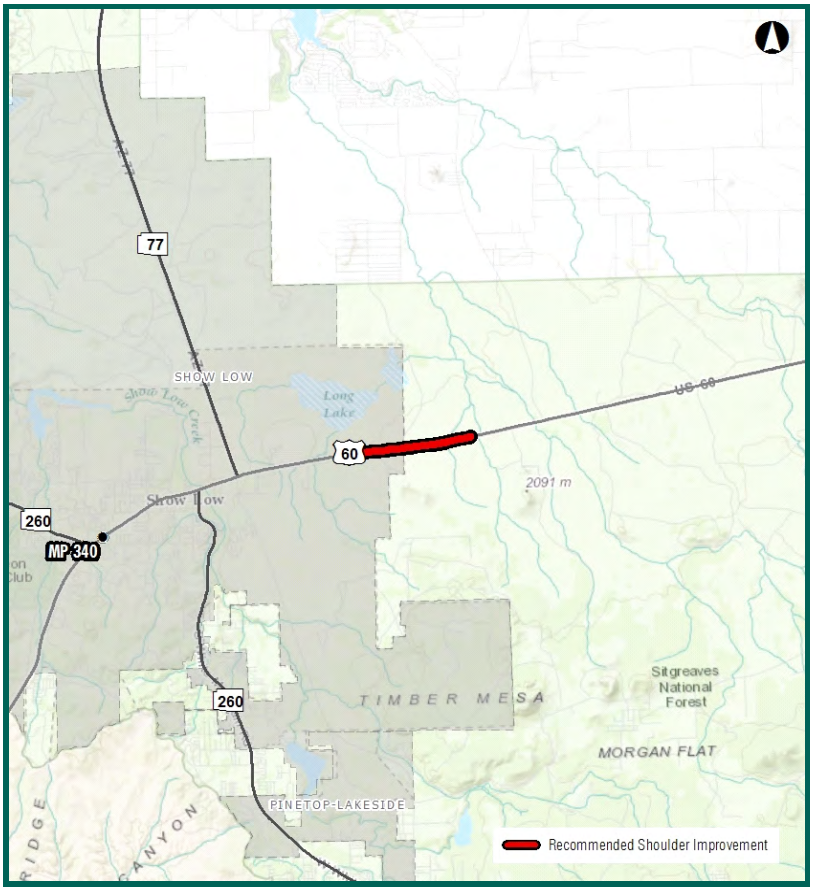
Cost Estimate: $1,980,000

Environmental Overview

Land Ownership: Apache-Sitgreaves N.F, Private Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: 100-Yr Floodplain





S 064: MP 198 - MP 200 (Both Directions)

Statewide Rank: 82

Project Details

Route: S 064	**Direction:** Both Directions
BMP: 198.0	**Tier Level:** 1
EMP: 200.0	**District Rank:** 17
District: Flagstaff	**Left Shoulder:** 2 to 6 FT
County: Coconino	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: No	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 3.8	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 10
Existing AADT: 5171	**Future AADT:** 4100
Existing LOS: D	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 14

Safety Analysis

Total Number of Crashes:	12
Number of Fatal Crashes:	2
Injury & Possible Injury Crashes:	5
Non-Injury Crashes:	5
Equivalent Property Damage Value:	50
Crash Rate:	0.64

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

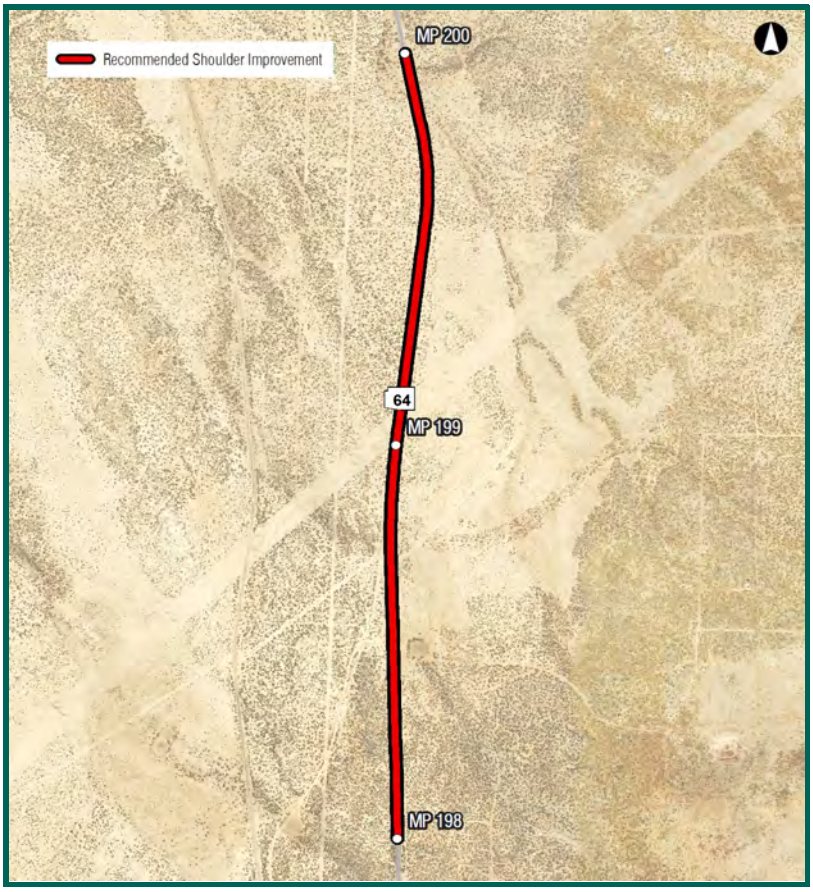
General Location Assessment: Ample room to widen roadway; Paved shoulders in good condition

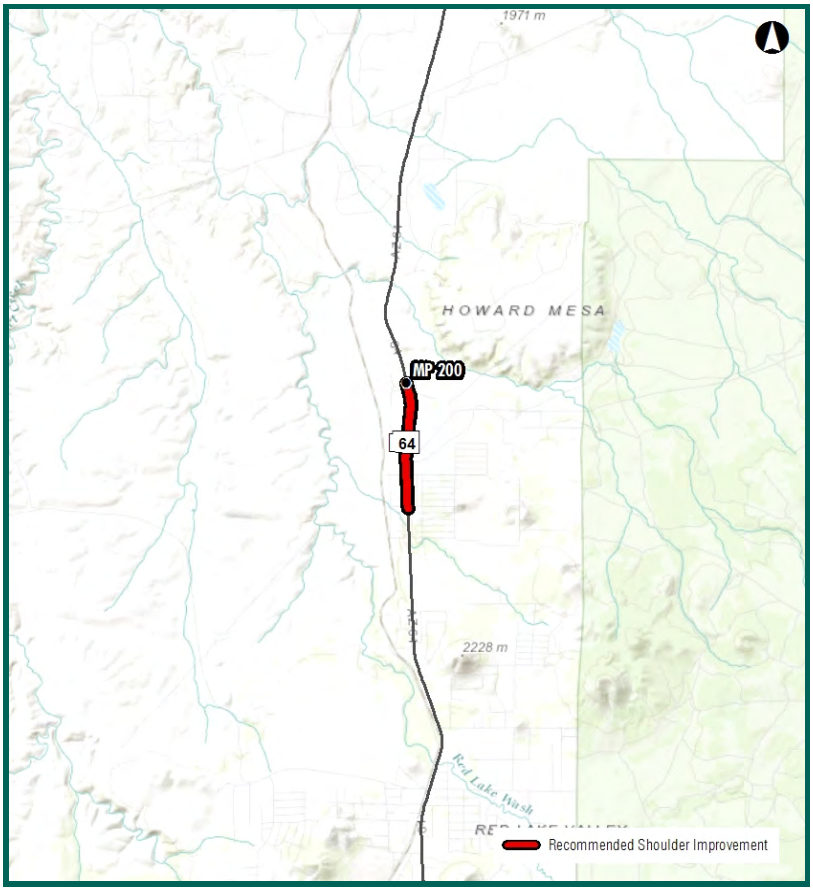
Cost Estimate: $1,980,000

Environmental Overview

Land Ownership: Private Land, State Trust Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Active fault lines; Wetlands





S 264: MP 380 - MP 382 (Both Directions)

Statewide Rank: 83

Project Details

Route: S 264	**Direction:** Both Directions
BMP: 380.0	**Tier Level:** 1
EMP: 382.0	**District Rank:** 22
District: Holbrook	**Left Shoulder:** Less than 2 FT
County: Navajo	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 7.05	**Terrain:** Mountainous
Speed Limit(mph): 65	**K-Factor:** 11
Existing AADT: 2964	**Future AADT:** 3100
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 16

Safety Analysis

Total Number of Crashes:	4
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	3
Non-Injury Crashes:	0
Equivalent Property Damage Value:	18
Crash Rate:	0.37

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

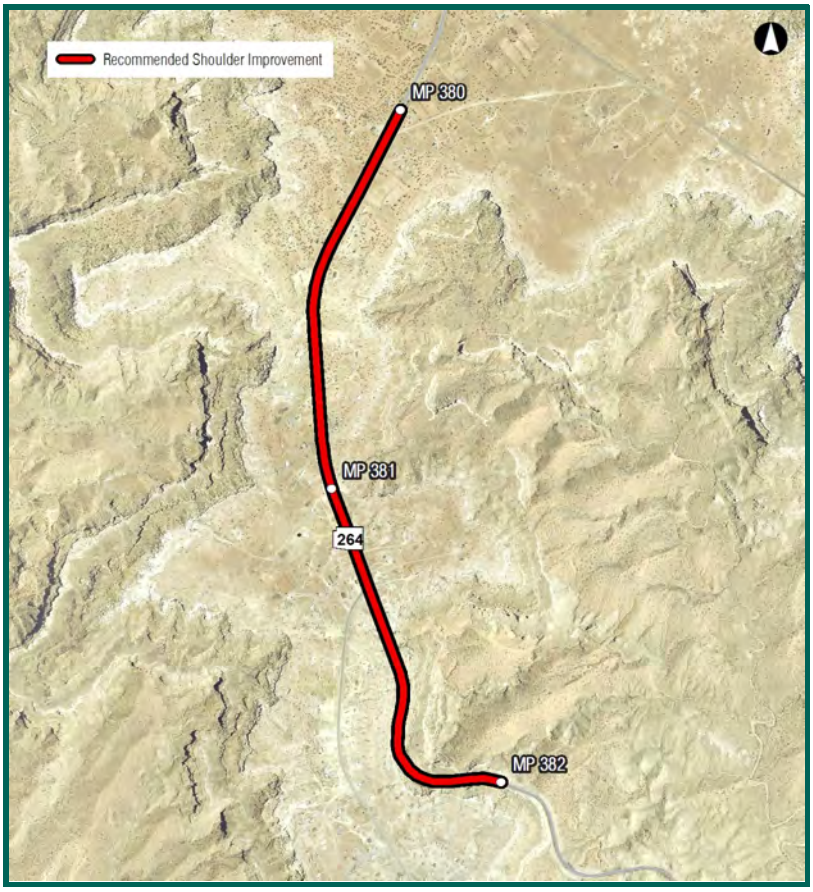
General Location Assessment: Narrow shoulder and roadside cliffs may limit construction (MP381.4-382.0); Unpaved shoulder; Ample room to widen roadway (MP 380-381.4)

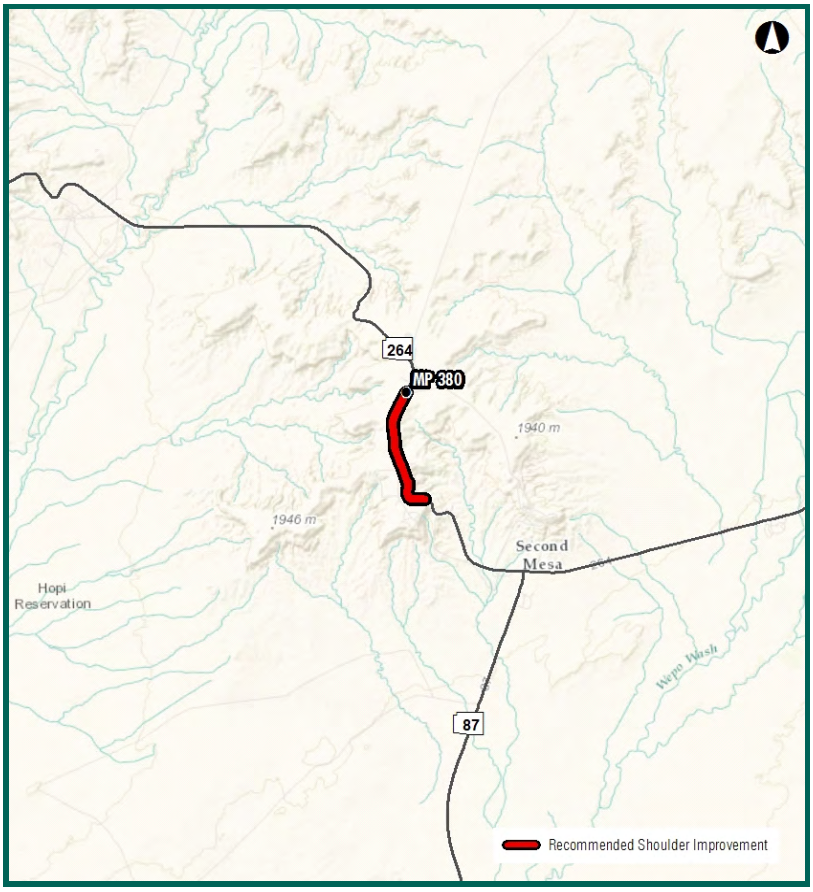
Cost Estimate: $3,780,000

Environmental Overview

Land Ownership: Hopi Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints





S 089: MP 329.3 - MP 329.5 (Both Directions)

Statewide Rank: 84

Project Details

Route: S 089	**Direction:** Both Directions
BMP: 329.3	**Tier Level:** 1
EMP: 329.5	**District Rank:** 8
District: Prescott	**Left Shoulder:** Less than 2 FT
County: Yavapai	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Urban Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: No	**Guardrail:** No
Terrain/Max Slope: 0.137	**Terrain:** Level
Speed Limit(mph): 55	**K-Factor:** 9
Existing AADT: 11035	**Future AADT:** 12500
Existing LOS: C	**Future LOS:** C
Directional Split: 50 / 50	**Truck %:** 8

Safety Analysis

Total Number of Crashes:	72
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	21
Non-Injury Crashes:	50
Equivalent Property Damage Value:	151
Crash Rate:	3.06

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

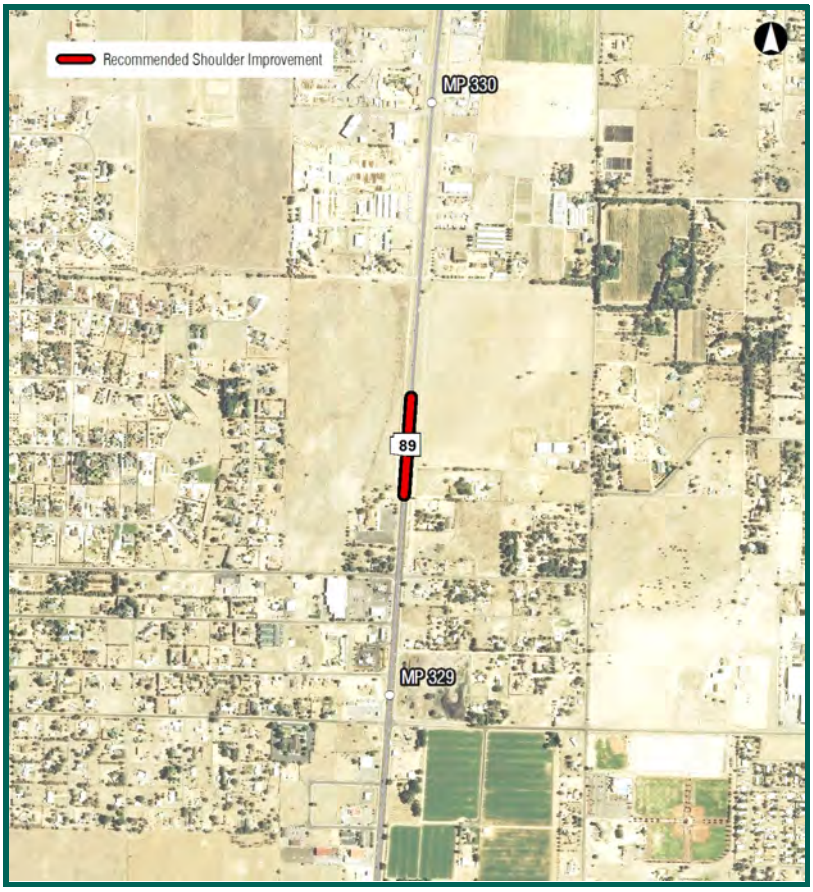
General Location Assessment: Paved shoulders in good condition; Ample room to widen roadway

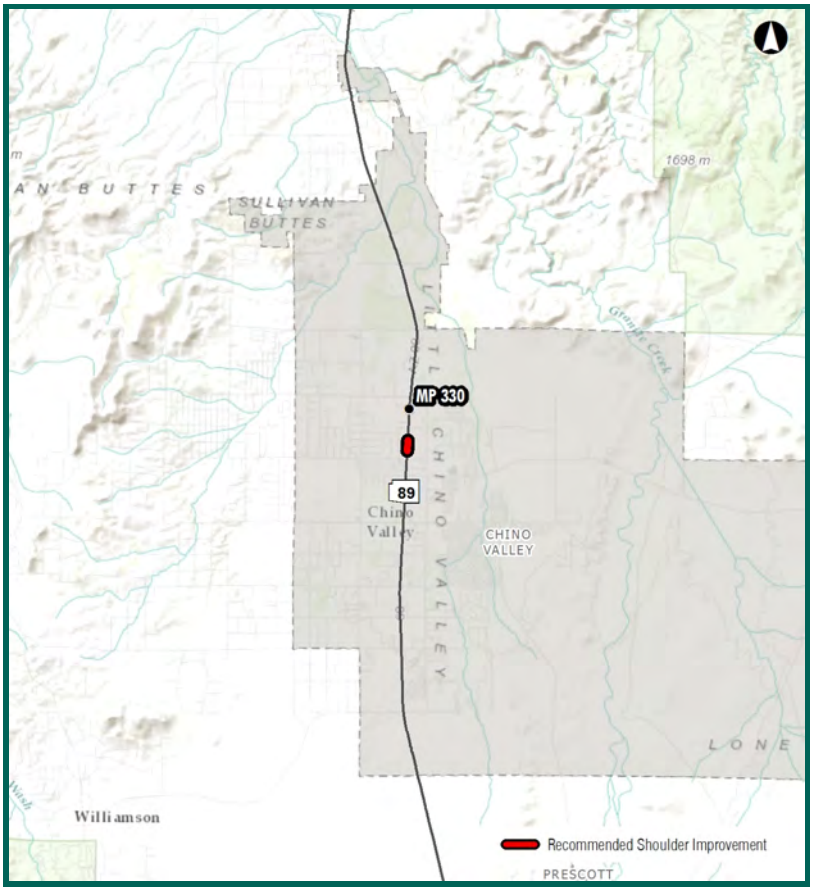
Cost Estimate: $267,750

Environmental Overview

Land Ownership: Private Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Wetlands





S 264: MP 378 - MP 380 (Both Directions)

Statewide Rank: 85

Project Details

Route: S 264	**Direction:** Both Directions
BMP: 378.0	**Tier Level:** 1
EMP: 380.0	**District Rank:** 23
District: Holbrook	**Left Shoulder:** Less than 2 FT
County: Navajo	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Rural Minor Collector

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 5.87	**Terrain:** Mountainous
Speed Limit(mph): 65	**K-Factor:** 11
Existing AADT: 2964	**Future AADT:** 3100
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 16

Safety Analysis

Total Number of Crashes:	3
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	1
Non-Injury Crashes:	1
Equivalent Property Damage Value:	17
Crash Rate:	0.28

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

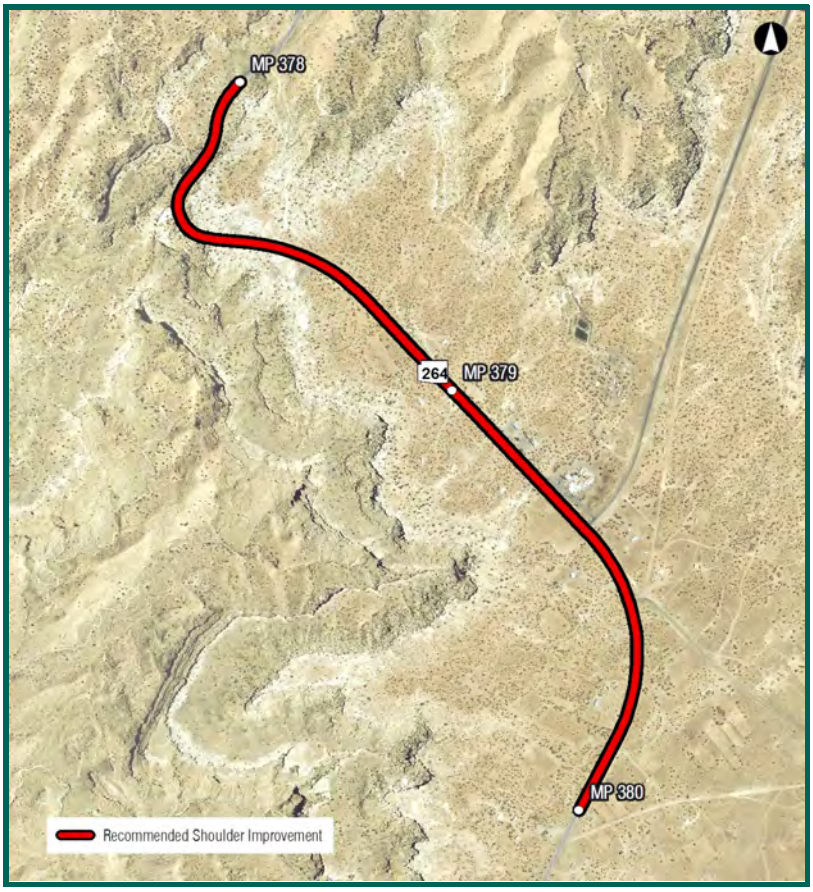
General Location Assessment: Narrow shoulder and roadside cliffs may limit construction (MP 378.0-378.5); Ample room to widen roadway; Multiple intersecting roadways

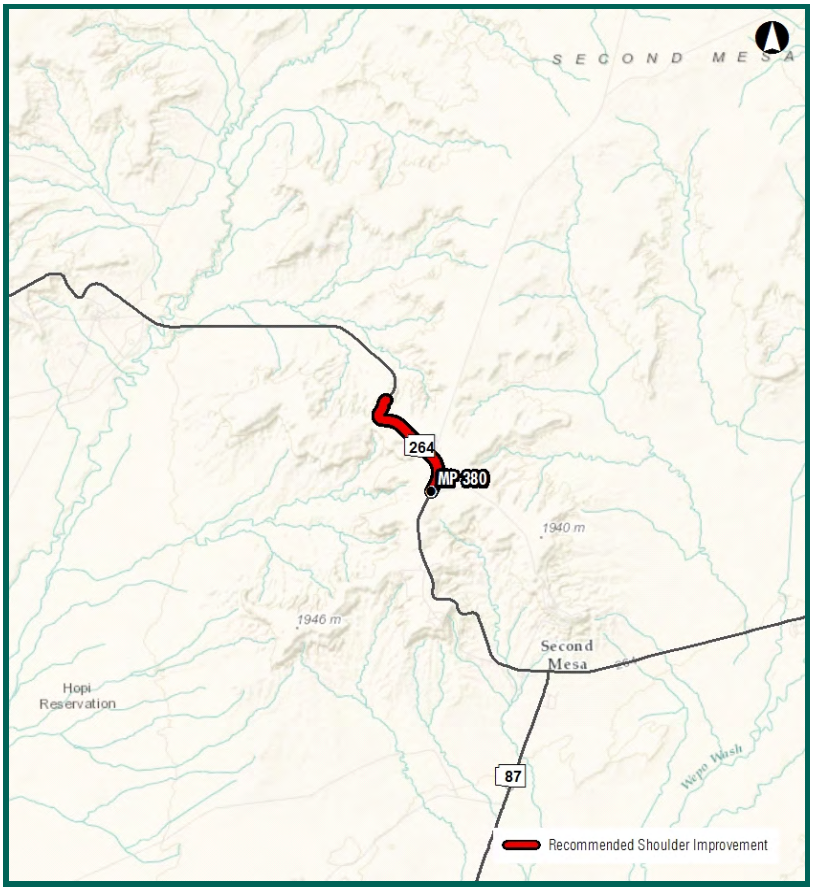
Cost Estimate: $3,780,000

Environmental Overview

Land Ownership: Hopi Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wetlands





U 060: MP 290 - MP 292 (Both Directions)

Statewide Rank: 86

Project Details

Route: U 060	**Direction:** Both Directions
BMP: 290.0	**Tier Level:** 1
EMP: 292.0	**District Rank:** 16
District: Globe	**Left Shoulder:** 6 to 8 FT
County: Gila	**Right Shoulder:** 6 to 8 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial

Wideload Corridor: Yes	**Pullouts:** Yes
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 6.3	**Terrain:** Mountainous
Speed Limit(mph): 65	**K-Factor:** 15
Existing AADT: 2276	**Future AADT:** 3300
Existing LOS: C	**Future LOS:** C
Directional Split: 52 / 48	**Truck %:** 11

Safety Analysis

Total Number of Crashes:	47
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	27
Non-Injury Crashes:	20
Equivalent Property Damage Value:	136
Crash Rate:	5.66

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

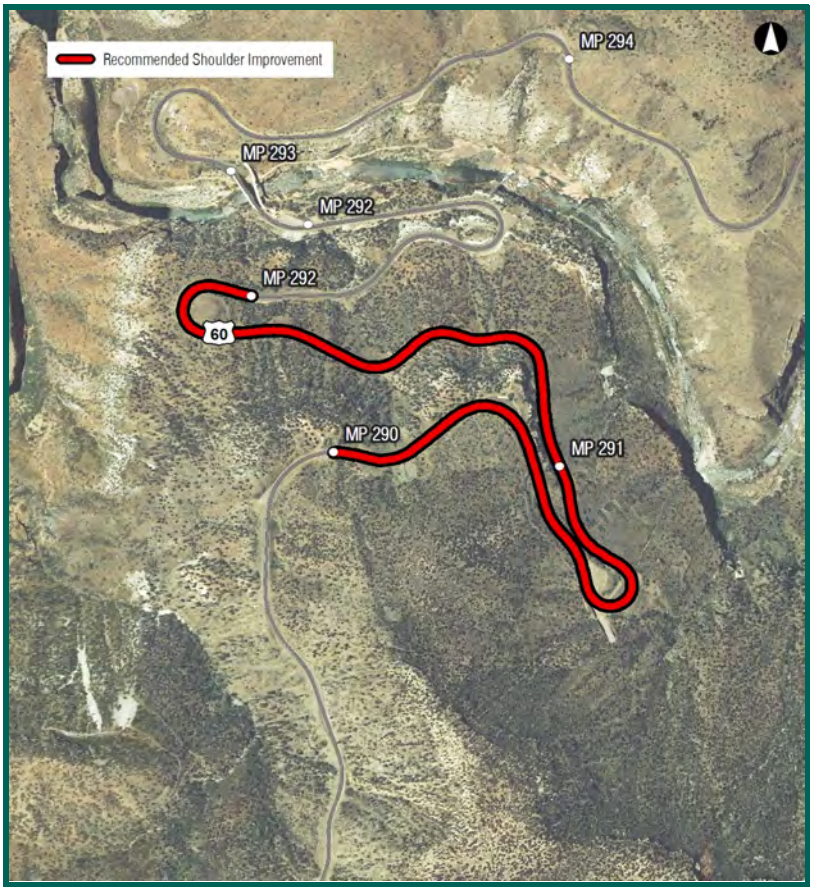
General Location Assessment: Narrow shoulder; Paved shoulders in good condition; Roadside cliffs may limit construction

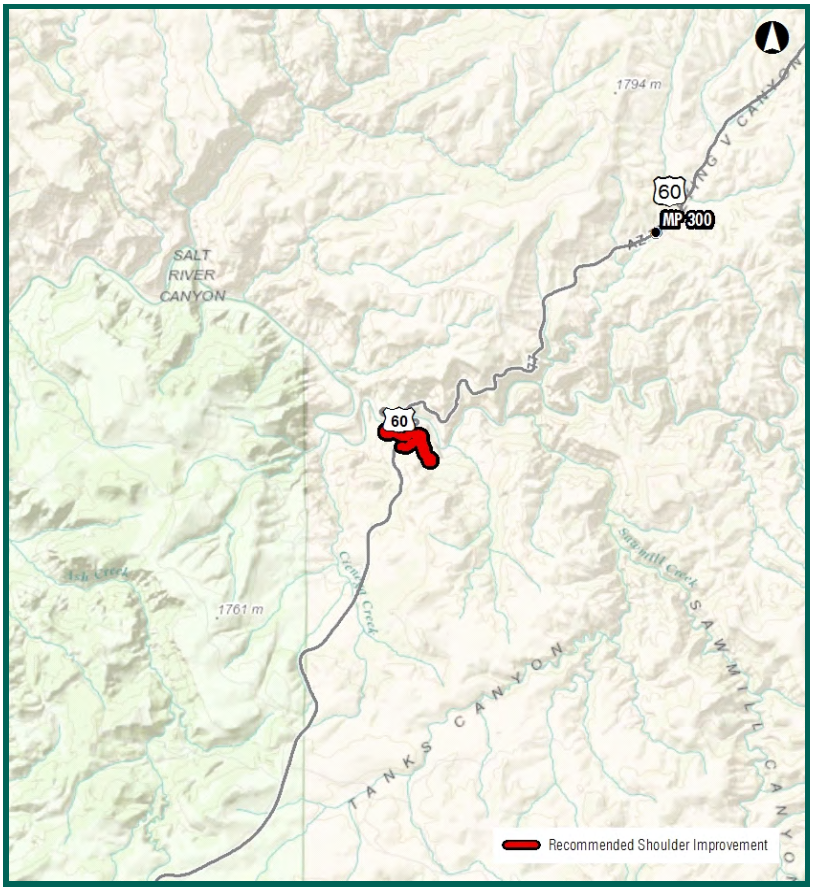
Cost Estimate: $540,000

Environmental Overview

Land Ownership: San Carlos Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Riparian Habitats; Wetlands; Critical Habitat Area





U 160: MP 374 - MP 376 (Both Directions)

Statewide Rank: 87

Project Details

Route: U 160	**Direction:** Both Directions
BMP: 374.0	**Tier Level:** 1
EMP: 376.0	**District Rank:** 24
District: Holbrook	**Left Shoulder:** 2 to 6 FT
County: Navajo	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: No	**Guardrail:** No
Terrain/Max Slope: 3.69	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 11
Existing AADT: 5206	**Future AADT:** 6200
Existing LOS: D	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 10

Safety Analysis

Total Number of Crashes:	2
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	1
Non-Injury Crashes:	1
Equivalent Property Damage Value:	5
Crash Rate:	0.11

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

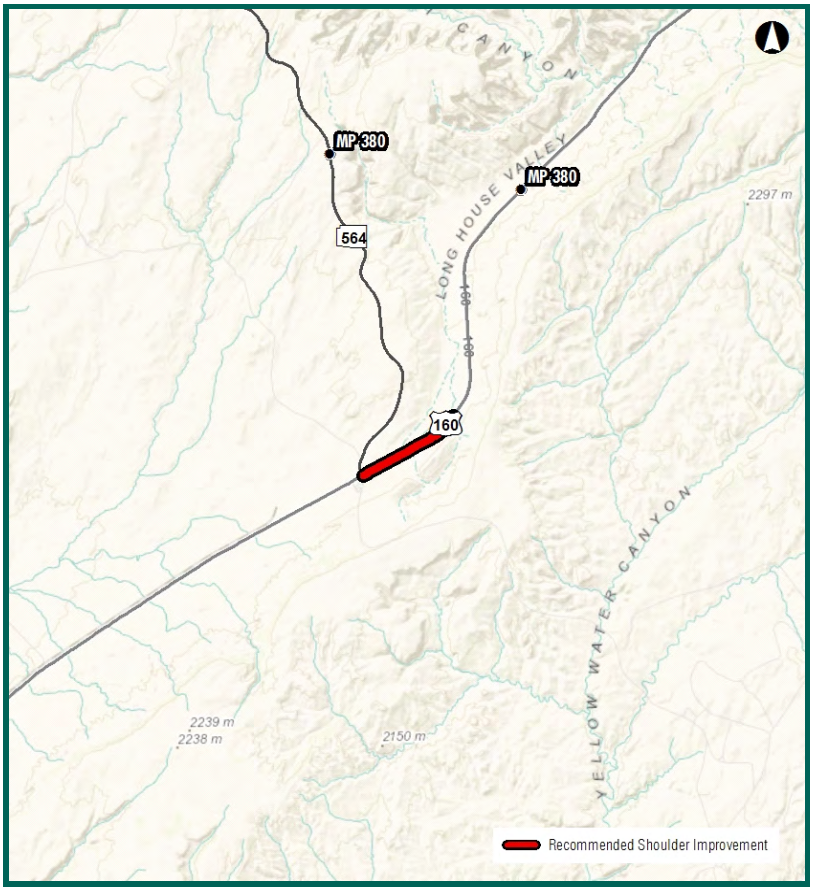
General Location Assessment: Paved shoulders in good condition; Ample room to widen roadway

Cost Estimate: $1,800,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Wetlands



U 160: MP 380 - MP 382 (Both Directions)

Statewide Rank: 88

Project Details

Route: U 160	**Direction:** Both Directions
BMP: 380.0	**Tier Level:** 1
EMP: 382.0	**District Rank:** 25
District: Holbrook	**Left Shoulder:** 2 to 6 FT
County: Navajo	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: No	**Guardrail:** Yes
Terrain/Max Slope: 4.41	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 11
Existing AADT: 5206	**Future AADT:** 6200
Existing LOS: D	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 10

Safety Analysis

Total Number of Crashes:	3
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	2
Non-Injury Crashes:	1
Equivalent Property Damage Value:	7
Crash Rate:	0.16

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

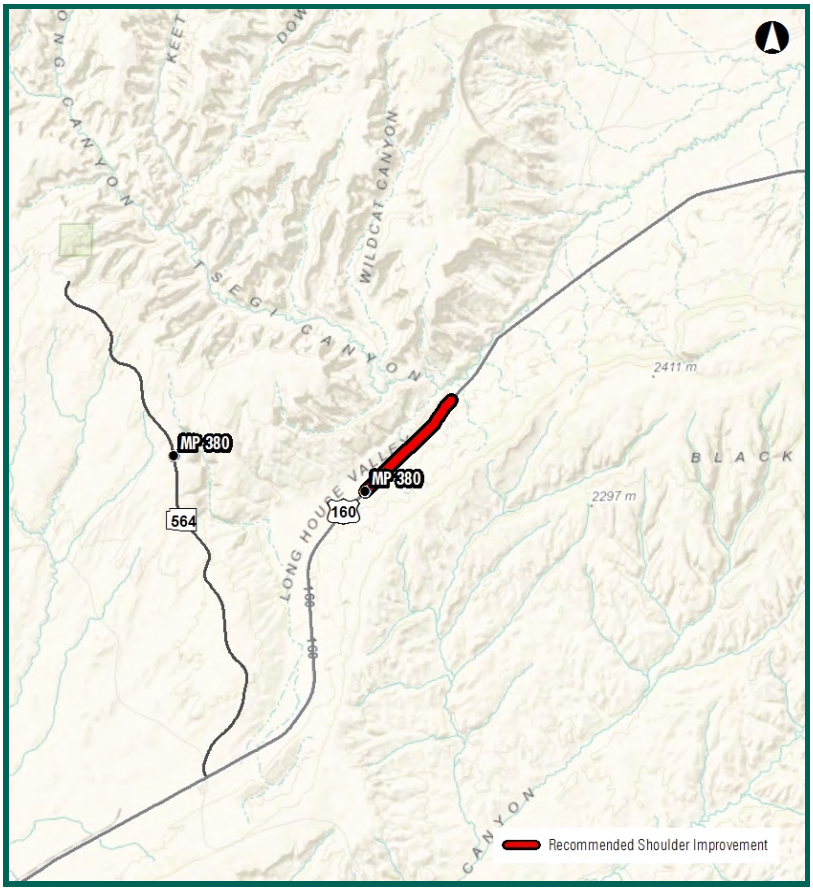
General Location Assessment: Paved shoulders in good condition; Narrow shoulders; Ample room to widen roadway; Multiple intersecting roadways

Cost Estimate: $1,800,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Wetlands



S 064: MP 212 - MP 214 (Both Directions)

Statewide Rank: 89

Project Details

Route: S 064	**Direction:** Both Directions
BMP: 212.0	**Tier Level:** 1
EMP: 214.0	**District Rank:** 18
District: Flagstaff	**Left Shoulder:** 2 to 6 FT
County: Coconino	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Major Collector

Wideload Corridor: No	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 1.19	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 10
Existing AADT: 5171	**Future AADT:** 4100
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 14

Safety Analysis

Total Number of Crashes:	11
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	2
Non-Injury Crashes:	9
Equivalent Property Damage Value:	17
Crash Rate:	0.58

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

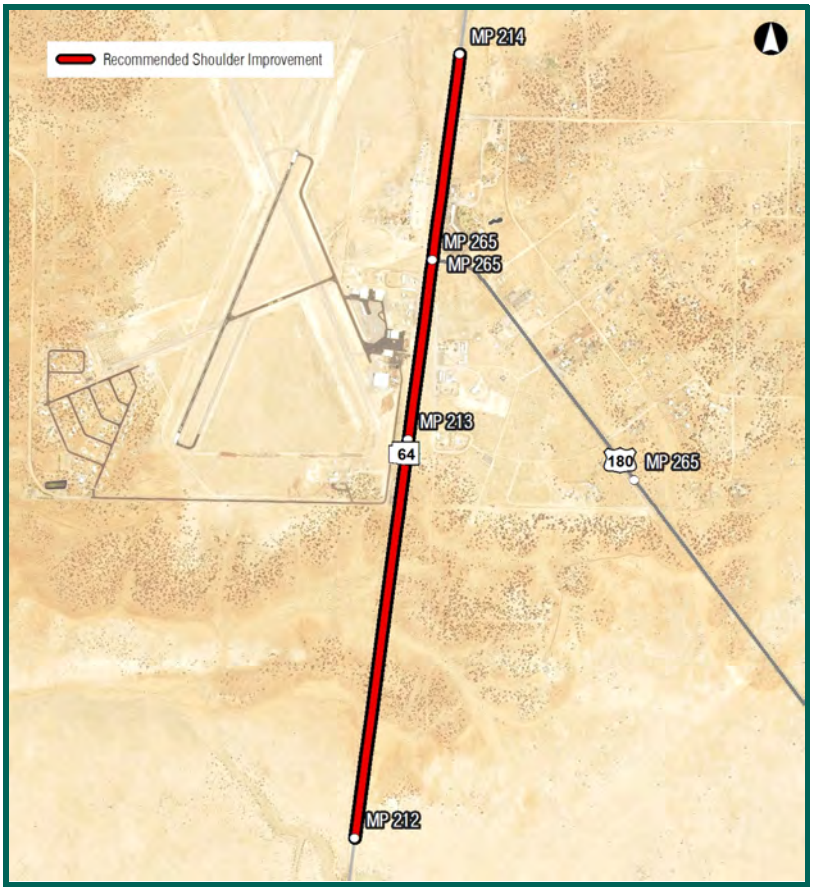
General Location Assessment: Ample room to widen roadway; Paved shoulders in good condition; Multiple intersecting roadways; Intersection with US180

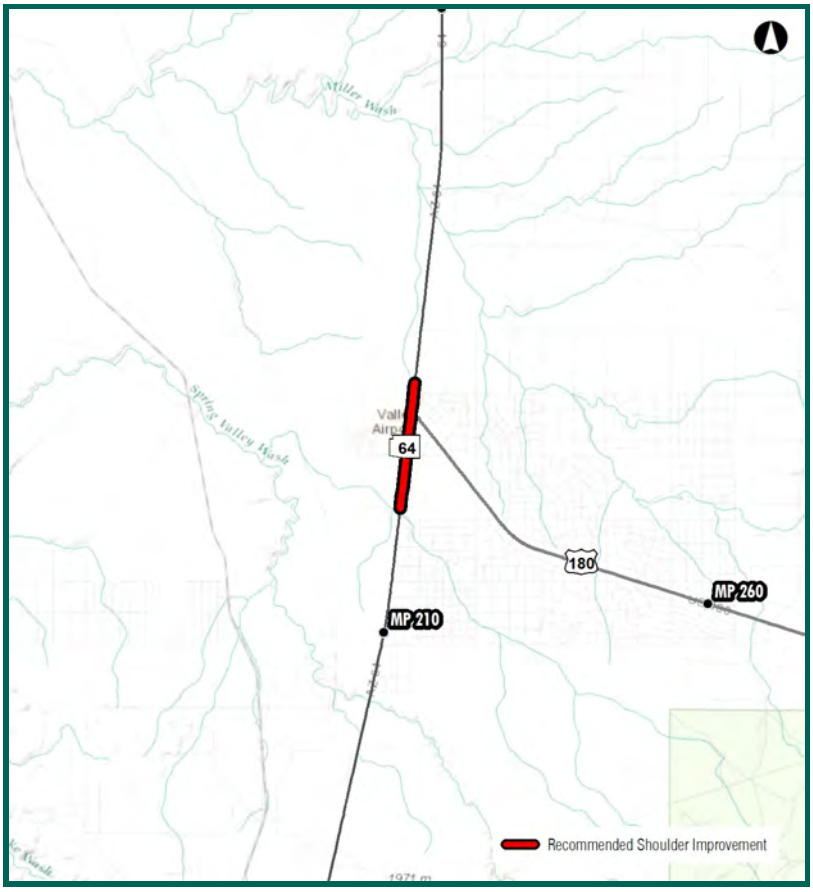
Cost Estimate: $1,800,000

Environmental Overview

Land Ownership: Private Land, State Trust Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Wetlands





U 089: MP 469.6 - MP 470.8 (Both Directions)

Statewide Rank: 90

Project Details

Route: U 089	**Direction:** Both Directions
BMP: 469.6	**Tier Level:** 1
EMP: 470.8	**District Rank:** 19
District: Flagstaff	**Left Shoulder:** 2 to 6 FT
County: Coconino	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: No	**Guardrail:** No
Terrain/Max Slope: 1.1	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 9
Existing AADT: 6762	**Future AADT:** 8200
Existing LOS: C	**Future LOS:** D
Directional Split: 49 / 51	**Truck %:** 13

Safety Analysis

Total Number of Crashes:	8
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	2
Non-Injury Crashes:	6
Equivalent Property Damage Value:	14
Crash Rate:	0.56

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

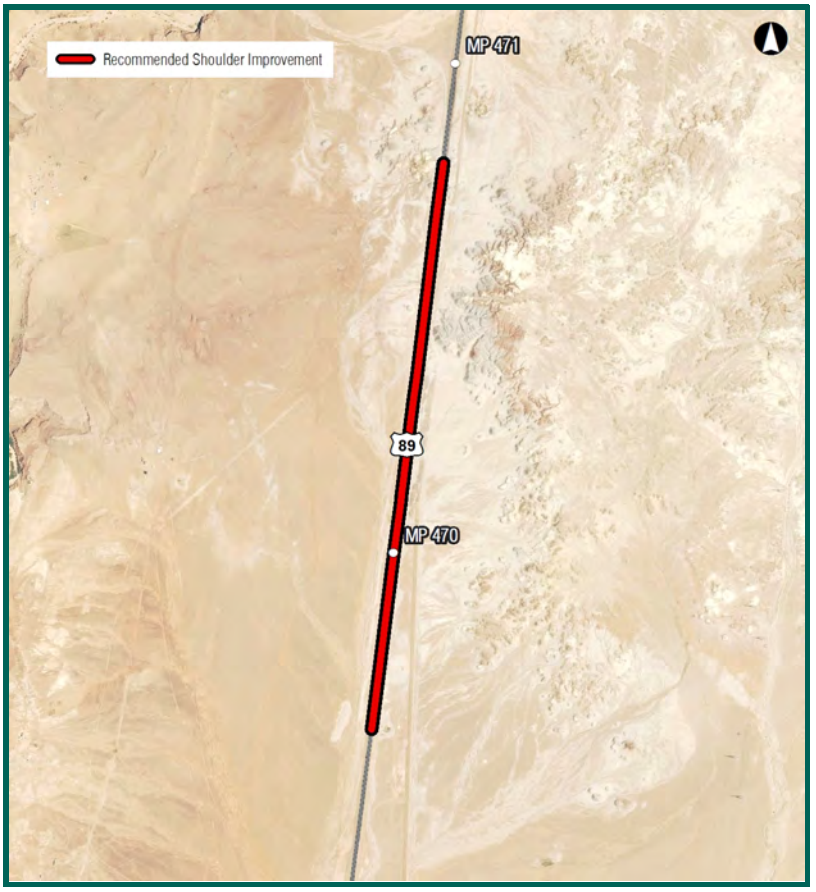
General Location Assessment: Unpaved shoulders; Ample room to widen roadway

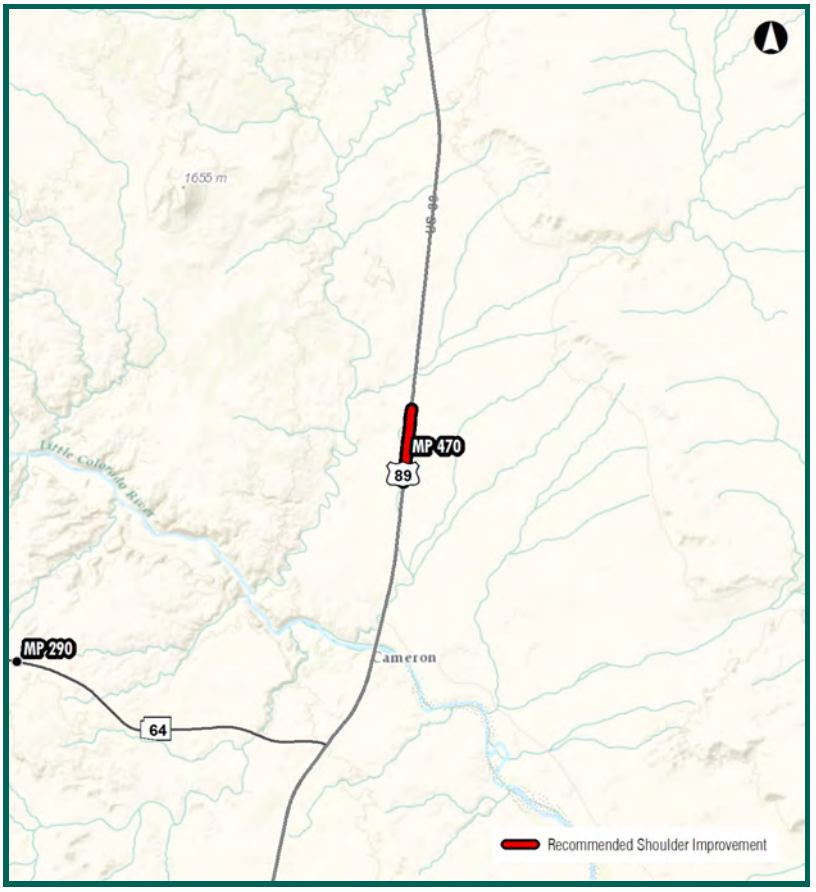
Cost Estimate: $1,044,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints





U 160: MP 376 - MP 378 (Both Directions)

Statewide Rank: 91

Project Details

Route: U 160	**Direction:** Both Directions
BMP: 376.0	**Tier Level:** 1
EMP: 378.0	**District Rank:** 26
District: Holbrook	**Left Shoulder:** 2 to 6 FT
County: Navajo	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: No	**Guardrail:** No
Terrain/Max Slope: 2.88	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 11
Existing AADT: 5206	**Future AADT:** 6200
Existing LOS: D	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 10

Safety Analysis

Total Number of Crashes:	5
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	1
Non-Injury Crashes:	4
Equivalent Property Damage Value:	6
Crash Rate:	0.26

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

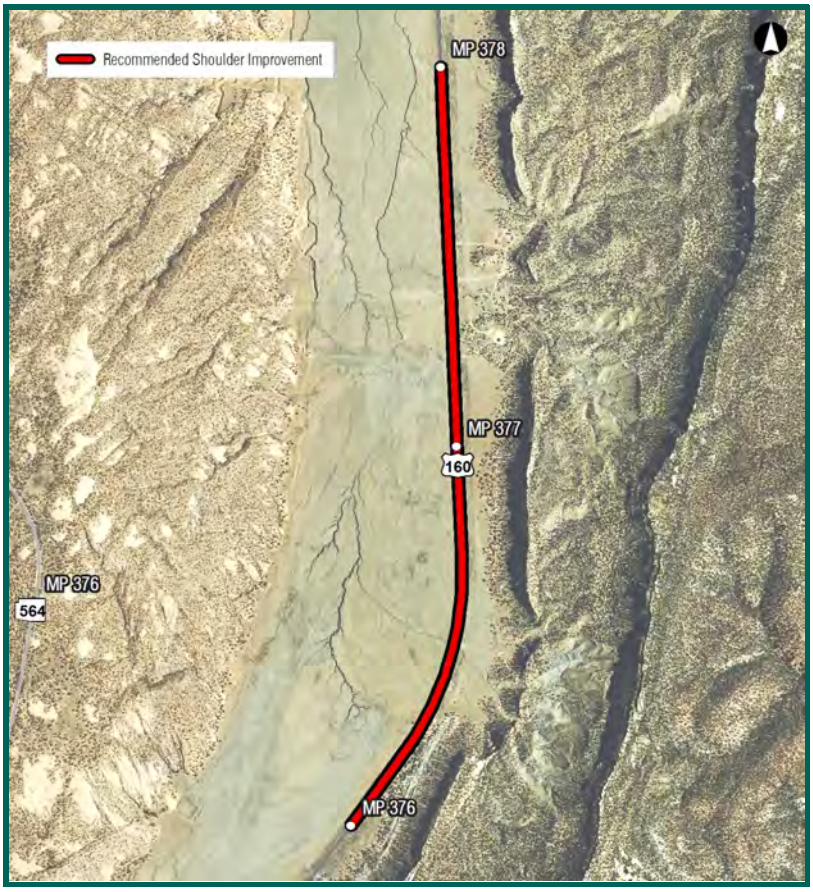
General Location Assessment: Paved shoulders in good condition; Ample room to widen roadway; Narrow shoulders

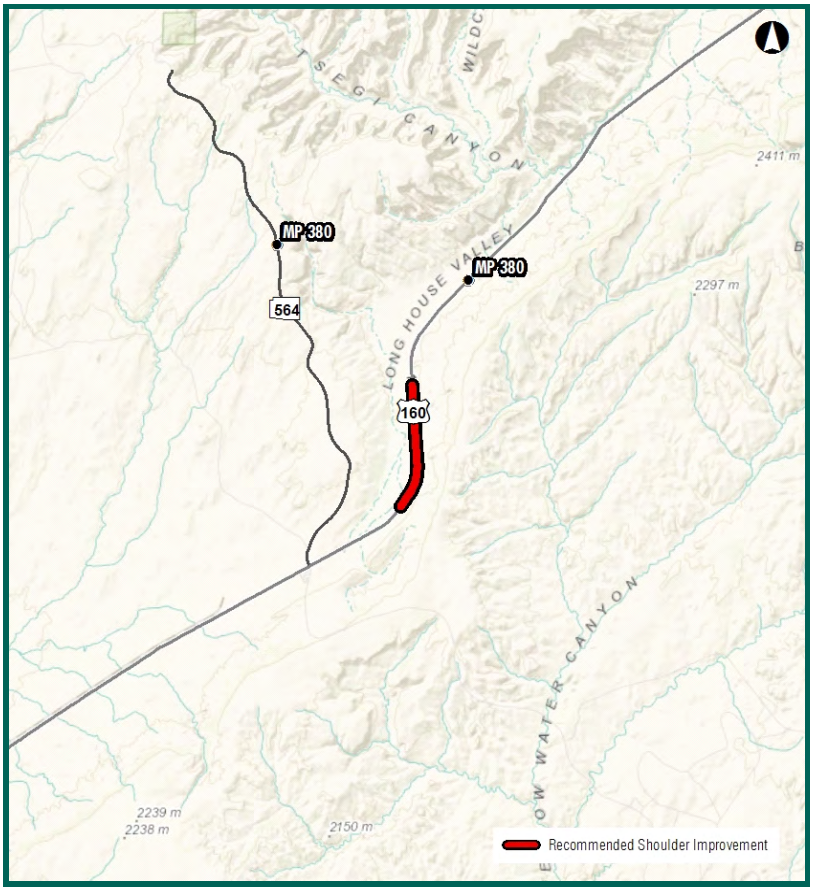
Cost Estimate: $1,800,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Wetlands





U 191: MP 454 - MP 456 (Both Directions)

Statewide Rank: 92

Project Details

Route: U 191	**Direction:** Both Directions
BMP: 454.0	**Tier Level:** 1
EMP: 456.0	**District Rank:** 27
District: Holbrook	**Left Shoulder:** Less than 2 FT
County: Apache	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Rural Major Collector

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 0.43	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 10
Existing AADT: 4486	**Future AADT:** 4800
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 8

Safety Analysis

Total Number of Crashes:	6
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	4
Non-Injury Crashes:	1
Equivalent Property Damage Value:	21
Crash Rate:	0.37

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

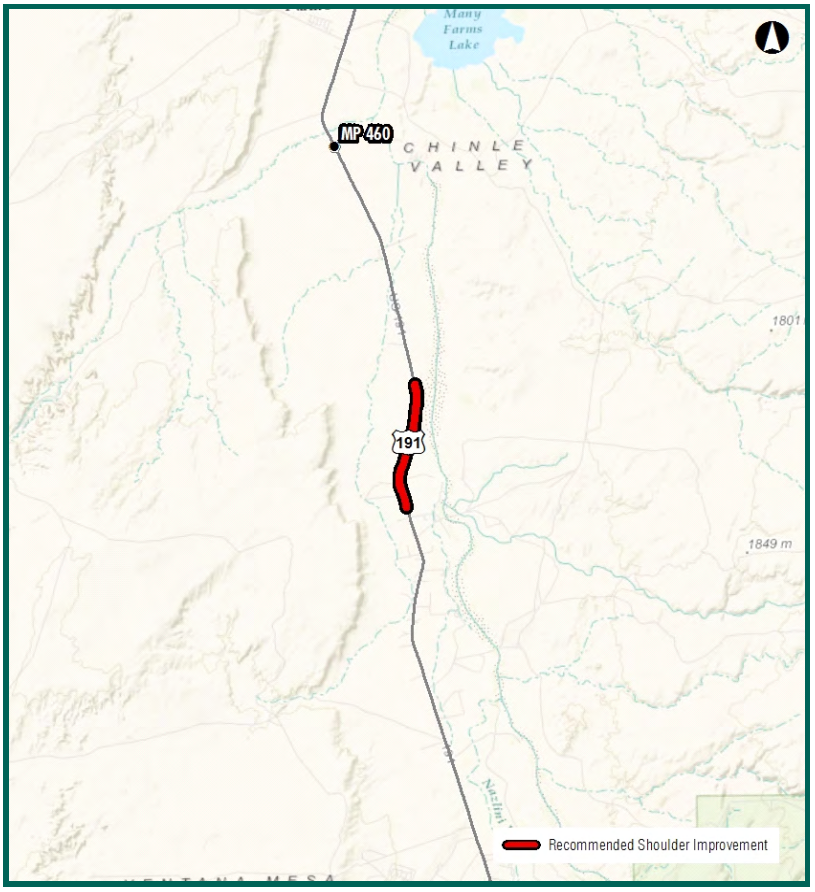
General Location Assessment: Unpaved shoulder; Ample room to widen roadway; Multiple intersecting roadways

Cost Estimate: $3,150,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Wetlands



U 160: MP 370 - MP 372 (Both Directions)

Statewide Rank: 93

Project Details

Route: U 160	**Direction:** Both Directions
BMP: 370.0	**Tier Level:** 1
EMP: 372.0	**District Rank:** 28
District: Holbrook	**Left Shoulder:** 2 to 6 FT
County: Navajo	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: No	**Guardrail:** No
Terrain/Max Slope: 1.79	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 10
Existing AADT: 5085	**Future AADT:** 5500
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 11

Safety Analysis

Total Number of Crashes:	8
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	3
Non-Injury Crashes:	5
Equivalent Property Damage Value:	11
Crash Rate:	0.43

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

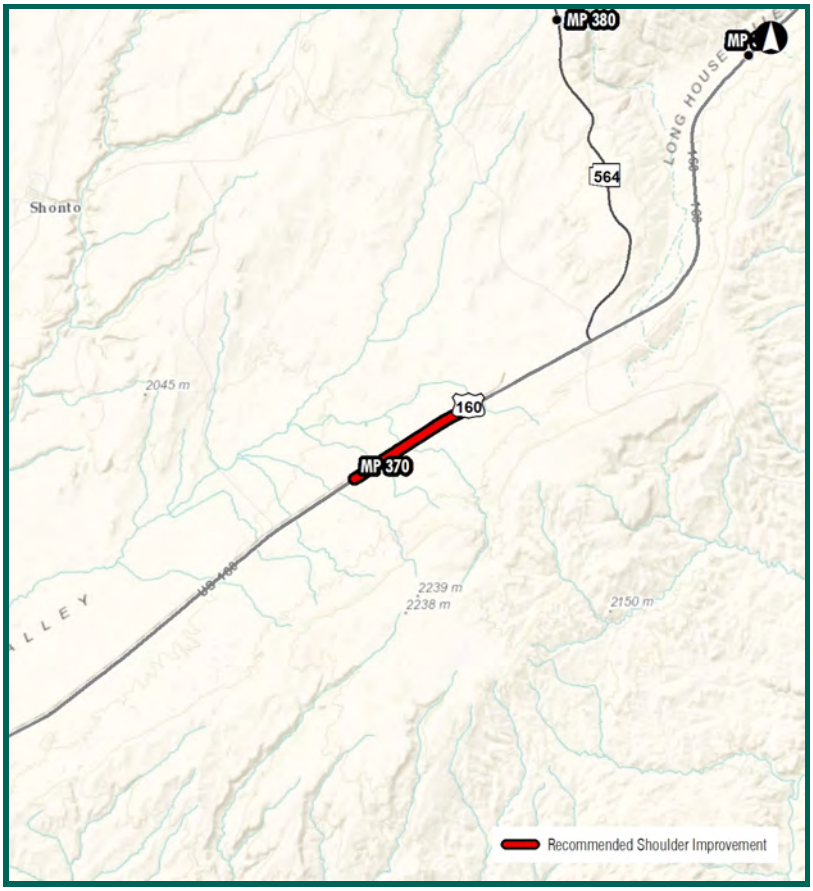
General Location Assessment: Paved shoulders in deteriorating condition; Ample room to widen roadway; Narrow shoulders

Cost Estimate: $1,800,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wetlands



S 064: MP 200 - MP 202 (Both Directions)

Statewide Rank: 94

Project Details

Route: S 064	**Direction:** Both Directions
BMP: 200.0	**Tier Level:** 1
EMP: 202.0	**District Rank:** 20
District: Flagstaff	**Left Shoulder:** 2 to 6 FT
County: Coconino	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: No	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 4.69	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 10
Existing AADT: 5171	**Future AADT:** 4100
Existing LOS: D	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 14

Safety Analysis

Total Number of Crashes:	16
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	1
Non-Injury Crashes:	15
Equivalent Property Damage Value:	22
Crash Rate:	0.85

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

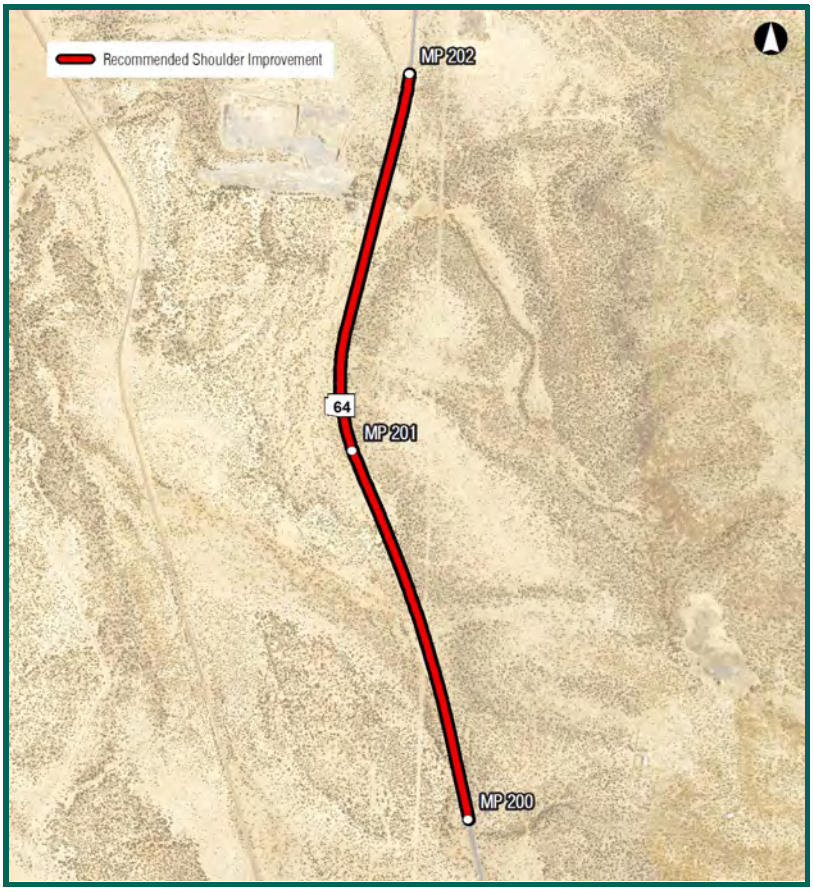
General Location Assessment: Ample room to widen roadway; Paved shoulders in good condition; Multiple intersecting roadways

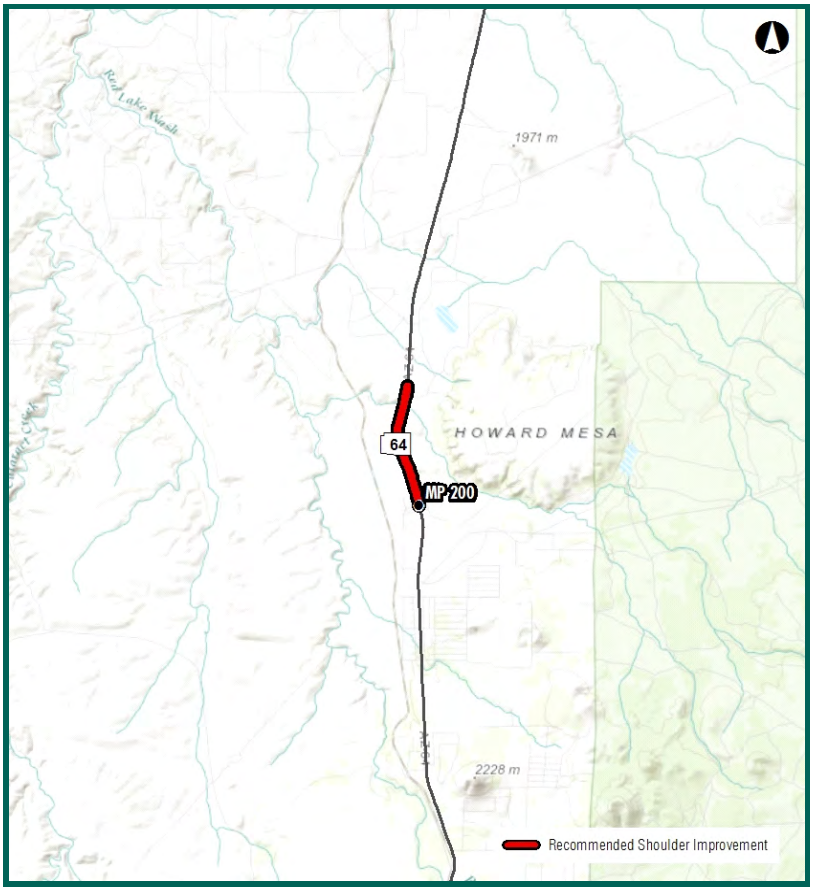
Cost Estimate: $1,980,000

Environmental Overview

Land Ownership: Private Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Active fault lines; Wetlands





U 160: MP 460 - MP 462 (Both Directions)

Statewide Rank: 95

Project Details

Route: U 160	**Direction:** Both Directions
BMP: 460.0	**Tier Level:** 1
EMP: 462.0	**District Rank:** 29
District: Holbrook	**Left Shoulder:** 2 to 6 FT
County: Apache	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 6.25	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 33
Existing AADT: 3067	**Future AADT:** 4000
Existing LOS: D	**Future LOS:** E
Directional Split: 52 / 48	**Truck %:** 11

Safety Analysis

Total Number of Crashes:	3
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	2
Non-Injury Crashes:	1
Equivalent Property Damage Value:	12
Crash Rate:	0.27

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

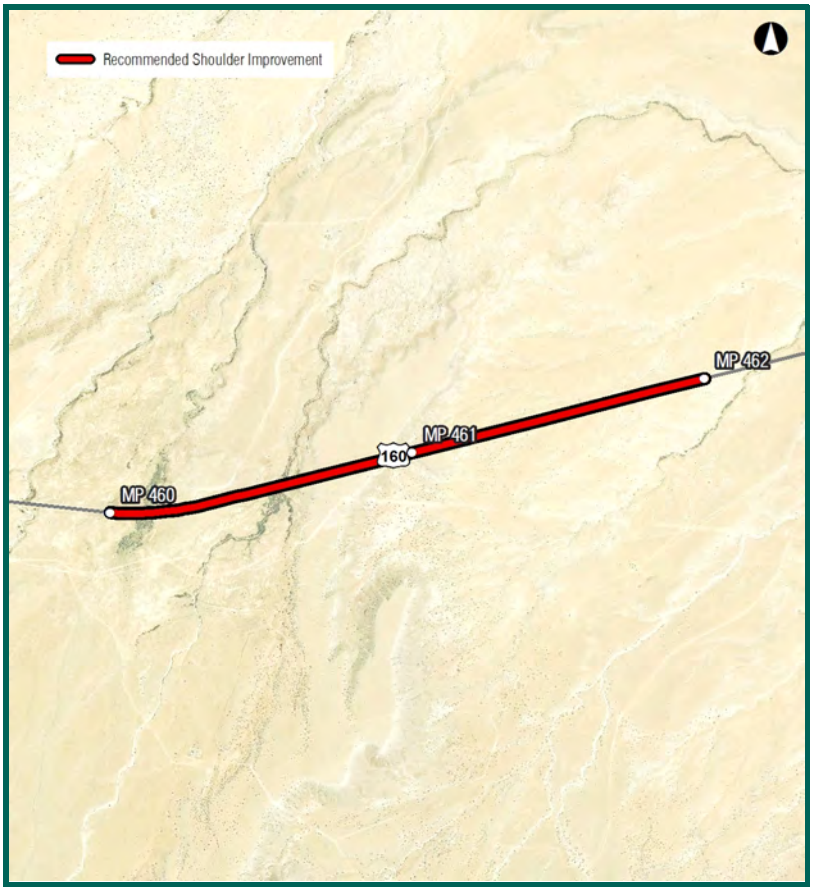
General Location Assessment: Paved shoulders in good condition; Ample room to widen roadway

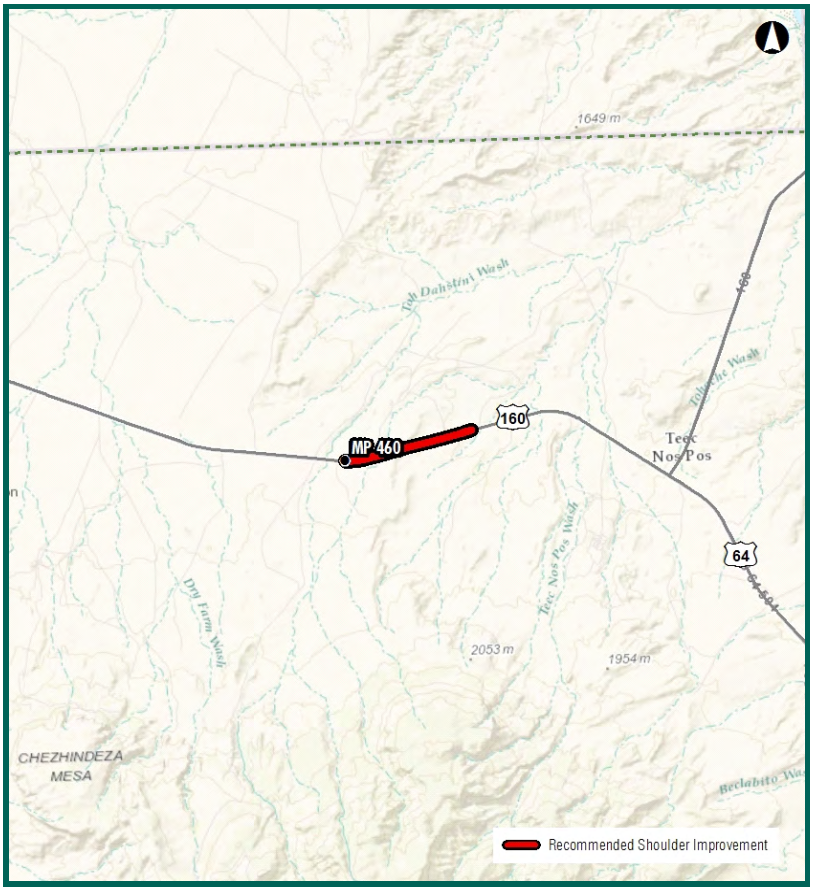
Cost Estimate: $1,980,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wetlands





S 064: MP 196 - MP 198 (Both Directions)

Statewide Rank: 96

Project Details

Route: S 064	**Direction:** Both Directions
BMP: 196.0	**Tier Level:** 1
EMP: 198.0	**District Rank:** 21
District: Flagstaff	**Left Shoulder:** 2 to 6 FT
County: Coconino	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: No	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 5.08	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 10
Existing AADT: 5171	**Future AADT:** 4100
Existing LOS: D	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 14

Safety Analysis

Total Number of Crashes:	15
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	2
Non-Injury Crashes:	13
Equivalent Property Damage Value:	21
Crash Rate:	0.79

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

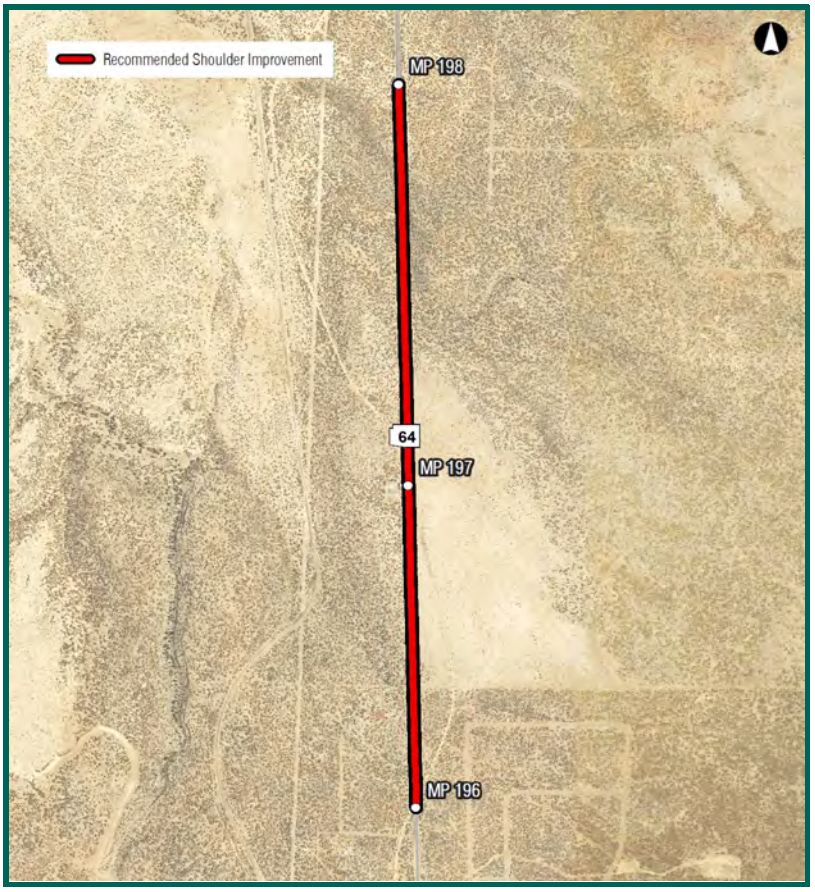
General Location Assessment: Ample room to widen roadway; Paved shoulders in good condition; Multiple intersecting roadways

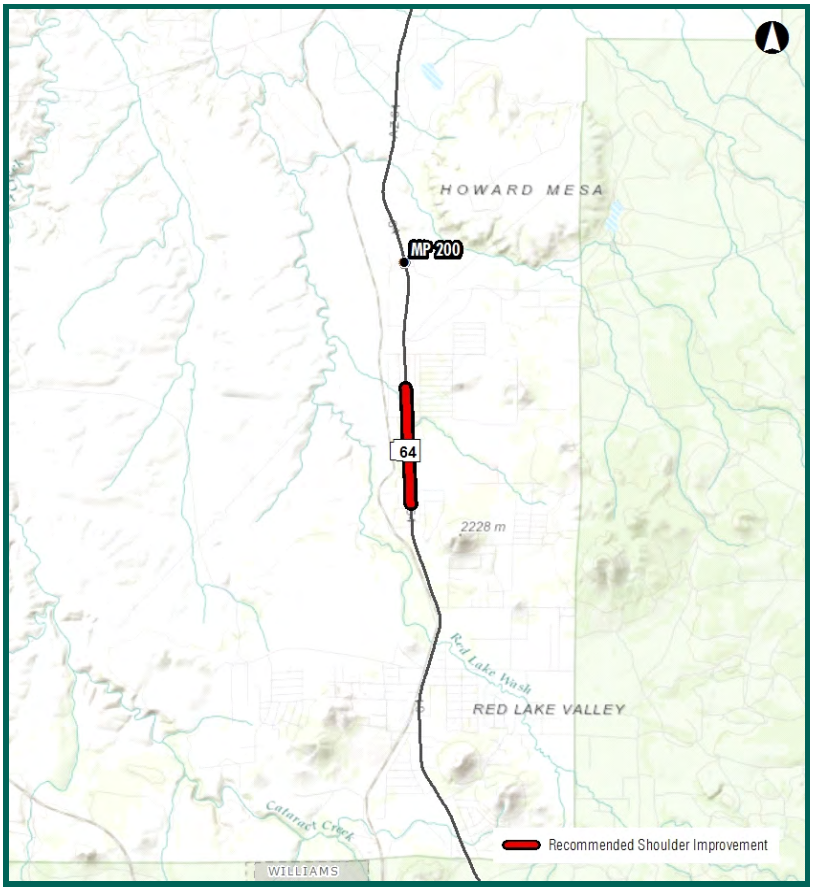
Cost Estimate: $1,980,000

Environmental Overview

Land Ownership: Private Land, State Trust Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Wetlands





U 160: MP 450 - MP 452 (Both Directions)

Statewide Rank: 97

Project Details

Route: U 160	**Direction:** Both Directions
BMP: 450.0	**Tier Level:** 1
EMP: 452.0	**District Rank:** 30
District: Holbrook	**Left Shoulder:** 2 to 6 FT
County: Apache	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 1.66	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 33
Existing AADT: 3067	**Future AADT:** 4000
Existing LOS: D	**Future LOS:** D
Directional Split: 52 / 48	**Truck %:** 11

Safety Analysis

Total Number of Crashes:	3
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	2
Non-Injury Crashes:	1
Equivalent Property Damage Value:	7
Crash Rate:	0.27

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

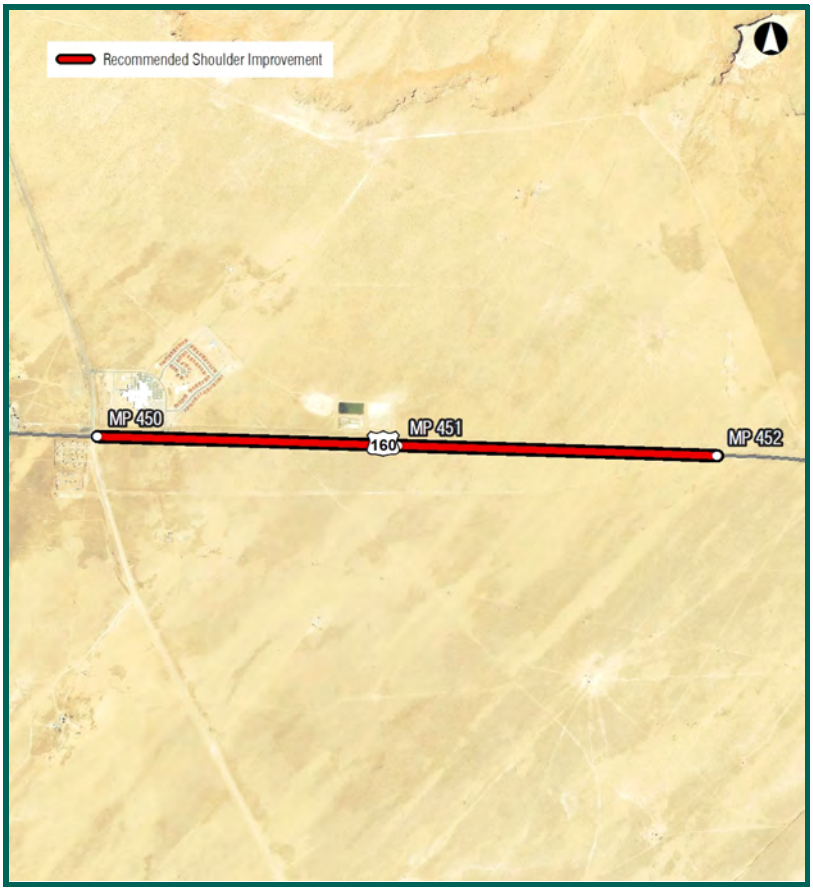
General Location Assessment: Paved shoulders in good condition; Ample room to widen roadway

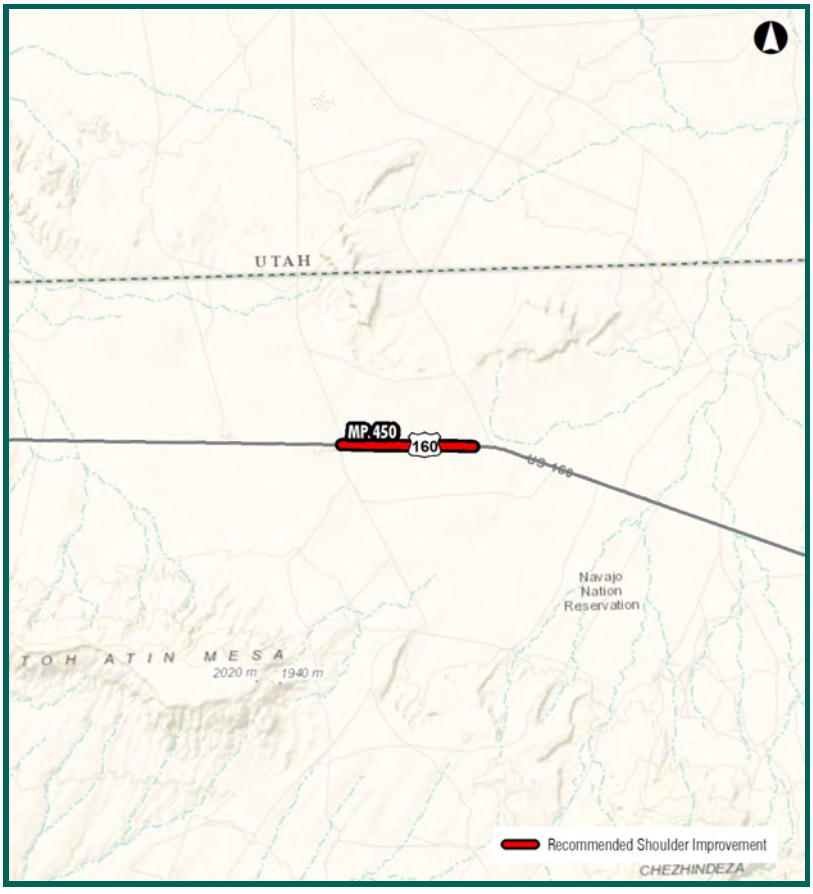
Cost Estimate: $1,800,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wetlands





U 160: MP 442 - MP 444 (Both Directions)

Statewide Rank: 98

Project Details

Route: U 160	**Direction:** Both Directions
BMP: 442.0	**Tier Level:** 1
EMP: 444.0	**District Rank:** 31
District: Holbrook	**Left Shoulder:** 2 to 6 FT
County: Apache	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 1.64	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 33
Existing AADT: 3067	**Future AADT:** 4000
Existing LOS: D	**Future LOS:** D
Directional Split: 52 / 48	**Truck %:** 11

Safety Analysis

Total Number of Crashes:	3
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	1
Non-Injury Crashes:	2
Equivalent Property Damage Value:	9
Crash Rate:	0.27

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

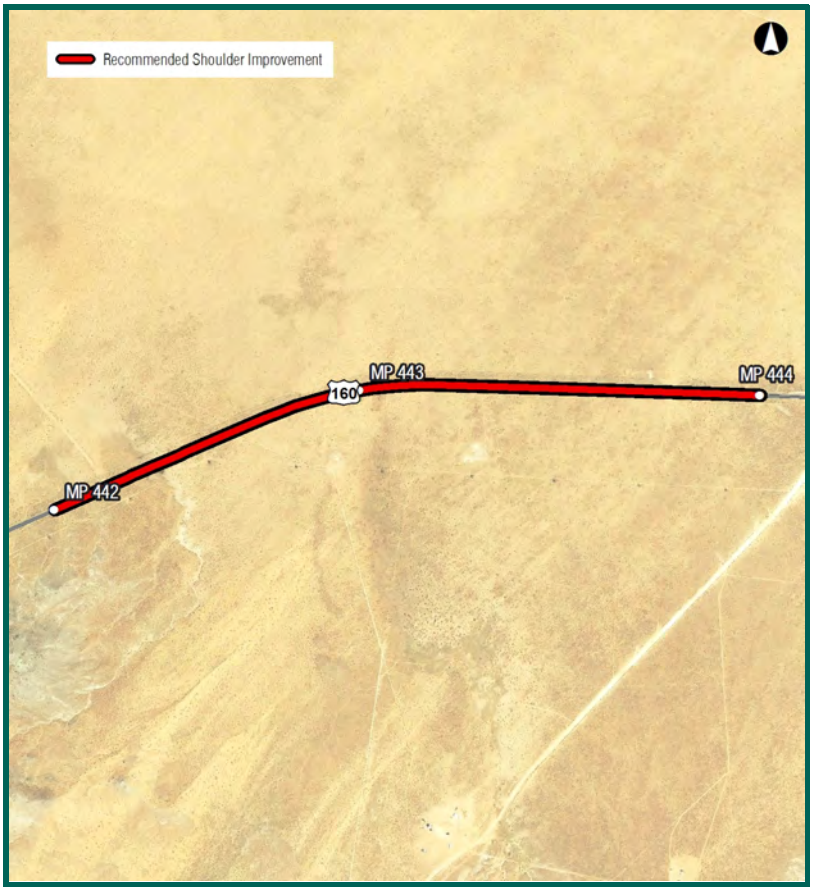
General Location Assessment: Paved shoulders in good condition; Ample room to widen roadway

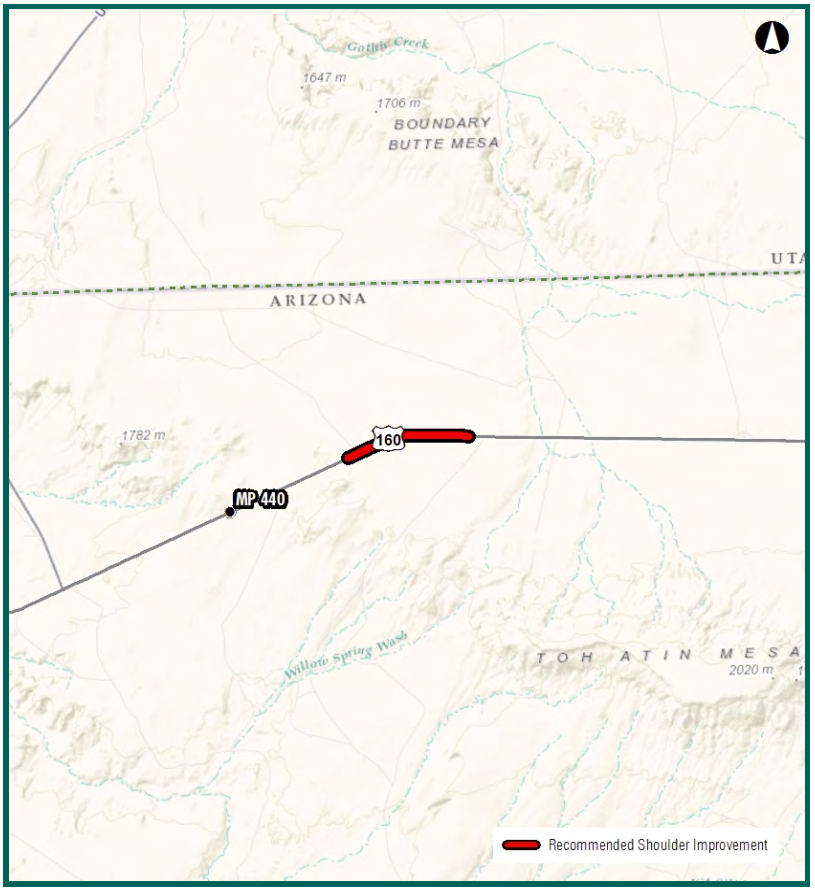
Cost Estimate: $1,800,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints





U 160: MP 366 - MP 368 (Both Directions)

Statewide Rank: 99

Project Details

Route: U 160	**Direction:** Both Directions
BMP: 366.0	**Tier Level:** 1
EMP: 368.0	**District Rank:** 32
District: Holbrook	**Left Shoulder:** 2 to 6 FT
County: Navajo	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other	
Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: No	**Guardrail:** Yes
Terrain/Max Slope: 1.8	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 10
Existing AADT: 5085	**Future AADT:** 5500
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 11

Safety Analysis

Total Number of Crashes:	4
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	1
Non-Injury Crashes:	3
Equivalent Property Damage Value:	5
Crash Rate:	0.22

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

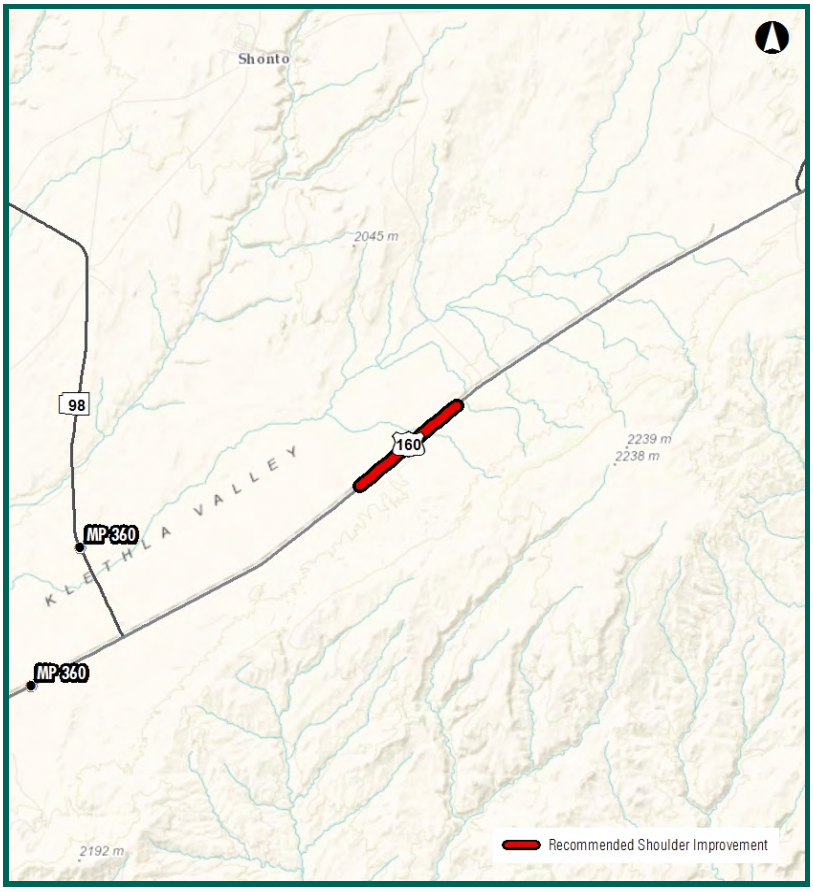
General Location Assessment: Paved shoulders in deteriorating condition; Ample room to widen roadway

Cost Estimate: $1,800,000

Environmental Overview

Land Ownership: Navajo-Hopi Joint Use Area

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints



U 160: MP 368 - MP 370 (Both Directions)

Statewide Rank: 100

Project Details

Route: U 160	**Direction:** Both Directions
BMP: 368.0	**Tier Level:** 1
EMP: 370.0	**District Rank:** 33
District: Holbrook	**Left Shoulder:** 2 to 6 FT
County: Navajo	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: No	**Guardrail:** Yes
Terrain/Max Slope: 2.01	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 10
Existing AADT: 5085	**Future AADT:** 5500
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 11

Safety Analysis

Total Number of Crashes:	4
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	1
Non-Injury Crashes:	3
Equivalent Property Damage Value:	5
Crash Rate:	0.22

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

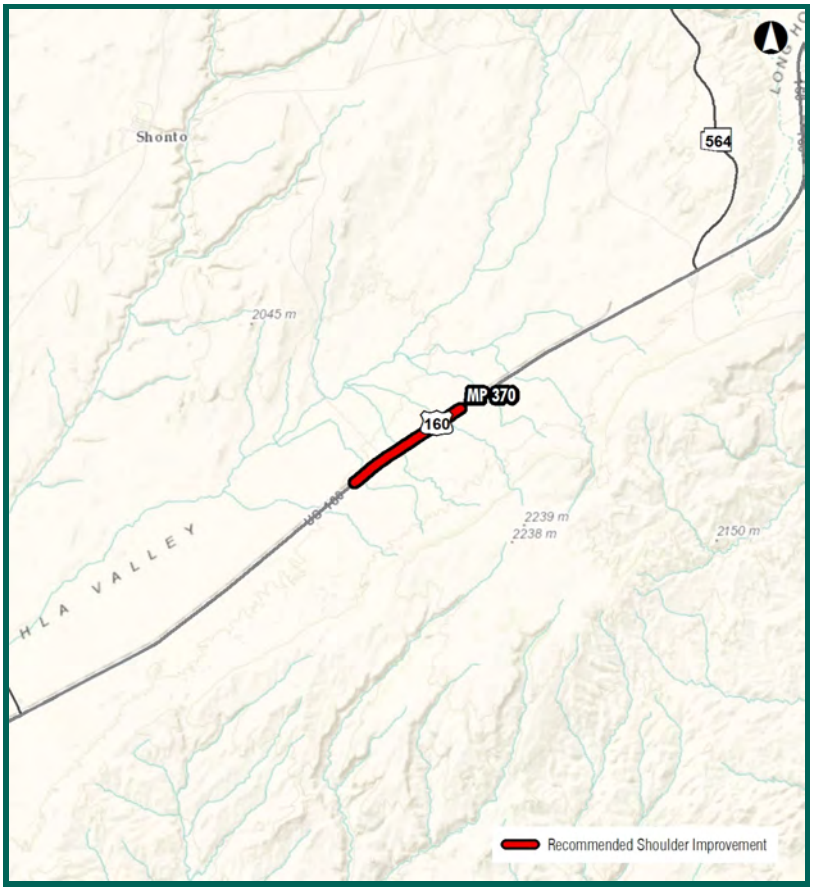
General Location Assessment: Paved shoulders in deteriorating condition; Ample room to widen roadway; Multiple intersecting roadways

Cost Estimate: $1,800,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints



S 064: MP 202 - MP 204 (Both Directions)

Statewide Rank: 101

Project Details

Route: S 064	**Direction:** Both Directions
BMP: 202.0	**Tier Level:** 1
EMP: 204.0	**District Rank:** 22
District: Flagstaff	**Left Shoulder:** 2 to 6 FT
County: Coconino	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: No	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 3.63	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 10
Existing AADT: 5171	**Future AADT:** 4100
Existing LOS: D	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 14

Safety Analysis

Total Number of Crashes:	14
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	2
Non-Injury Crashes:	12
Equivalent Property Damage Value:	18
Crash Rate:	0.74

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

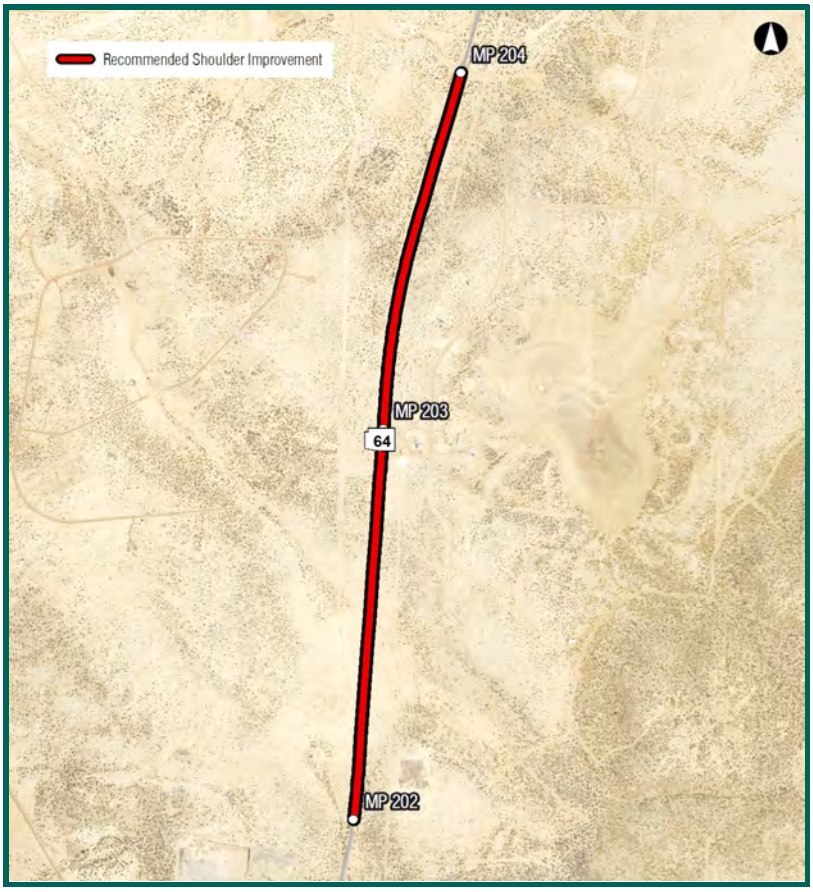
General Location Assessment: Ample room to widen roadway; Paved shoulders in good condition; Multiple intersecting roadways

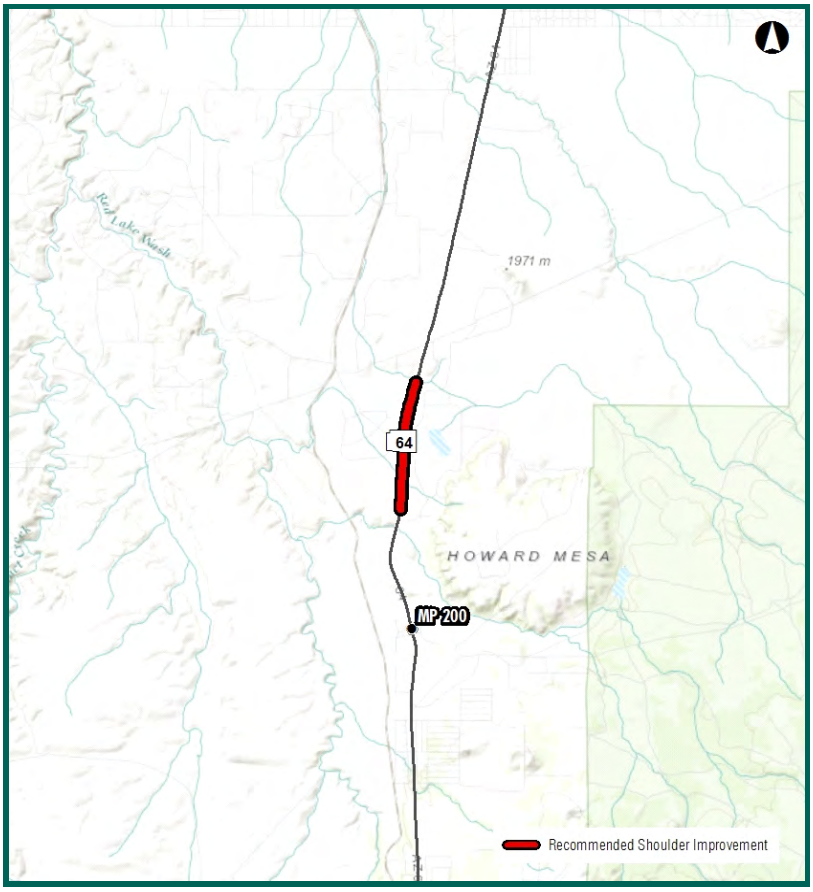
Cost Estimate: $1,980,000

Environmental Overview

Land Ownership: Private Land, State Trust Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone





S 064: MP 192 - MP 194 (Both Directions)

Statewide Rank: 102

Project Details

Route: S 064	**Direction:** Both Directions
BMP: 192.0	**Tier Level:** 1
EMP: 194.0	**District Rank:** 23
District: Flagstaff	**Left Shoulder:** 2 to 6 FT
County: Coconino	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: No	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 4.93	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 10
Existing AADT: 5171	**Future AADT:** 4100
Existing LOS: D	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 14

Safety Analysis

Total Number of Crashes:	13
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	3
Non-Injury Crashes:	10
Equivalent Property Damage Value:	22
Crash Rate:	0.69

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

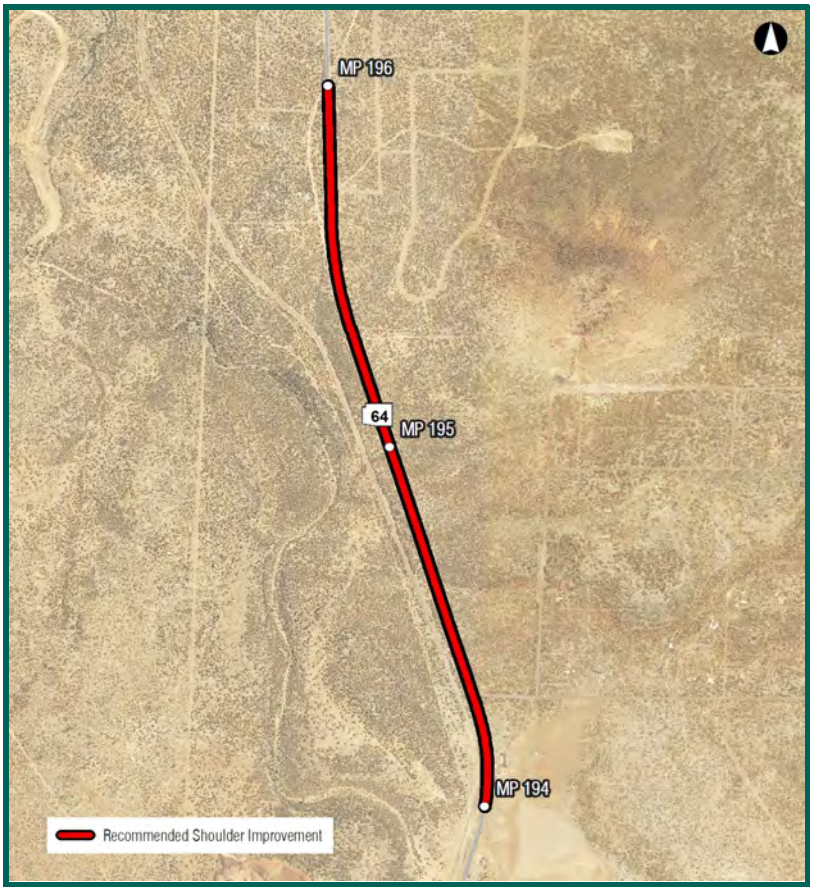
General Location Assessment: Ample room to widen roadway; Paved shoulders in good condition; Multiple intersecting roadways

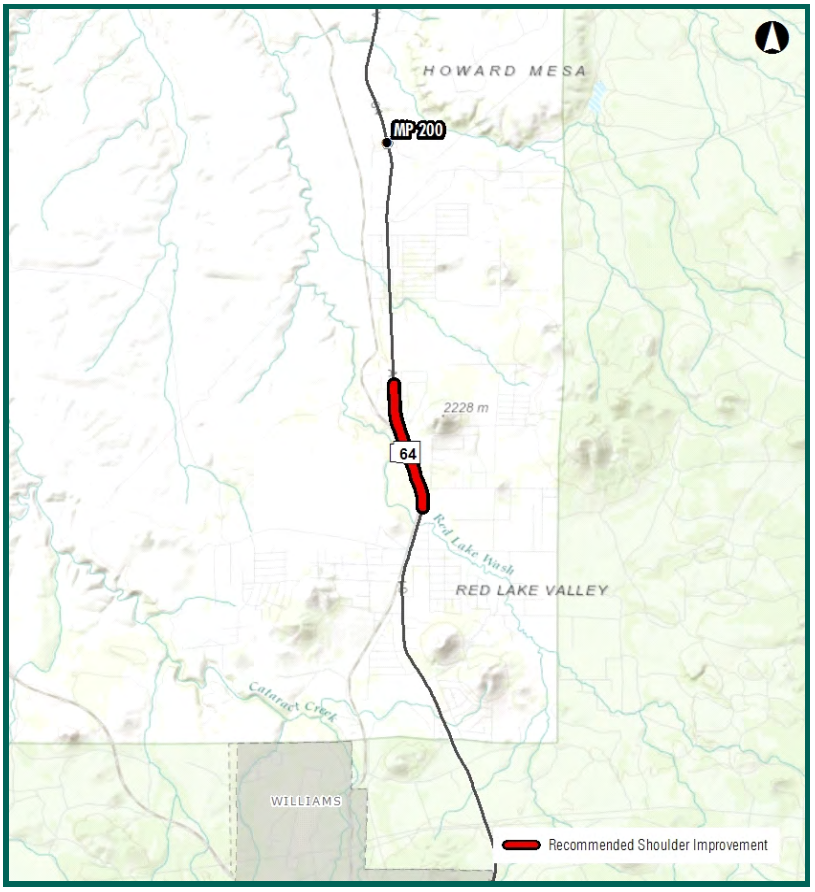
Cost Estimate: $1,980,000

Environmental Overview

Land Ownership: Private Land, State Trust Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Wetlands





U 160: MP 438 - MP 440 (Both Directions)

Statewide Rank: 103

Project Details

Route: U 160	**Direction:** Both Directions
BMP: 438.0	**Tier Level:** 1
EMP: 440.0	**District Rank:** 34
District: Holbrook	**Left Shoulder:** 2 to 6 FT
County: Apache	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 3.81	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 33
Existing AADT: 3067	**Future AADT:** 4000
Existing LOS: D	**Future LOS:** D
Directional Split: 52 / 48	**Truck %:** 11

Safety Analysis

Total Number of Crashes:	3
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	0
Non-Injury Crashes:	2
Equivalent Property Damage Value:	14
Crash Rate:	0.27

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

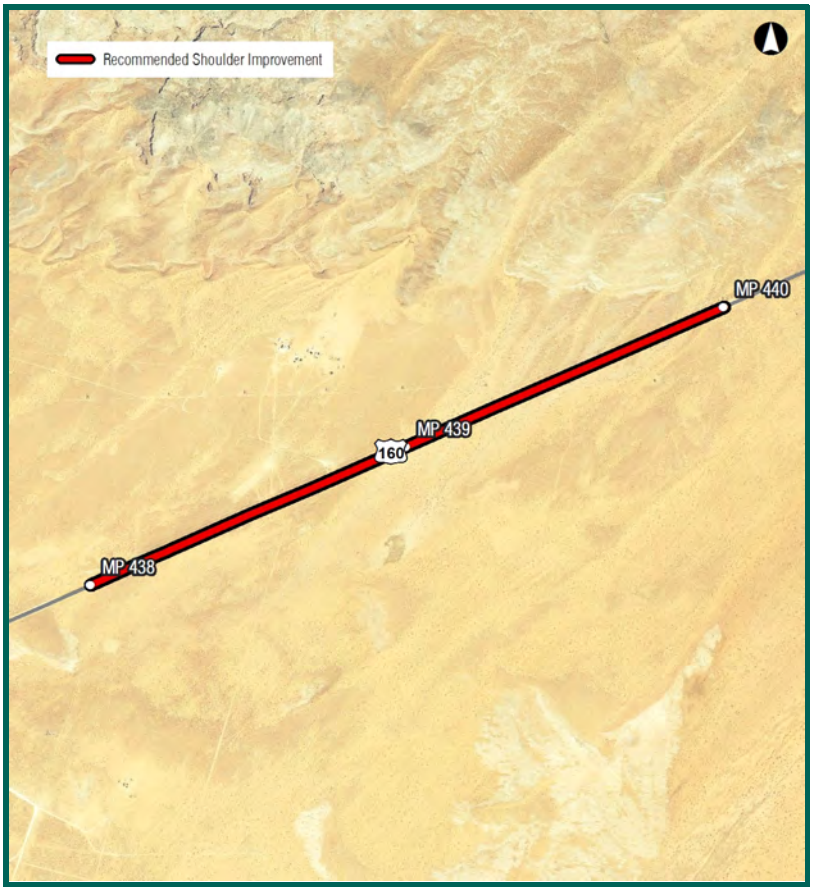
General Location Assessment: Paved shoulders in good condition; Ample room to widen roadway

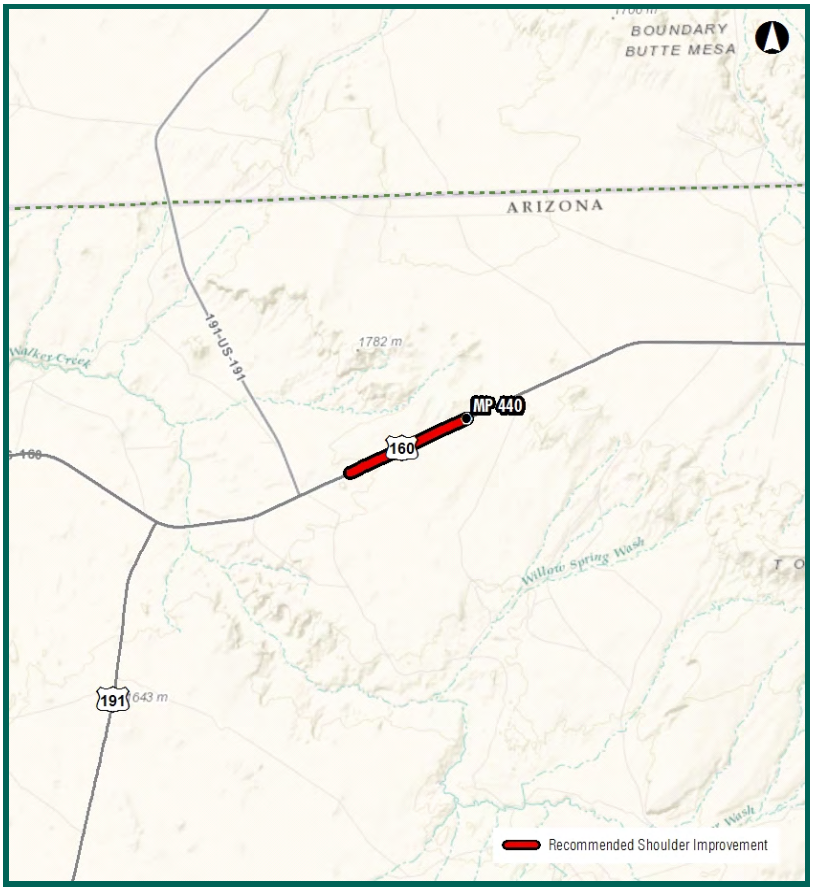
Cost Estimate: $1,800,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints





S 169: MP 4 - MP 6 (Both Directions)

Statewide Rank: 104

Project Details

Route: S 169	**Direction:** Both Directions
BMP: 4.0	**Tier Level:** 1
EMP: 6.0	**District Rank:** 9
District: Prescott	**Left Shoulder:** 2 to 6 FT
County: Yavapai	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial

Wideload Corridor: No	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 4.39	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 11
Existing AADT: 4415	**Future AADT:** 7100
Existing LOS: C	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 9

Safety Analysis

Total Number of Crashes:	30
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	9
Non-Injury Crashes:	20
Equivalent Property Damage Value:	57
Crash Rate:	1.86

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

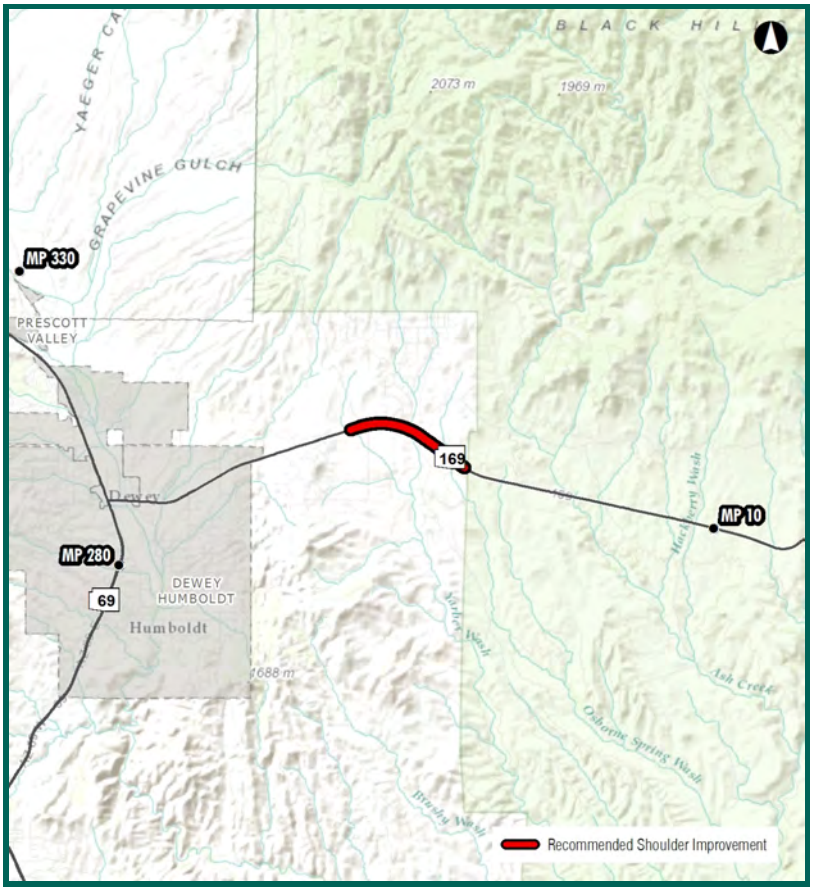
General Location Assessment: Paved shoulders in good condition; Ample room to widen roadway; Unpaved clear zone adjacent to shoulder; Multiple intersecting roadways

Cost Estimate: $2,142,992

Environmental Overview

Land Ownership: Private Land, State Trust Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: 100-Yr Floodplain



S 264: MP 382 - MP 384 (Both Directions)

Statewide Rank: 105

Project Details

Route: S 264	**Direction:** Both Directions
BMP: 382.0	**Tier Level:** 1
EMP: 384.0	**District Rank:** 35
District: Holbrook	**Left Shoulder:** Less than 2 FT
County: Navajo	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Rural Minor Collector

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 7.17	**Terrain:** Mountainous
Speed Limit(mph): 65	**K-Factor:** 11
Existing AADT: 2964	**Future AADT:** 3100
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 16

Safety Analysis

Total Number of Crashes:	3
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	1
Non-Injury Crashes:	2
Equivalent Property Damage Value:	4
Crash Rate:	0.28

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

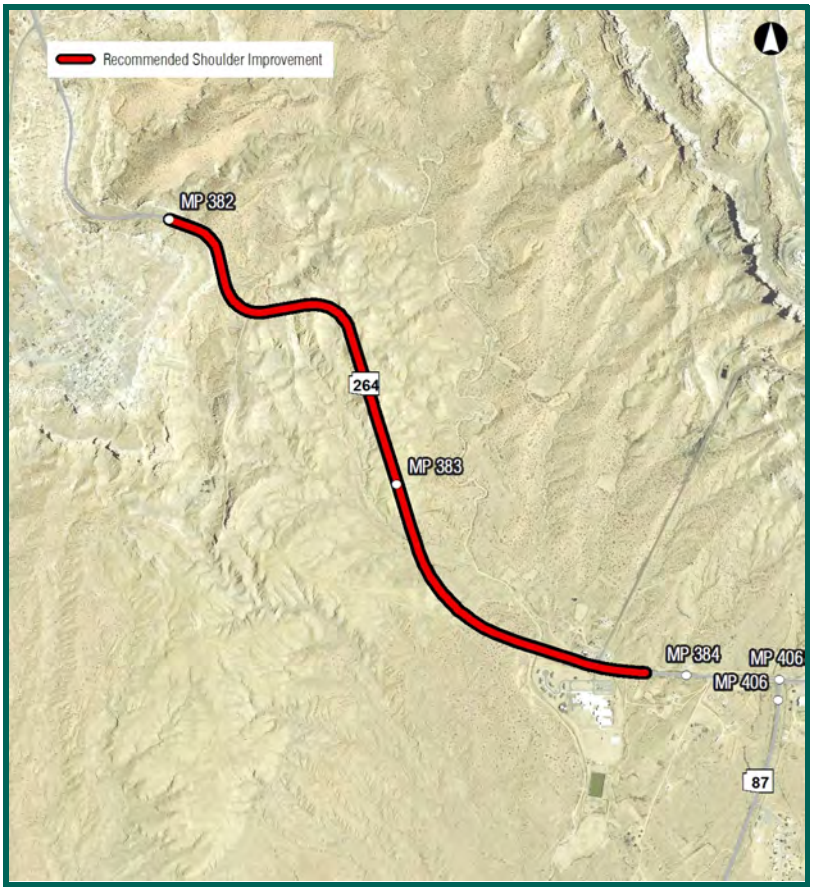
General Location Assessment: Roadside cliffs may limit construction (MP 382 - 383); Narrow shoulder; Ample room to widen roadway (MP 383 - 384)

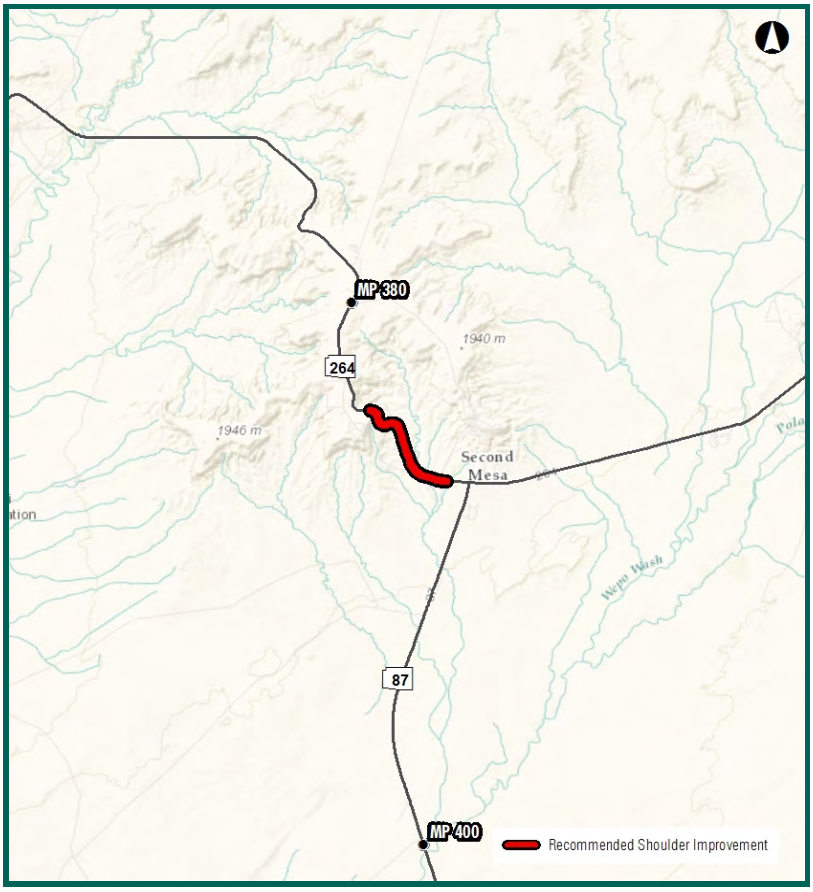
Cost Estimate: $3,780,000

Environmental Overview

Land Ownership: Hopi Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints





U 089: MP 471.6 - MP 472.3 (Both Directions)

Statewide Rank: 106

Project Details

Route: U 089	**Direction:** Both Directions
BMP: 471.6	**Tier Level:** 1
EMP: 472.3	**District Rank:** 24
District: Flagstaff	**Left Shoulder:** 2 to 6 FT
County: Coconino	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: No	**Guardrail:** No
Terrain/Max Slope: 1.48	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 9
Existing AADT: 6762	**Future AADT:** 8200
Existing LOS: C	**Future LOS:** D
Directional Split: 49 / 51	**Truck %:** 13

Safety Analysis

Total Number of Crashes:	1
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	1
Non-Injury Crashes:	0
Equivalent Property Damage Value:	4
Crash Rate:	0.05

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

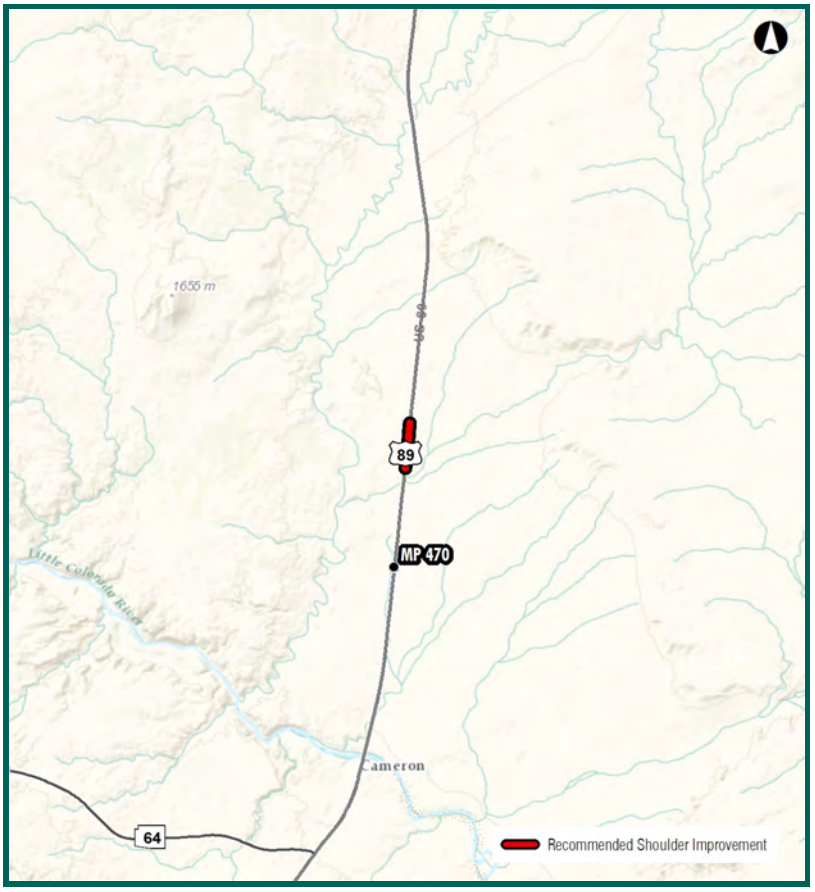
General Location Assessment: Unpaved shoulders; Ample room to widen roadway

Cost Estimate: $657,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints



S 260: MP 334 - MP 336 (Both Directions)

Statewide Rank: 107

Project Details

Route: S 260	**Direction:** Both Directions
BMP: 334.0	**Tier Level:** 1
EMP: 336.0	**District Rank:** 17
District: Globe	**Left Shoulder:** 2 to 6 FT
County: Navajo	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Urban Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: No	**Guardrail:** No
Terrain/Max Slope: 3.28	**Terrain:** Rolling
Speed Limit(mph): 55	**K-Factor:** 12
Existing AADT: 9762	**Future AADT:** 14500
Existing LOS: D	**Future LOS:** E
Directional Split: 51 / 49	**Truck %:** 12

Safety Analysis

Total Number of Crashes:	26
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	12
Non-Injury Crashes:	13
Equivalent Property Damage Value:	81
Crash Rate:	0.73

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

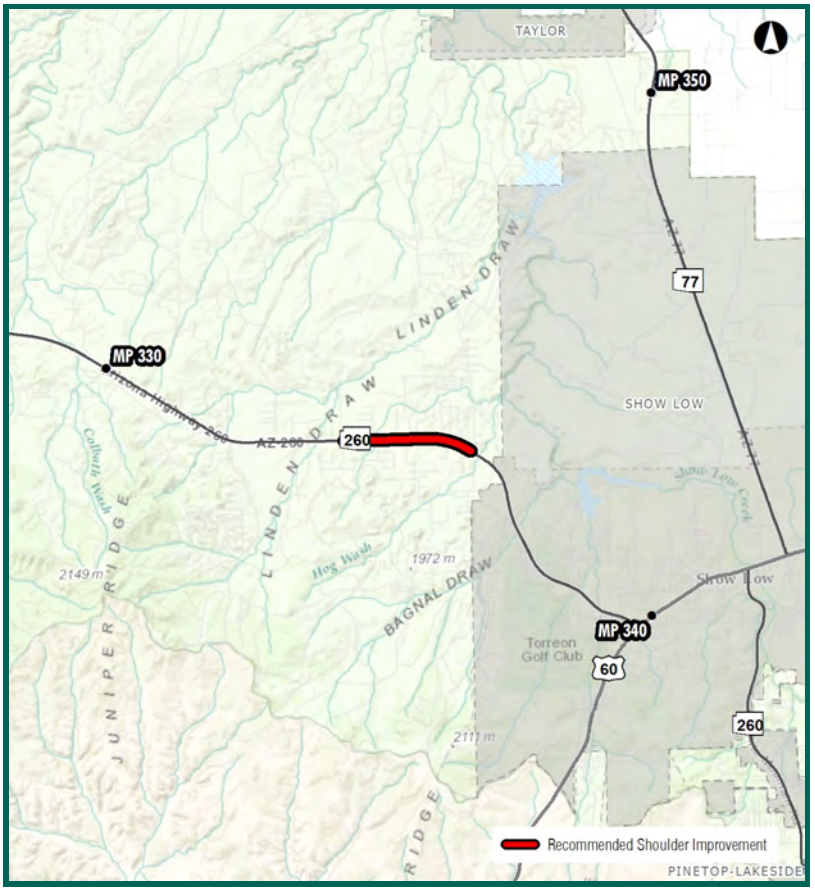
General Location Assessment: Paved shoulders in good condition; Ample room to widen roadway; Multiple intersecting roadways

Cost Estimate: $1,980,000

Environmental Overview

Land Ownership: Apache-Sitgreaves N.F, Private Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wetlands;100-Yr Floodplain; Leaking underground storage tank



S 095: MP 172 - MP 174 (Both Directions)

Statewide Rank: 108

Project Details

Route: S 095	**Direction:** Both Directions
BMP: 172.0	**Tier Level:** 1
EMP: 174.0	**District Rank:** 7
District: Kingman	**Left Shoulder:** 2 to 6 FT
County: Mohave	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 3.15	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 9
Existing AADT: 5621	**Future AADT:** 8800
Existing LOS: C	**Future LOS:** D
Directional Split: 59 / 41	**Truck %:** 23

Safety Analysis

Total Number of Crashes:	14
Number of Fatal Crashes:	3
Injury & Possible Injury Crashes:	3
Non-Injury Crashes:	8
Equivalent Property Damage Value:	59
Crash Rate:	0.68

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

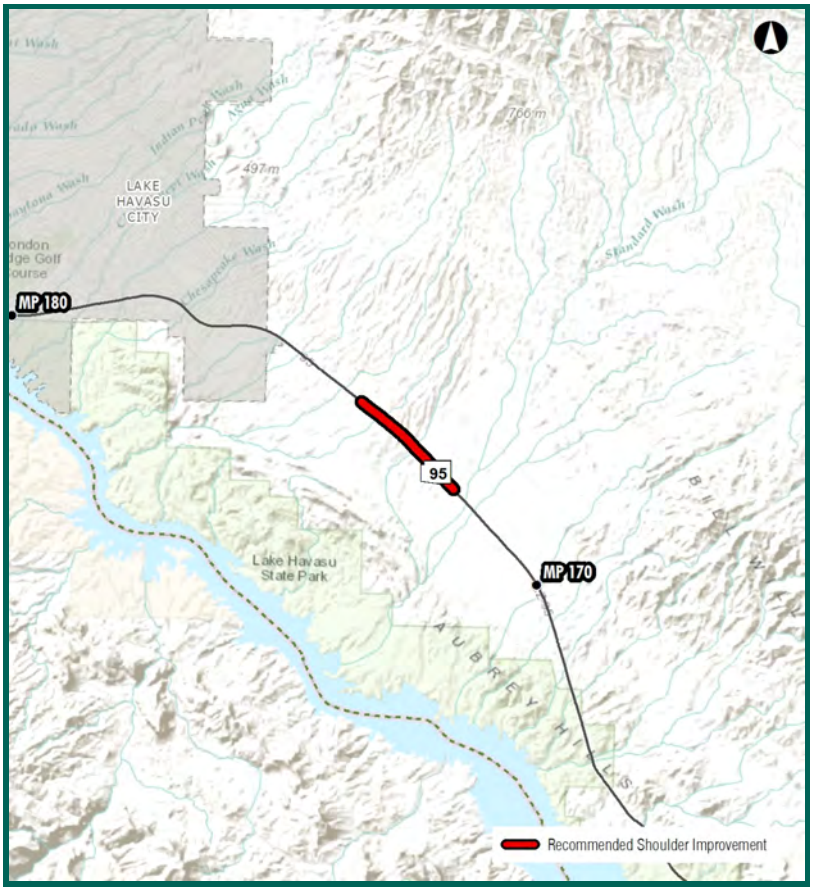
General Location Assessment: Paved shoulders in deteriorating condtion; Ample room to widen roadway

Cost Estimate: $2,298,110

Environmental Overview

Land Ownership: Bureau of Land Mgmt.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Lake Havasu SRMA; Suitable Desert Tortoise Habitat; Wildlife Linkage Zone;100-Yr Floodplain



U 191: MP 444 - MP 446.5 (Both Directions)

Statewide Rank: 109

Project Details

Route: U 191	**Direction:** Both Directions
BMP: 444.0	**Tier Level:** 1
EMP: 446.5	**District Rank:** 36
District: Holbrook	**Left Shoulder:** Less than 2 FT
County: Apache	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Rural Major Collector

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 0.63	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 9
Existing AADT: 4427	**Future AADT:** 5000
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 9

Safety Analysis

Total Number of Crashes:	4
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	2
Non-Injury Crashes:	2
Equivalent Property Damage Value:	11
Crash Rate:	0.2

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

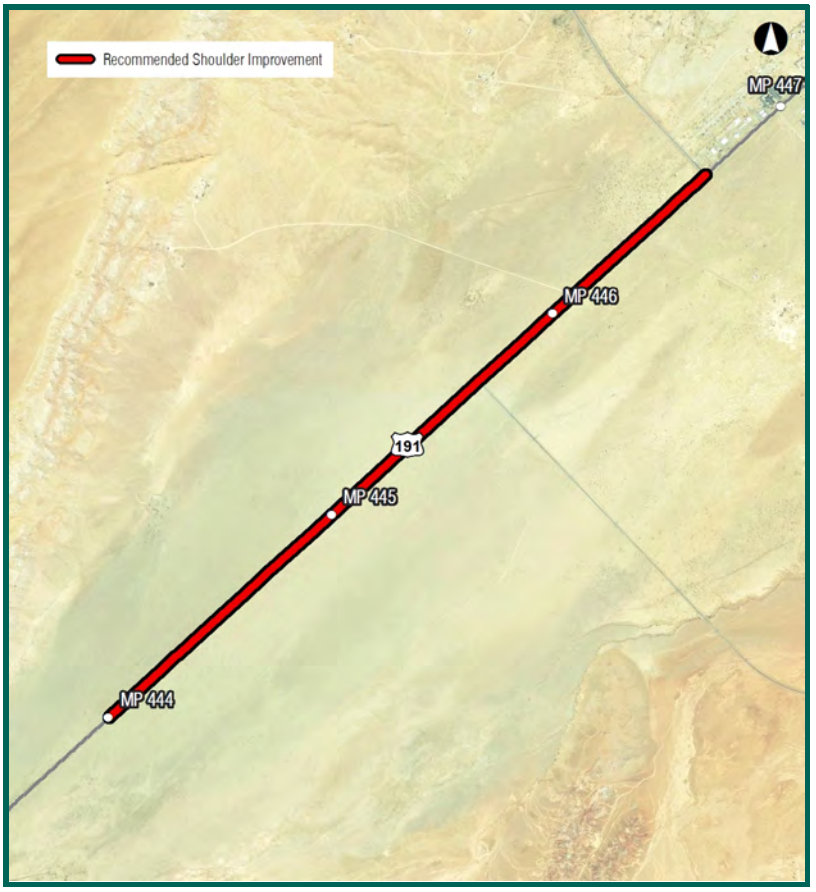
General Location Assessment: Unpaved shoulder; Ample room to widen roadway

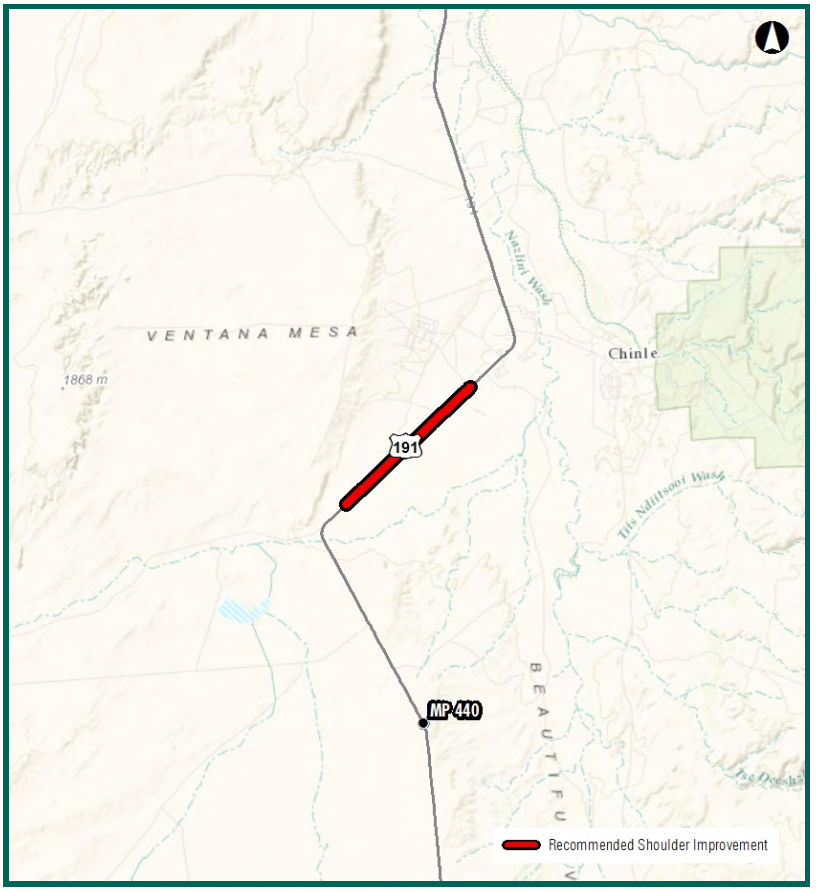
Cost Estimate: $3,937,500

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone





U 160: MP 364 - MP 366 (Both Directions)

Statewide Rank: 110

Project Details

Route: U 160	**Direction:** Both Directions
BMP: 364.0	**Tier Level:** 1
EMP: 366.0	**District Rank:** 37
District: Holbrook	**Left Shoulder:** 2 to 6 FT
County: Navajo	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: No	**Guardrail:** Yes
Terrain/Max Slope: 1.73	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 10
Existing AADT: 5085	**Future AADT:** 5500
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 11

Safety Analysis

Total Number of Crashes:	5
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	3
Non-Injury Crashes:	2
Equivalent Property Damage Value:	8
Crash Rate:	0.27

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

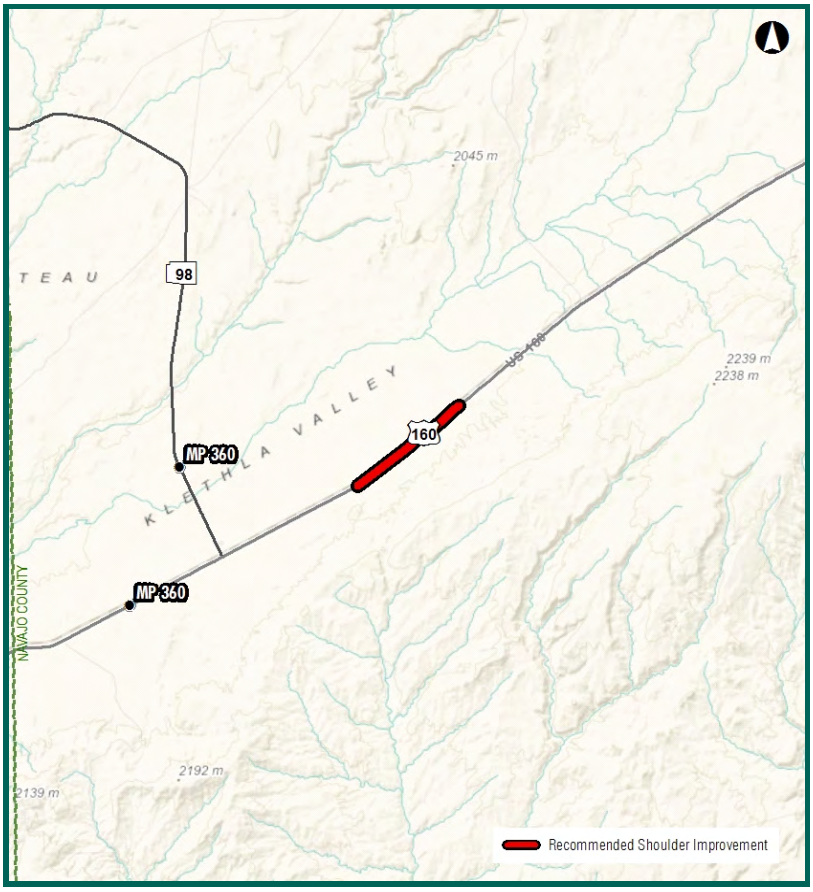
General Location Assessment: Shoulders in deteriorating conditions; Ample room to widen roadway; Multiple intersecting roadways

Cost Estimate: $1,800,000

Environmental Overview

Land Ownership: Navajo-Hopi Joint Use Area

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental constraints



U 060: MP 358 - MP 360 (Both Directions)

Statewide Rank: 111

Project Details

Route: U 060	**Direction:** Both Directions
BMP: 358.0	**Tier Level:** 1
EMP: 360.0	**District Rank:** 18
District: Globe	**Left Shoulder:** Less than 2 FT
County: Apache	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** No
Terrain/Max Slope: 1.74	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 10
Existing AADT: 2577	**Future AADT:** 3100
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 10

Safety Analysis

Total Number of Crashes:	28
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	8
Non-Injury Crashes:	19
Equivalent Property Damage Value:	63
Crash Rate:	2.98

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

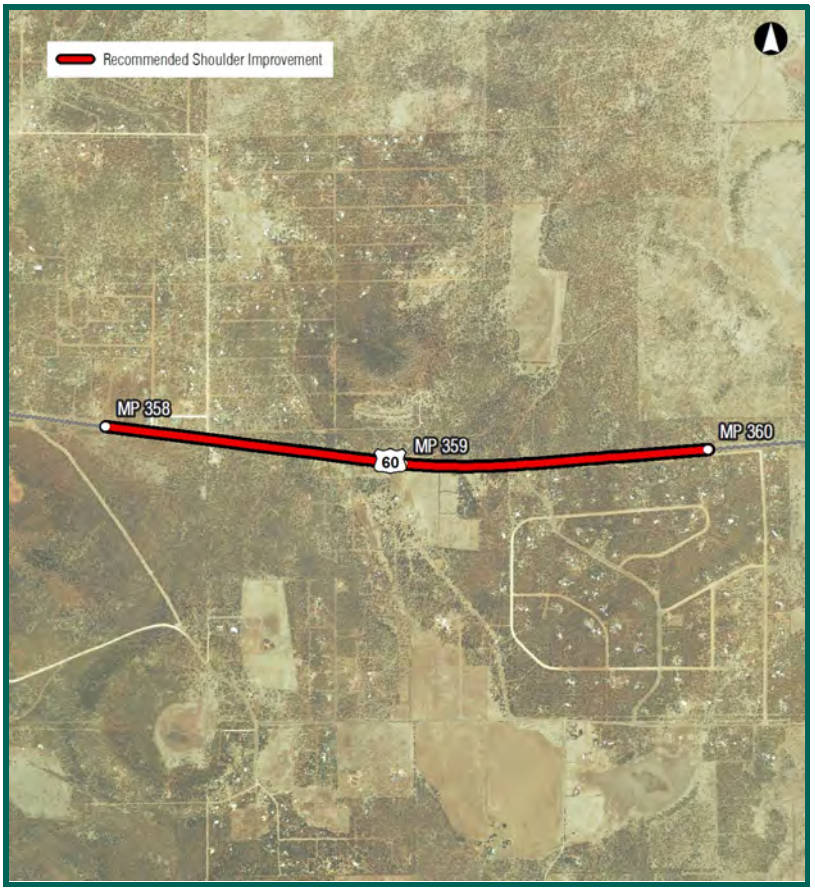
General Location Assessment: Unpaved shoulders; Ample room to widen roadway

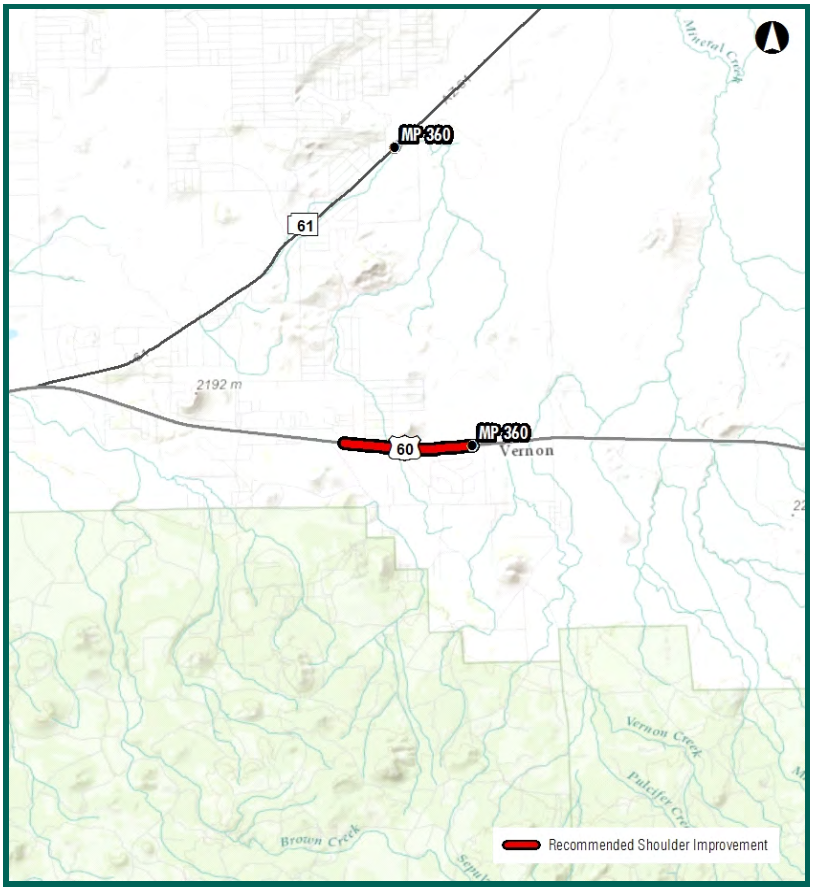
Cost Estimate: $3,522,480

Environmental Overview

Land Ownership: Private Land, State Trust Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Wetlands





U 160: MP 372 - MP 374 (Both Directions)

Statewide Rank: 112

Project Details

Route: U 160	**Direction:** Both Directions
BMP: 372.0	**Tier Level:** 1
EMP: 374.0	**District Rank:** 38
District: Holbrook	**Left Shoulder:** 2 to 6 FT
County: Navajo	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Minor Collector

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: No	**Guardrail:** Yes
Terrain/Max Slope: 1.79	**Terrain:** Level
Speed Limit(mph): 65	**K-Factor:** 10
Existing AADT: 5085	**Future AADT:** 5500
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 11

Safety Analysis

Total Number of Crashes:	9
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	4
Non-Injury Crashes:	4
Equivalent Property Damage Value:	31
Crash Rate:	0.48

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

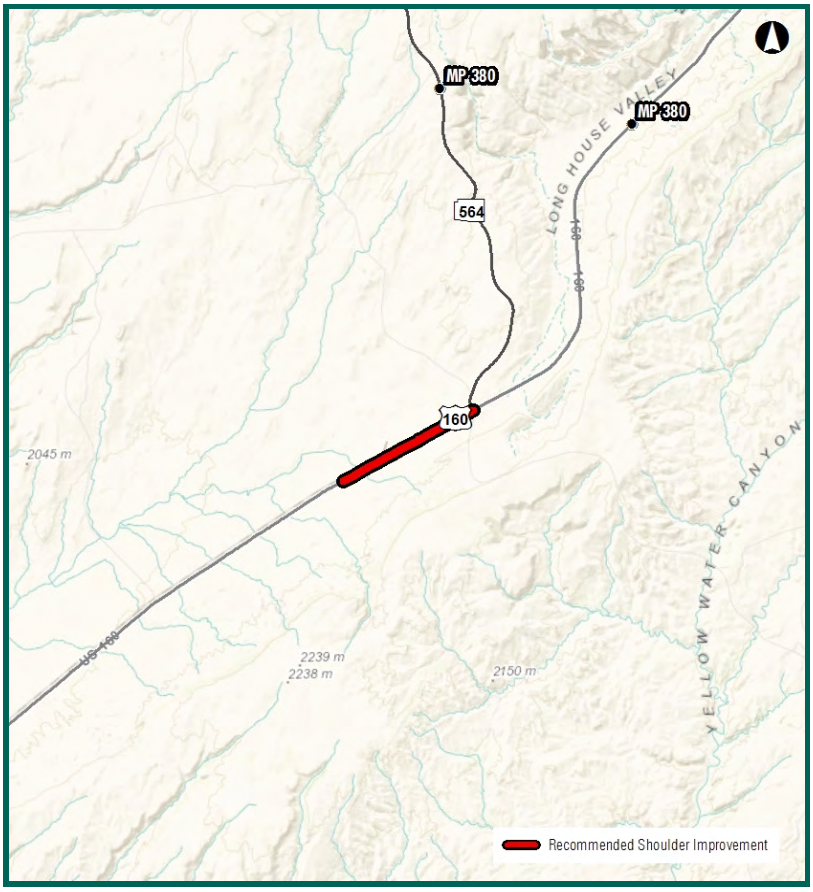
General Location Assessment: Shoulders in deteriorating conditions (MP 372.0 - 372.5); Ample room to widen roadway; Multiple intersecting roadways; Paved shoulders in good condition

Cost Estimate: $1,800,000

Environmental Overview

Land Ownership: Navajo Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone; Wetlands



S 264: MP 376 - MP 378 (Both Directions)

Statewide Rank: 113

Project Details

Route: S 264	**Direction:** Both Directions
BMP: 376.0	**Tier Level:** 1
EMP: 378.0	**District Rank:** 39
District: Holbrook	**Left Shoulder:** Less than 2 FT
County: Navajo	**Right Shoulder:** Less than 2 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 5.22	**Terrain:** Mountainous
Speed Limit(mph): 65	**K-Factor:** 11
Existing AADT: 2964	**Future AADT:** 3100
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 16

Safety Analysis

Total Number of Crashes:	0
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	0
Non-Injury Crashes:	0
Equivalent Property Damage Value:	0
Crash Rate:	0

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

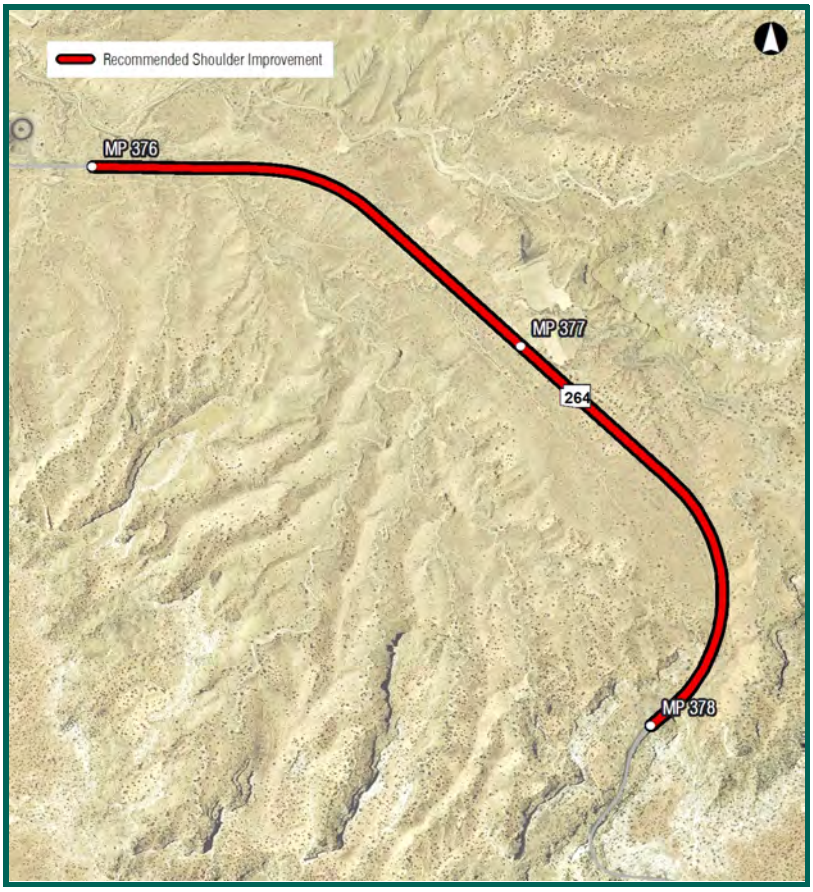
General Location Assessment: Narrow shoulder; Ample room to widen roadway;

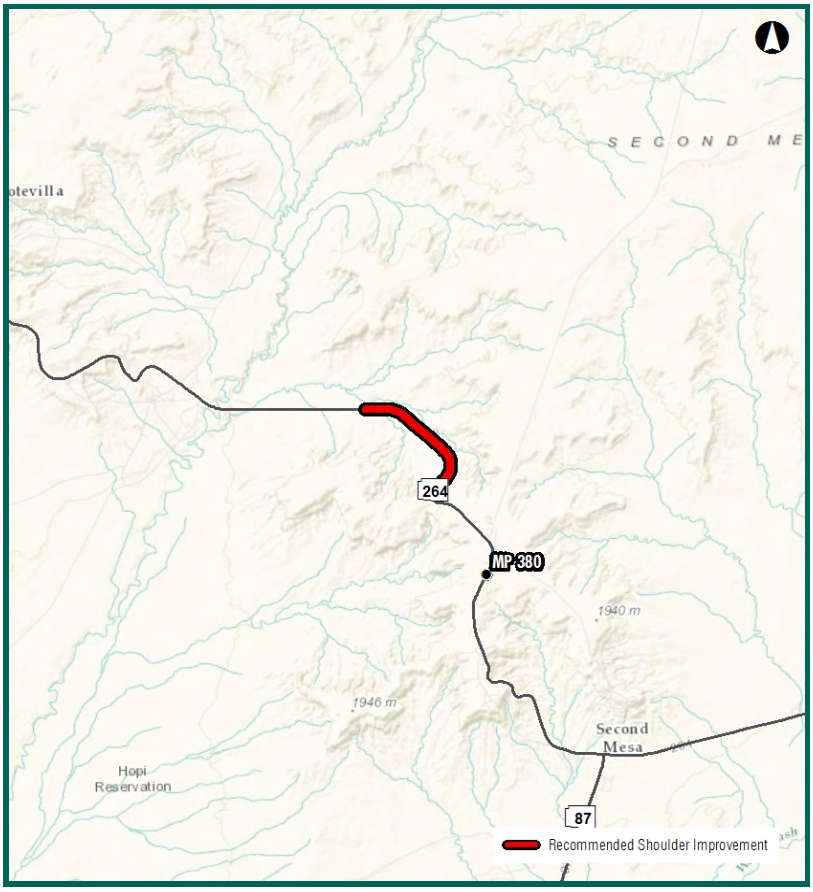
Cost Estimate: $3,780,000

Environmental Overview

Land Ownership: Hopi Indian Res.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wetlands





S 095: MP 134 - MP 136 (Both Directions)

Statewide Rank: 114

Project Details

Route: S 095	**Direction:** Both Directions
BMP: 134.0	**Tier Level:** 1
EMP: 136.0	**District Rank:** 12
District: Yuma	**Left Shoulder:** 2 to 6 FT
County: La Paz	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Principal Other

Wideload Corridor: Yes	**Pullouts:** No
Ped/Bike Corridor: No	**Guardrail:** No
Terrain/Max Slope: 2.22	**Terrain:** Rolling
Speed Limit(mph): 55	**K-Factor:** 15
Existing AADT: 5062	**Future AADT:** 6900
Existing LOS: C	**Future LOS:** D
Directional Split: 60 / 40	**Truck %:** 16

Safety Analysis

Total Number of Crashes:	7
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	3
Non-Injury Crashes:	4
Equivalent Property Damage Value:	19
Crash Rate:	0.38

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

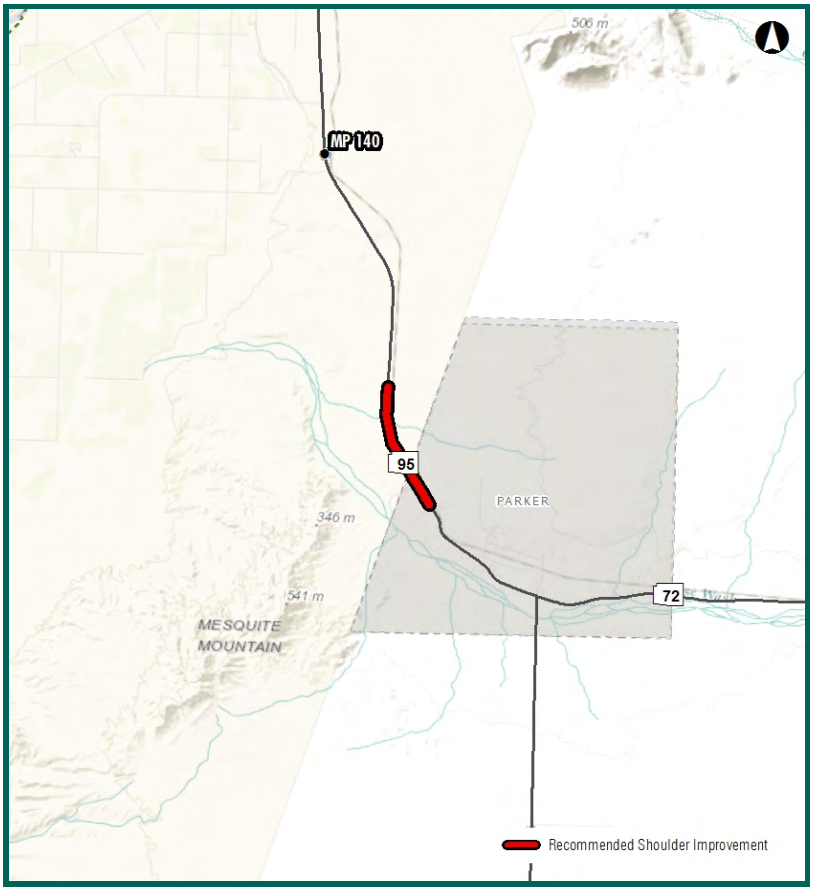
General Location Assessment: Ample room to widen roadway; Paved portion of shoulders in good condition

Cost Estimate: $1,980,000

Environmental Overview

Land Ownership: Prescott N.F

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wildlife Linkage Zone



S 169: MP 8 - MP 10 (Both Directions)

Statewide Rank: 115

Project Details

Route: S 169	**Direction:** Both Directions
BMP: 8.0	**Tier Level:** 1
EMP: 10.0	**District Rank:** 10
District: Prescott	**Left Shoulder:** 2 to 6 FT
County: Yavapai	**Right Shoulder:** 2 to 6 FT

Roadway Characteristics

Functional Class: Rural Minor Arterial

Wideload Corridor: No	**Pullouts:** No
Ped/Bike Corridor: Yes	**Guardrail:** Yes
Terrain/Max Slope: 2.38	**Terrain:** Rolling
Speed Limit(mph): 65	**K-Factor:** 8
Existing AADT: 5119	**Future AADT:** 7400
Existing LOS: C	**Future LOS:** C
Directional Split: 60 / 40	**Truck %:** 14

Safety Analysis

Total Number of Crashes:	12
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	2
Non-Injury Crashes:	10
Equivalent Property Damage Value:	16
Crash Rate:	0.64

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

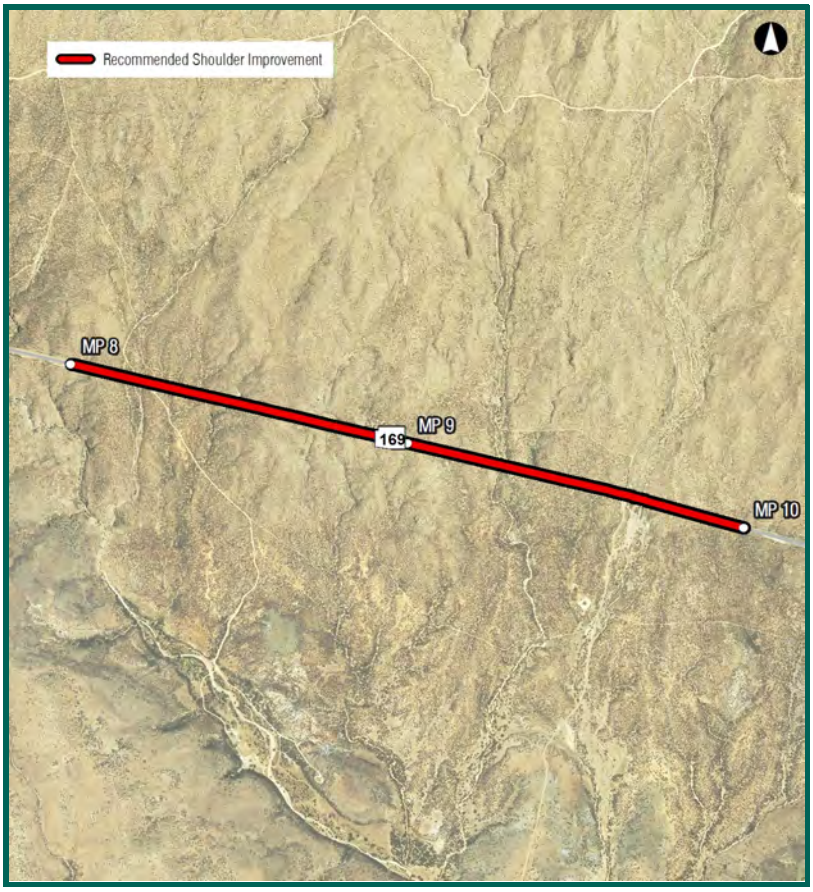
General Location Assessment: Paved shoulders in good condition; Ample room to widen roadway; Multiple intersecting roadways

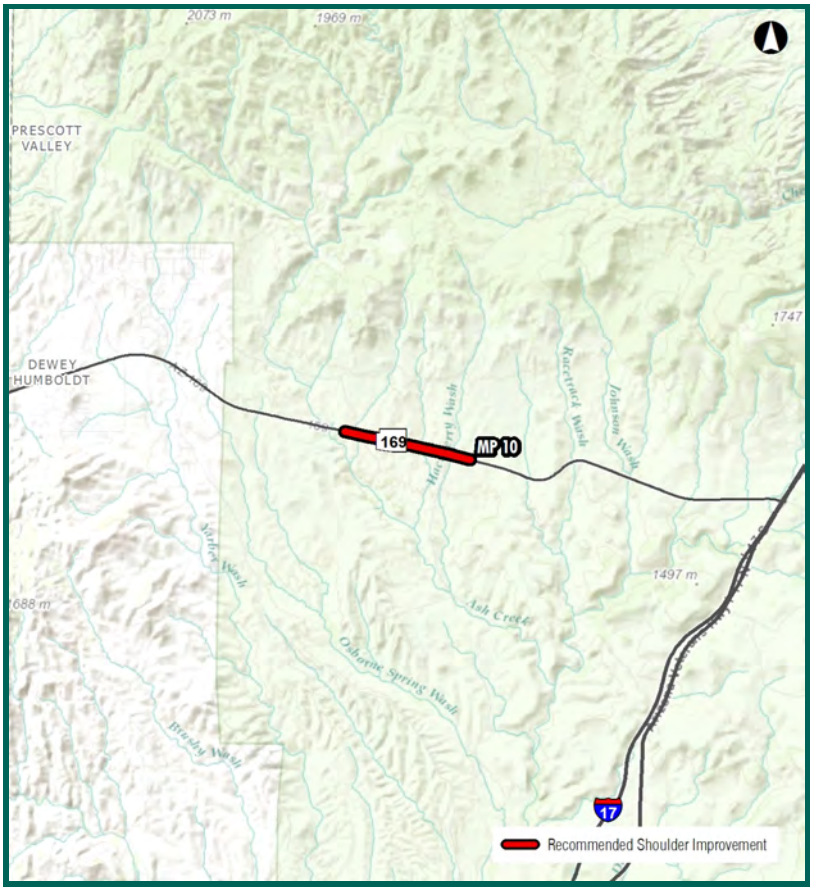
Cost Estimate: $2,173,702

Environmental Overview

Land Ownership: Prescott N.F

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Wetlands;100-Yr Floodplain





6. Summary Results – Shoulder Improvements on Multilane Highways

Table 6.1 presents the list of priority candidate locations for shoulder improvements on multilane highways. The candidate locations are ranked at the statewide level. Figure 6.1 illustrates the statewide location of the shoulder improvements followed by project summary sheets for the candidate locations.

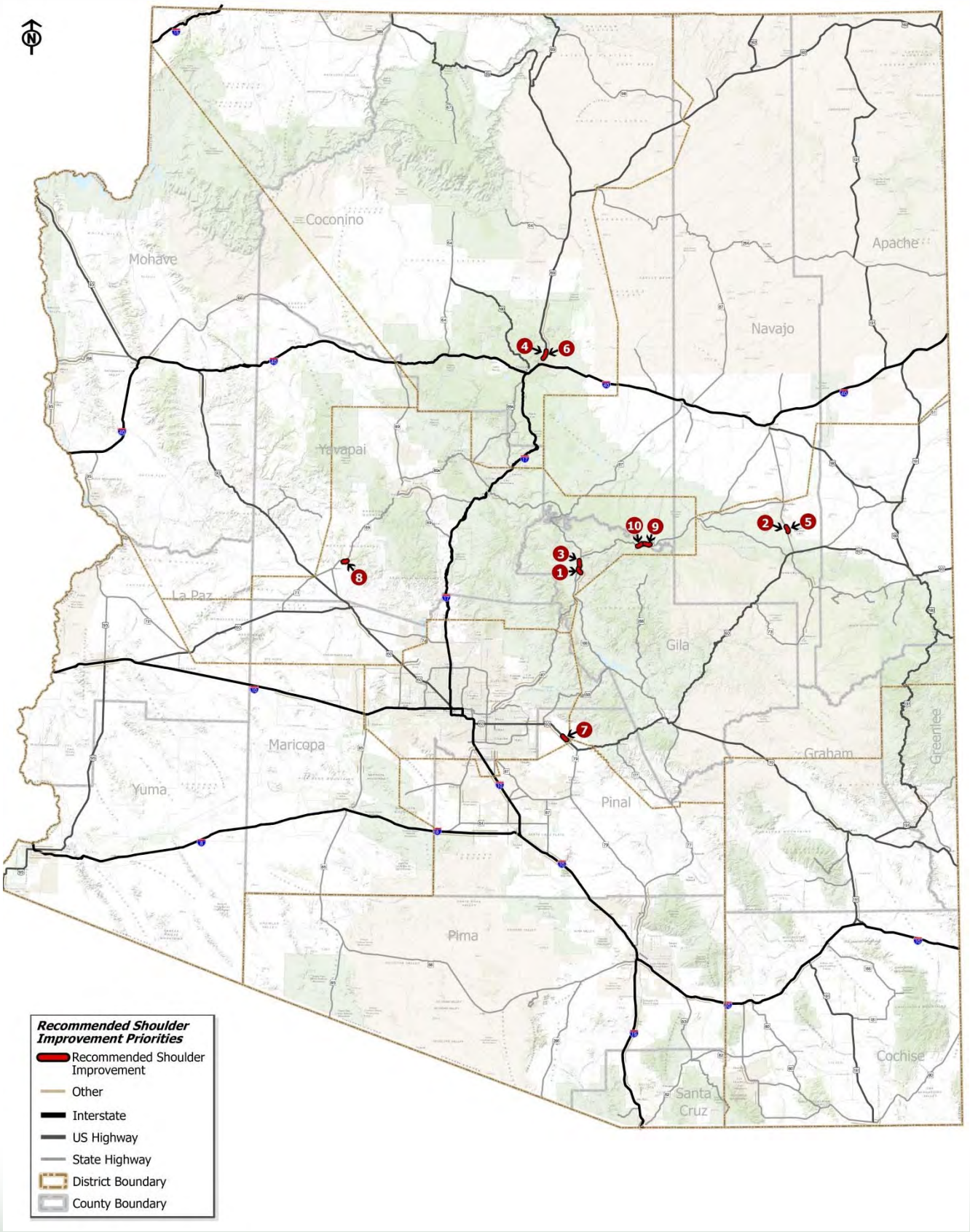
Locations identified for shoulder improvements in Table 6.1 represent only the general problem area and not the exact location and length of the shoulder improvements.

Table 6.1: Multilane Highways - Statewide Ranking of Priority Candidate Locations

Route	Direction	BMP	EMP	Total Points	Tier Level	Statewide Rank	Cost Estimate*
S 087	Southbound	248	246	73.47	1	1	$9,720,000
S 077	Northbound	350	352	57.98	2	2	$7,053,750
S 087	Southbound	251	248	56.94	2	3	$14,580,000
U 089	Northbound	421	424	56.28	2	4	$8,268,750
S 077	Southbound	352	350	56.05	2	5	$7,053,750
U 089	Southbound	424	421	55.7	2	6	$8,268,750
U 060	Eastbound	205	207	48.61	3	7	$5,662,070
S 089	Southbound	276	274	42.21	3	8	$8,545,000
S 260	Westbound	280	277	39	3	9	$10,580,625
S 260	Westbound	280	277	37.14	3	10	$11,542,500

** Planning level cost estimates were developed for Tier 1 candidate locations only. Cost Estimates developed based on typical per-mile/foot construction costs for widening and are expressed in 2015 dollars and have not been field verified. Costs associated with acquiring right-of-way, widening culverts, and environmental mitigation are not included in estimates. Due to topographical or other physical constraints adjustment factors may need to be applied to the cost estimates to account for increased construction costs. During project implementation, the costs for each project may vary; therefore, during the design phase a detailed analysis should be performed to determine actual costs. Unless otherwise noted, the recommended projects are not yet funded.*

Figure 6.1: Multilane Highways - Statewide Priority Candidate Locations



S 087: MP 248 - MP 246 (Southbound Direction)

Statewide Rank: 1

Project Details

Route: S 087
BMP: 248.0
EMP: 246.0
District: Prescott
County: Gila
Direction: Southbound
Left Shoulder: Less Than 4 FT
Right Shoulder: Less Than 5 FT

Roadway Characteristics

Functional Class: Rural Principal Other
Wideload Corridor: No
Pullouts: No
Ped/Bike Corridor: No
Terrain/Max Slope: 5.65
Terrain: Mountainous
Speed Limit(mph): 65
K-Factor: 0.1
Existing AADT: 11371
Future AADT: 16000
Existing LOS: A
Future LOS: A
Directional Split: 55 / 45
Truck %: 9

Safety Analysis

Total Crashes (Both Directions):	126
Number of Fatal Crashes:	1
Injury & Possible Injury Crashes:	43
Non-Injury Crashes:	82
EPDO Per Mile:	64
Crash Rate:	3.04

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

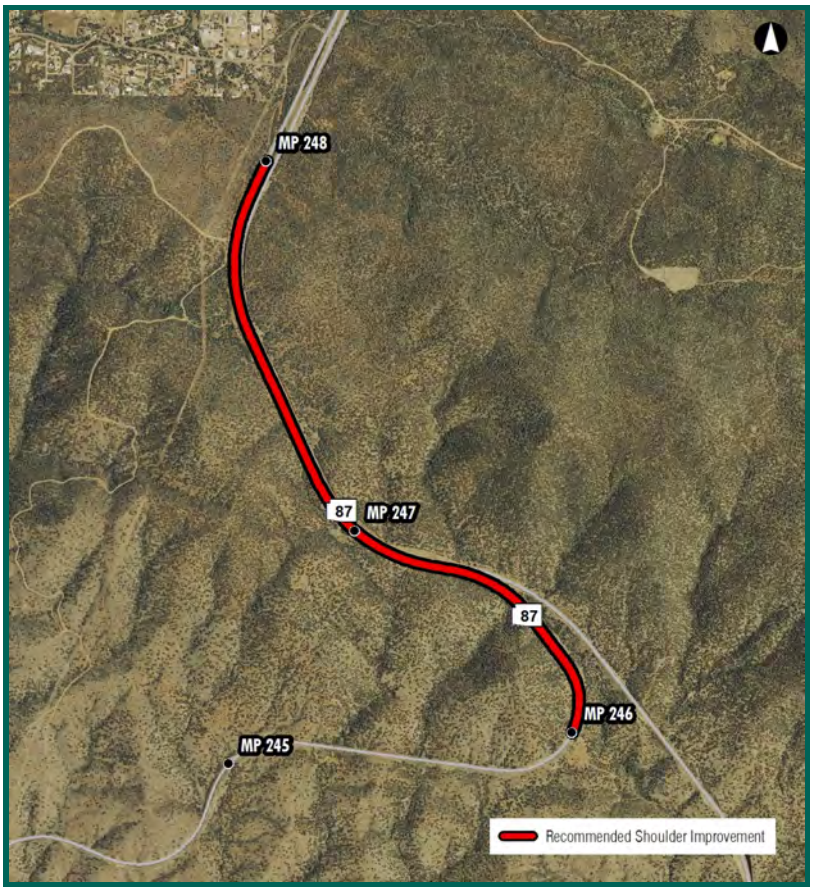
General Location Assessment: Steep roadside slopes

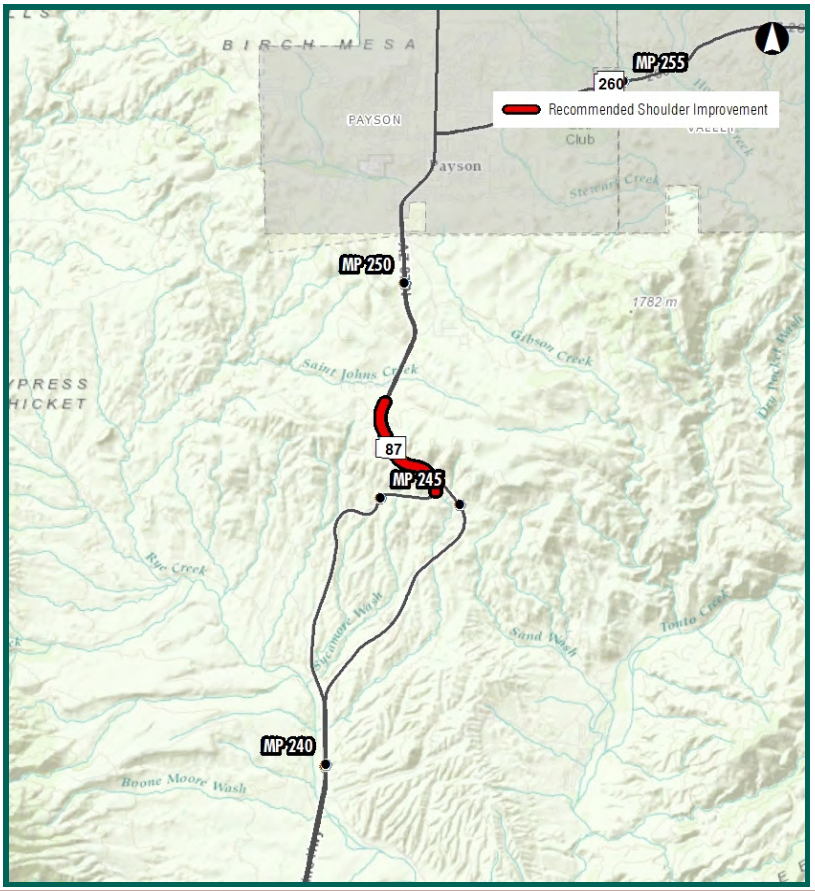
Cost Estimate: $9,720,000

Environmental Overview

Land Ownership: Tonto National Forest

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental concerns





S 077: MP 350 - MP 352 (Northbound Direction)

Statewide Rank: 2

Project Details

Route: S 077
BMP: 350.0
EMP: 352.0
District: Globe
County: Navajo
Direction: Northbound
Left Shoulder: Over 4 FT
Right Shoulder: Less Than 5 FT

Roadway Characteristics

Functional Class: Rural Principal Other
Wideload Corridor: Yes
Pullouts: No
Ped/Bike Corridor: No
Terrain/Max Slope: 2.19
Terrain: Rolling
Speed Limit(mph): 65
K-Factor: 0.08
Existing AADT: 7832
Future AADT: 10000
Existing LOS: A
Future LOS: A
Directional Split: 59 / 41
Truck %: 13

Safety Analysis

Total Crashes (Both Directions): 65
Number of Fatal Crashes: 1
Injury & Possible Injury Crashes: 58
Non-Injury Crashes: 6
EPDO Per Mile: 60
Crash Rate: 2.27

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

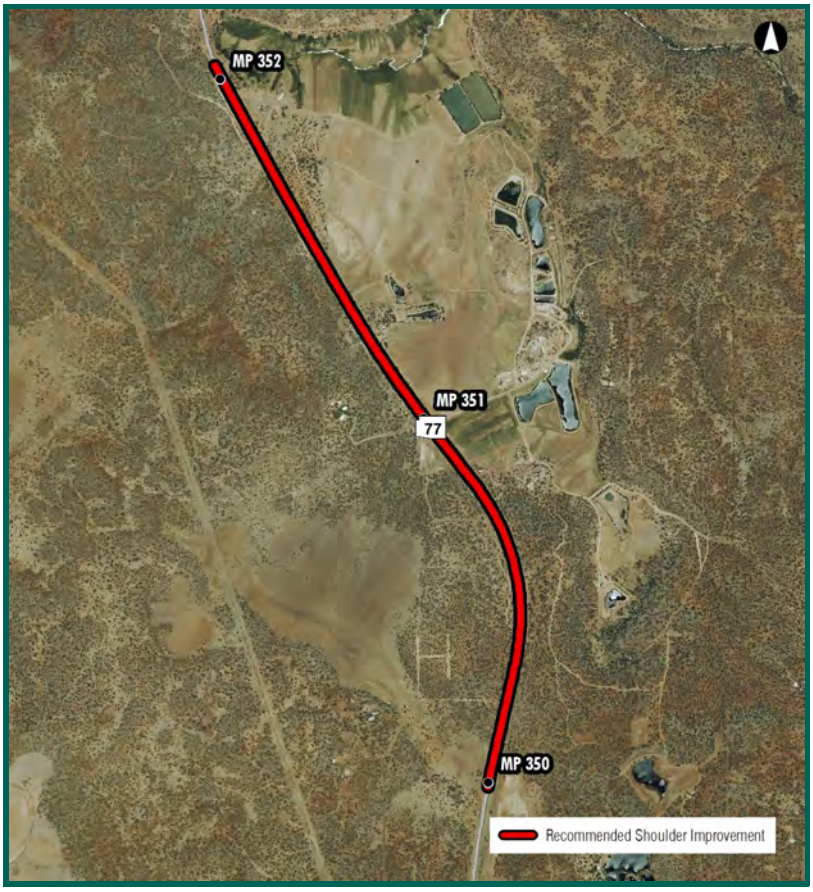
General Location Assessment: Steep roadside slopes

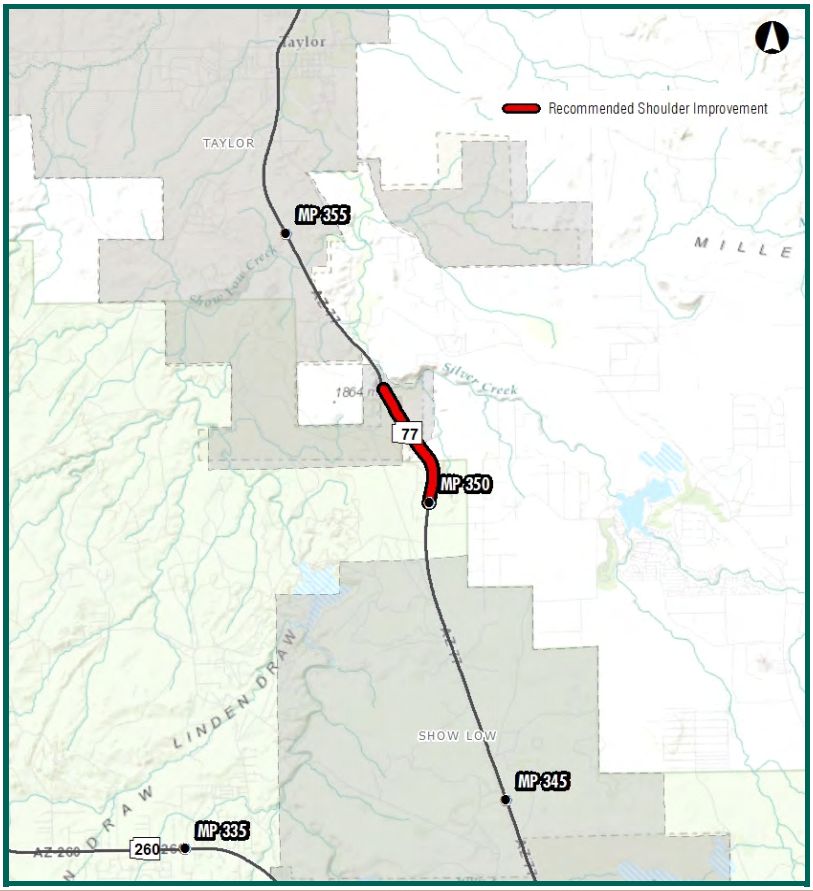
Cost Estimate: $7,053,750

Environmental Overview

Land Ownership: Private Land, Apache-Sitgreaves National Forest, Bureau of Land Mgmt.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Willdife Linkage Zone;100-Yr Floodplain





S 087: MP 251 - MP 248 (Southbound Direction)

Statewide Rank: 3

Project Details

Route: S 087
BMP: 251.0
EMP: 248.0
District: Prescott
County: Gila
Direction: Southbound
Left Shoulder: Less Than 4 FT
Right Shoulder: Less Than 5 FT

Roadway Characteristics

Functional Class: Rural Principal Other
Wideload Corridor: No
Pullouts: No
Ped/Bike Corridor: No
Terrain/Max Slope: 2.24
Terrain: Mountainous
Speed Limit(mph): 65
K-Factor: 0.1
Existing AADT: 11371
Future AADT: 16000
Existing LOS: A
Future LOS: A
Directional Split: 55 / 45
Truck %: 9

Safety Analysis

Total Crashes (Both Directions):	100
Number of Fatal Crashes:	2
Injury & Possible Injury Crashes:	29
Non-Injury Crashes:	69
EPDO Per Mile:	32
Crash Rate:	1.61

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

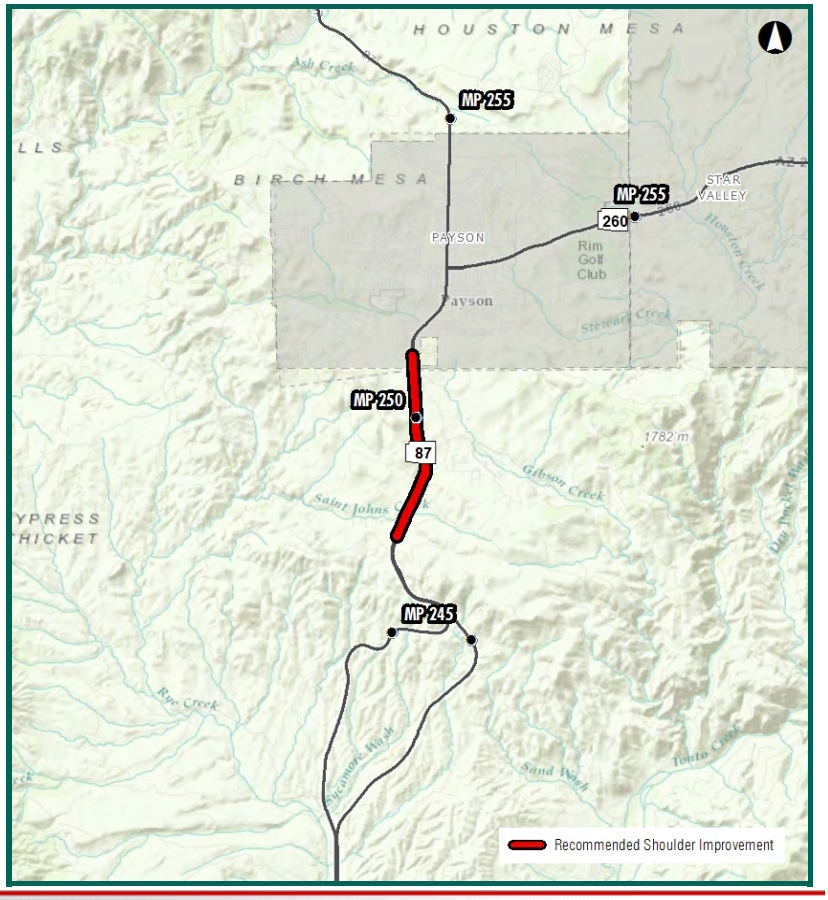
General Location Assessment: Ample room to widen roadway

Cost Estimate: $14,580,000

Environmental Overview

Land Ownership: Private Land, Tonto National Forest, Yavapai Tonto Apache Reservation

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: No major environmental concerns



U 089: MP 421 - MP 424 (Northbound Direction)

Statewide Rank: 4

Project Details

Route: U 089
BMP: 421.0
EMP: 424.0
District: Flagstaff
County: Coconino

Direction: Northbound
Left Shoulder: Over 4 FT
Right Shoulder: 5 to 8 FT

Roadway Characteristics

Functional Class: Urban Principal Other
Wideload Corridor: Yes
Pullouts: No
Ped/Bike Corridor: No
Terrain/Max Slope: 3.81
Terrain: Flat
Speed Limit(mph): 55
K-Factor: 0.09
Existing AADT: 15879
Future AADT: 22500
Existing LOS: A
Future LOS: B
Directional Split: 59 / 41
Truck %: 10

Safety Analysis

Total Crashes (Both Directions): 119
Number of Fatal Crashes: 0
Injury & Possible Injury Crashes: 114
Non-Injury Crashes: 5
EPDO Per Mile: 75
Crash Rate: 1.37

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

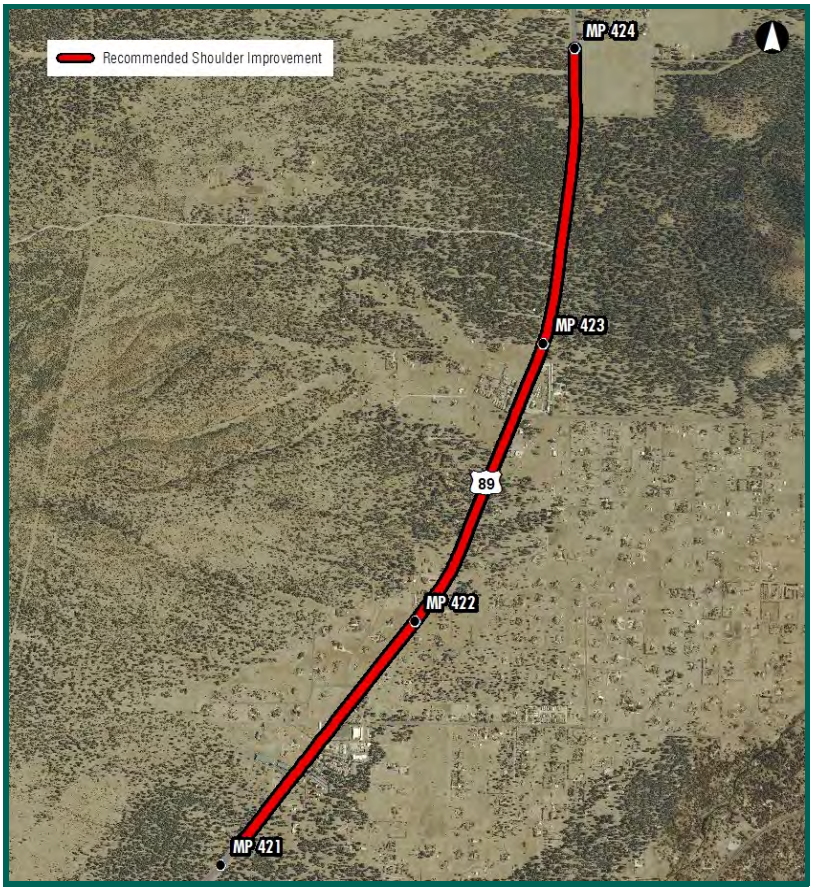
General Location Assessment: Ample room to widen roadway

Cost Estimate: $8,268,750

Environmental Overview

Land Ownership: Private Land, Coconino National Forest

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Willdife Linkage Zone



S 077: MP 352 - MP 350 (Southbound Direction)

Statewide Rank: 5

Project Details

Route: S 077
BMP: 352.0
EMP: 350.0
District: Globe
County: Navajo
Direction: Southbound
Left Shoulder: Over 4 FT
Right Shoulder: Less Than 5 FT

Roadway Characteristics

Functional Class: Rural Principal Other
Wideload Corridor: Yes
Pullouts: No
Ped/Bike Corridor: No
Terrain/Max Slope: 2.19
Terrain: Rolling
Speed Limit(mph): 65
K-Factor: 0.08
Existing AADT: 7832
Future AADT: 10000
Existing LOS: A
Future LOS: A
Directional Split: 59 / 41
Truck %: 13

Safety Analysis

Total Crashes (Both Directions): 64
Number of Fatal Crashes: 1
Injury & Possible Injury Crashes: 19
Non-Injury Crashes: 44
EPDO Per Mile: 32
Crash Rate: 2.24

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

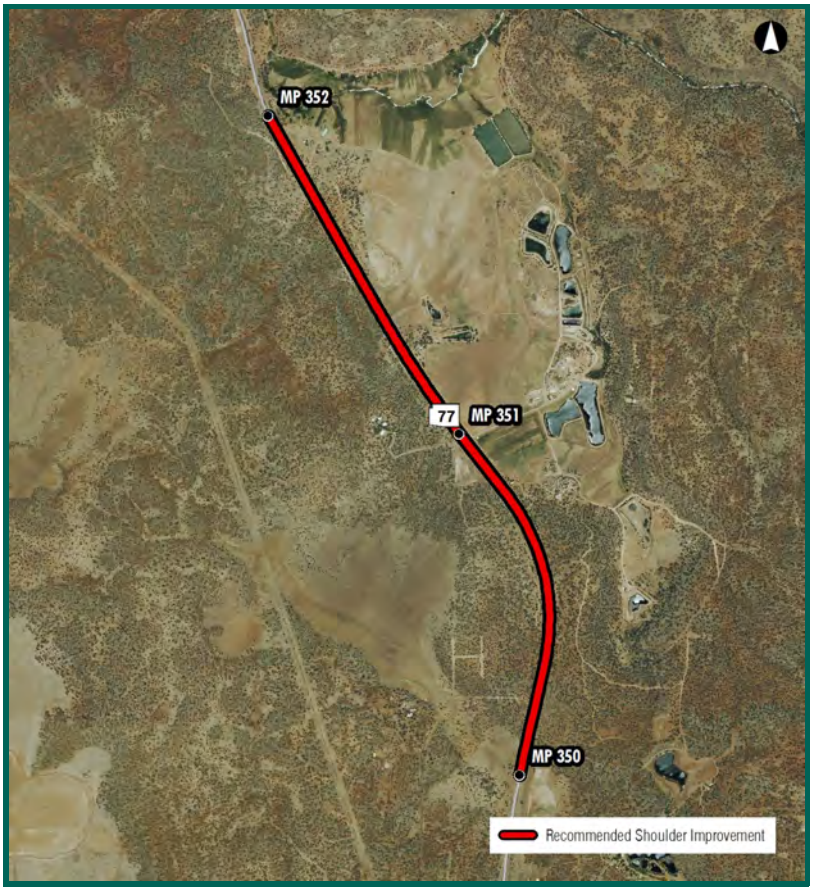
General Location Assessment: Roadside cliffs limit construction; Bridge on segment requires widening

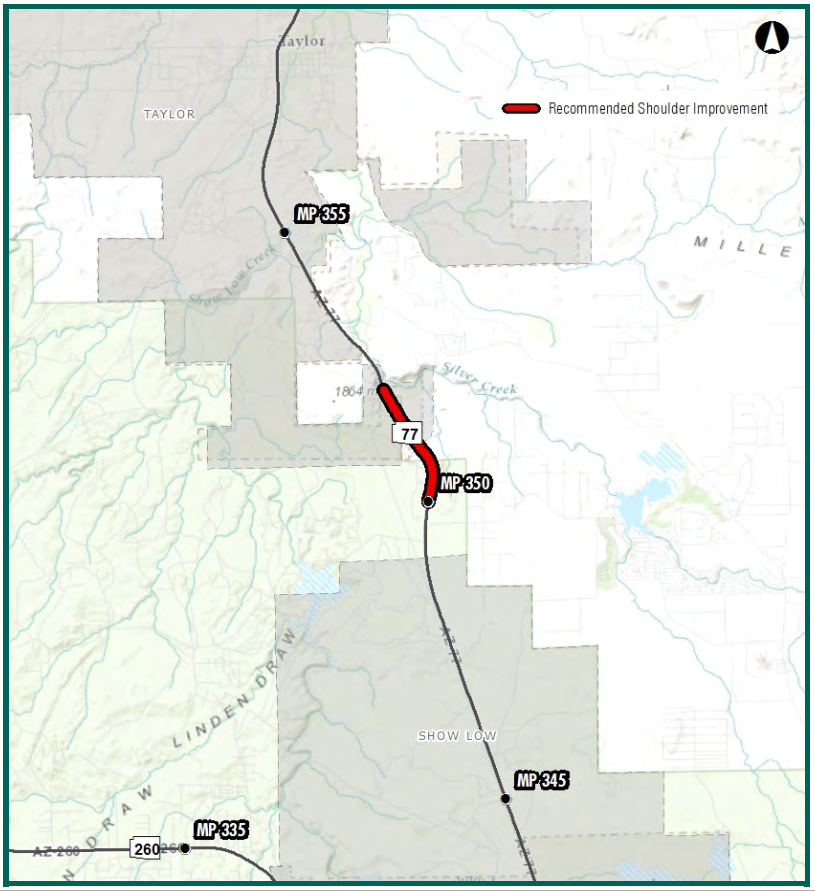
Cost Estimate: $7,053,750

Environmental Overview

Land Ownership: Private Land, Apache-Sitgreaves National Forest, Bureau of Land Mgmt.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Willdife Linkage Zone;100-Yr Floodplain





U 089: MP 424 - MP 421 (Southbound Direction)

Statewide Rank: 6

Project Details

Route: U 089
BMP: 424.0
EMP: 421.0
District: Flagstaff
County: Coconino
Direction: Southbound
Left Shoulder: Over 4 FT
Right Shoulder: 5 to 8 FT

Roadway Characteristics

Functional Class: Urban Principal Other
Wideload Corridor: Yes
Pullouts: No
Ped/Bike Corridor: No
Terrain/Max Slope: 3.81
Terrain: Flat
Speed Limit(mph): 55
K-Factor: 0.09
Existing AADT: 15879
Future AADT: 22500
Existing LOS: A
Future LOS: B
Directional Split: 59 / 41
Truck %: 10

Safety Analysis

Total Crashes (Both Directions):	136
Number of Fatal Crashes:	0
Injury & Possible Injury Crashes:	25
Non-Injury Crashes:	111
EPDO Per Mile:	35
Crash Rate:	1.56

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

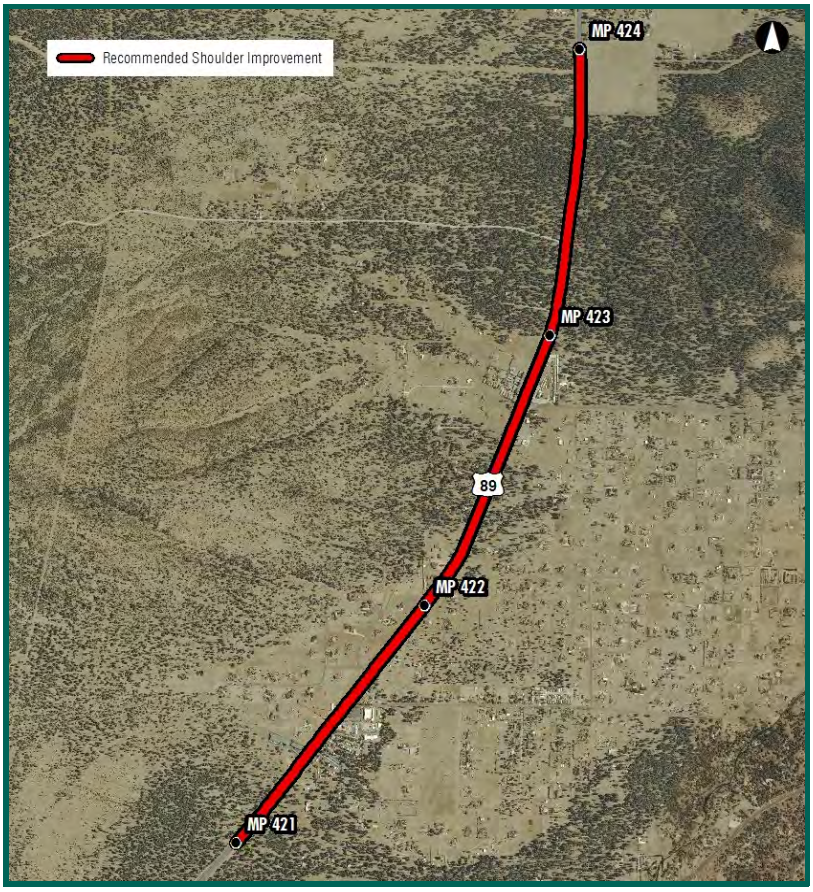
General Location Assessment: Ample room to widen roadway

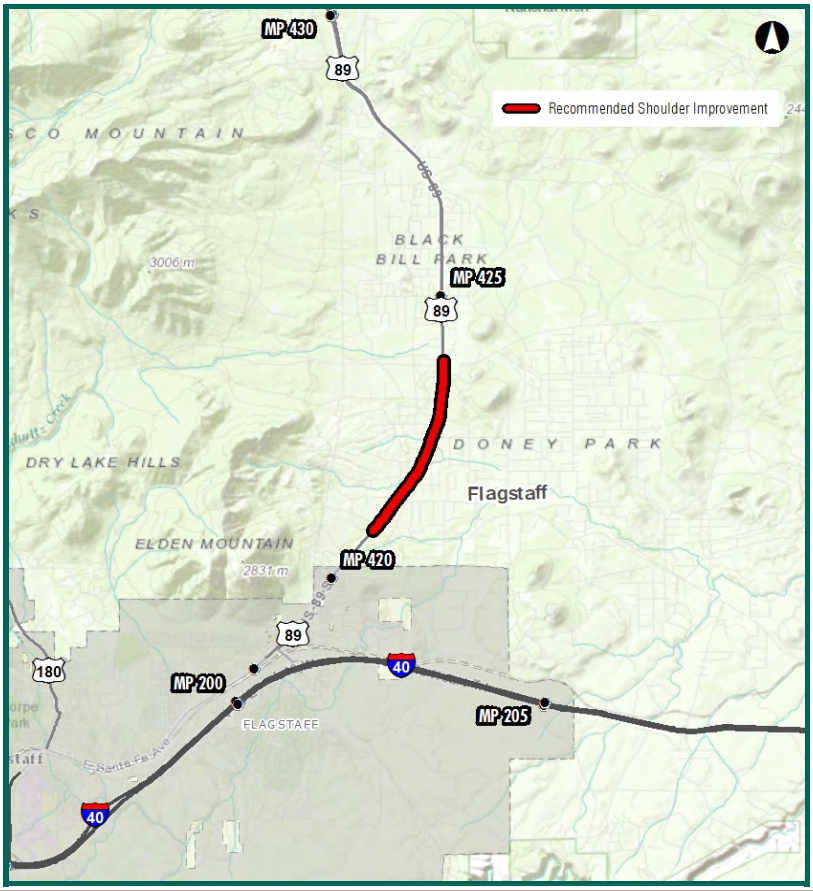
Cost Estimate: $8,268,750

Environmental Overview

Land Ownership: Private Land, Coconino National Forest

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Willdife Linkage Zone;100-Yr Floodplain





U 060: MP 205 - MP 207 (Eastbound Direction)

Statewide Rank: 7

Project Details

Route: U 060
BMP: 205.0
EMP: 207.0
District: Phoenix
County: Pinal

Direction: Eastbound
Left Shoulder: Over 4 FT
Right Shoulder: 5 to 8 FT

Roadway Characteristics

Functional Class: Rural Principal Other
Wideload Corridor: No
Pullouts: No
Ped/Bike Corridor: Yes
Terrain/Max Slope: 0.26
Terrain: Flat
Speed Limit(mph): 65
K-Factor: 0.07
Existing AADT: 12234
Future AADT: 26000
Existing LOS: A
Future LOS: A
Directional Split: 55 / 45
Truck %: 10

Safety Analysis

Total Crashes (Both Directions): 79
Number of Fatal Crashes: 1
Injury & Possible Injury Crashes: 69
Non-Injury Crashes: 9
EPDO Per Mile: 73
Crash Rate: 1.77

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

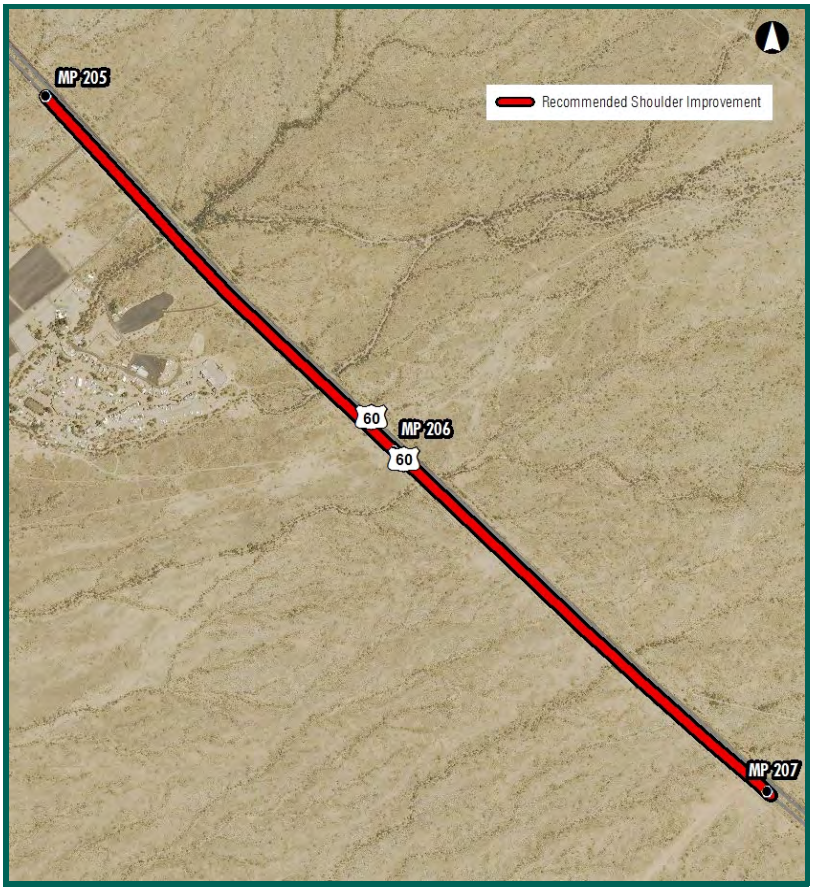
General Location Assessment: Ample room to widen roadway

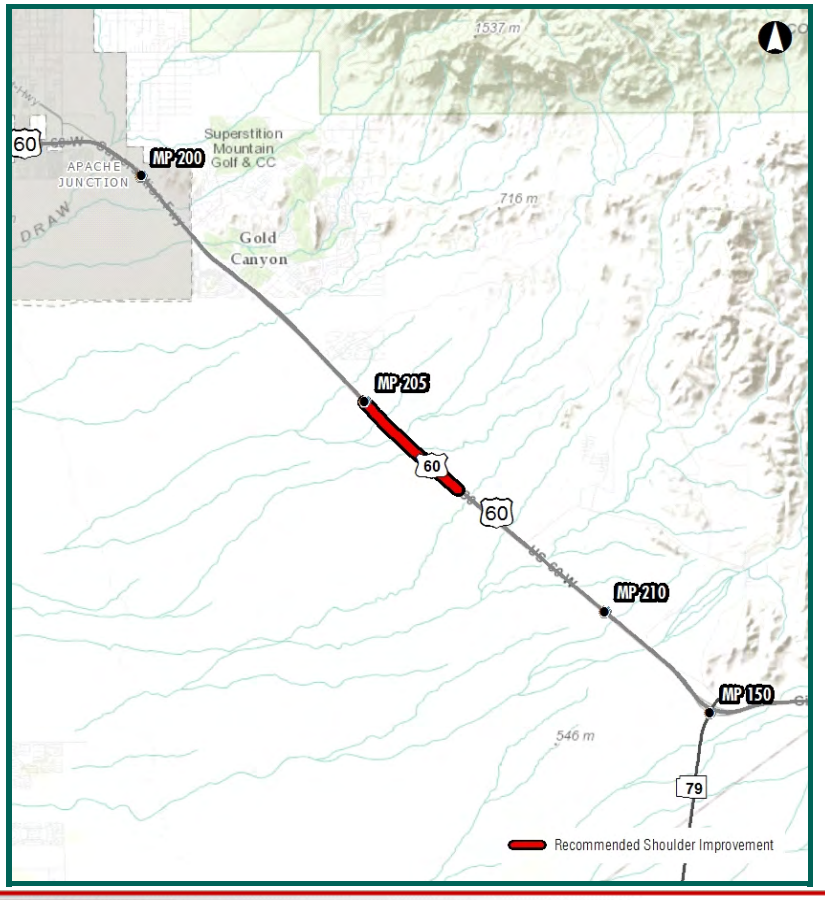
Cost Estimate: $5,662,070

Environmental Overview

Land Ownership: State Trust Land

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: 100-Yr Floodplain





S 089: MP 276 - MP 274 (Southbound Direction)

Statewide Rank: 8

Project Details

Route: S 089
BMP: 276.0
EMP: 274.0
District: Prescott
County: Yavapai
Direction: Southbound
Left Shoulder: Less Than 4 FT
Right Shoulder: Less Than 5 FT

Roadway Characteristics

Functional Class: Rural Major Collector
Wideload Corridor: No
Pullouts: No
Ped/Bike Corridor: No
Terrain/Max Slope: 6.14
Terrain: Mountainous
Speed Limit(mph): 55
K-Factor: 0.1
Existing AADT: 2628
Future AADT: 3400
Existing LOS: A
Future LOS: A
Directional Split: 59 / 41
Truck %: 9

Safety Analysis

Total Crashes (Both Directions): 19
Number of Fatal Crashes: 1
Injury & Possible Injury Crashes: 14
Non-Injury Crashes: 4
EPDO Per Mile: 23
Crash Rate: 1.98

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

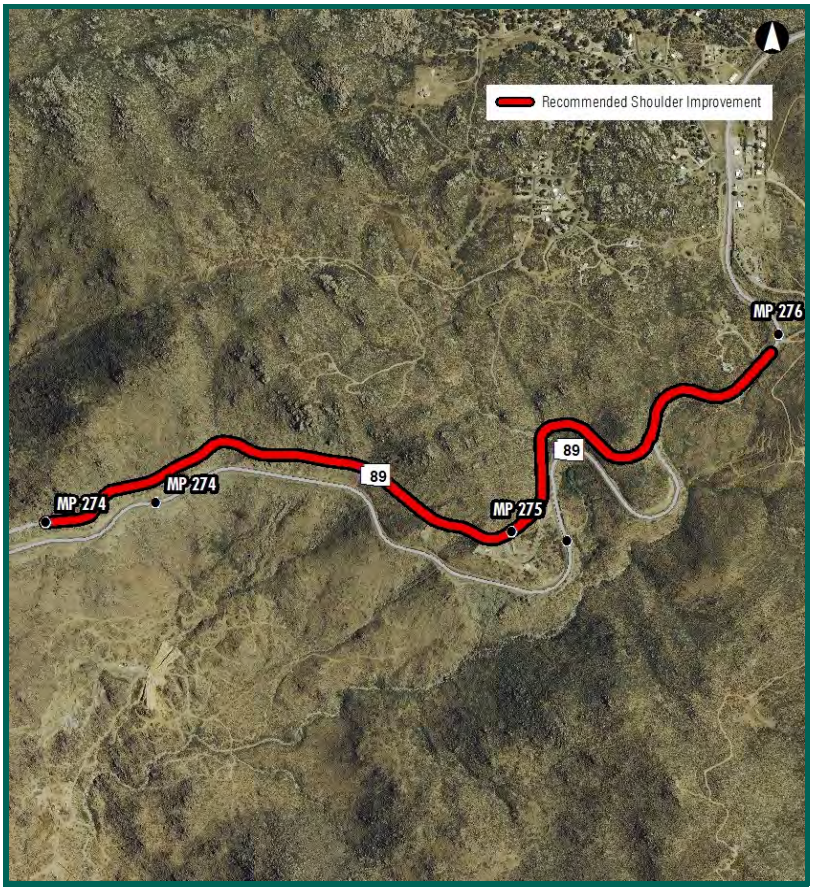
General Location Assessment: Portions of segment are in need of shoulder widening; Roadside cliffs limit construction

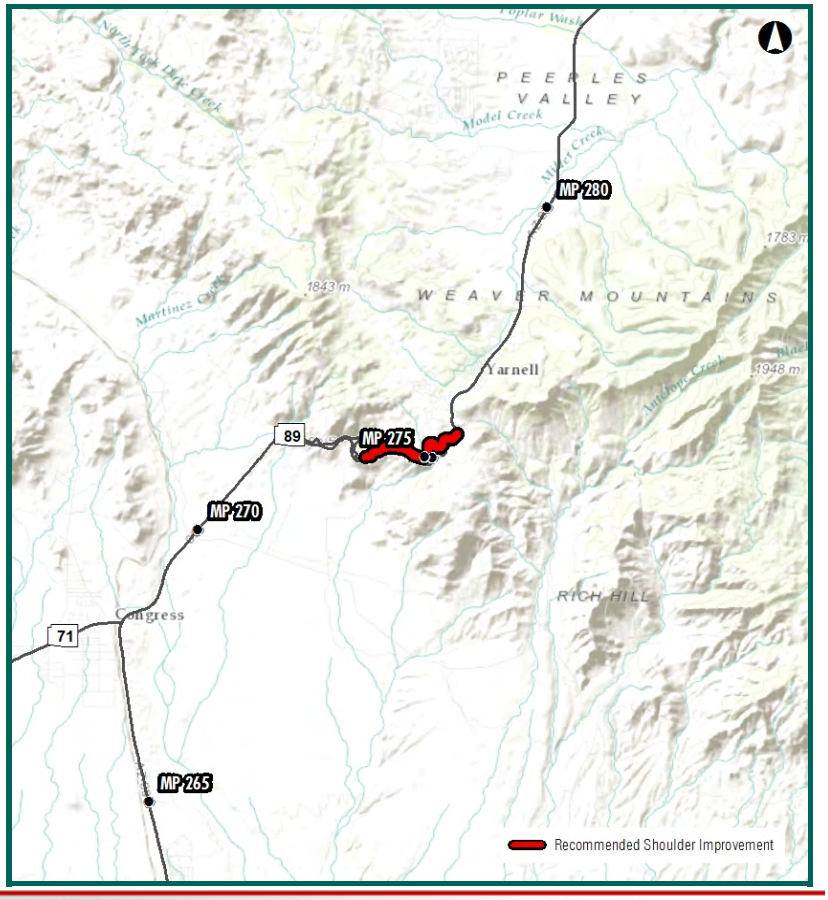
Cost Estimate: $8,545,000

Environmental Overview

Land Ownership: Private Land, State Trust Land, Bureau of Land Mgmt.

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Special Recreation Management area; Suitable Desert Tortoise Habitat; Willdife Linkage Zone





S 260: MP 283 - MP 280 (Westbound Direction)

Statewide Rank: 9

Project Details

Route: S 260
BMP: 283.0
EMP: 280.0
District: Prescott
County: Gila
Direction: Westbound
Left Shoulder: Over 4 FT
Right Shoulder: Less Than 5 FT

Roadway Characteristics

Functional Class: Rural Principal Other
Wideload Corridor: No
Pullouts: No
Ped/Bike Corridor: Yes
Terrain/Max Slope: 5.95
Terrain: Rolling
Speed Limit(mph): 55
K-Factor: 0.1
Existing AADT: 6571
Future AADT: 7200
Existing LOS: A
Future LOS: A
Directional Split: 56 / 44
Truck %: 11

Safety Analysis

Total Crashes (Both Directions): 53
Number of Fatal Crashes: 0
Injury & Possible Injury Crashes: 7
Non-Injury Crashes: 46
EPDO Per Mile: 12
Crash Rate: 1.47

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

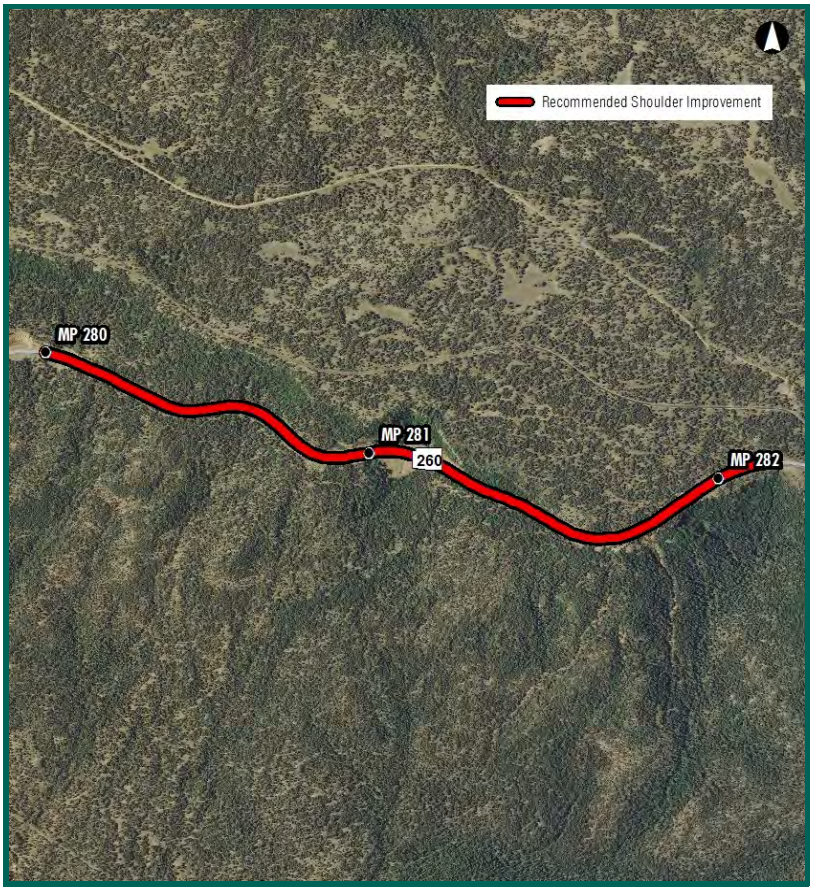
General Location Assessment: Steep roadside slopes

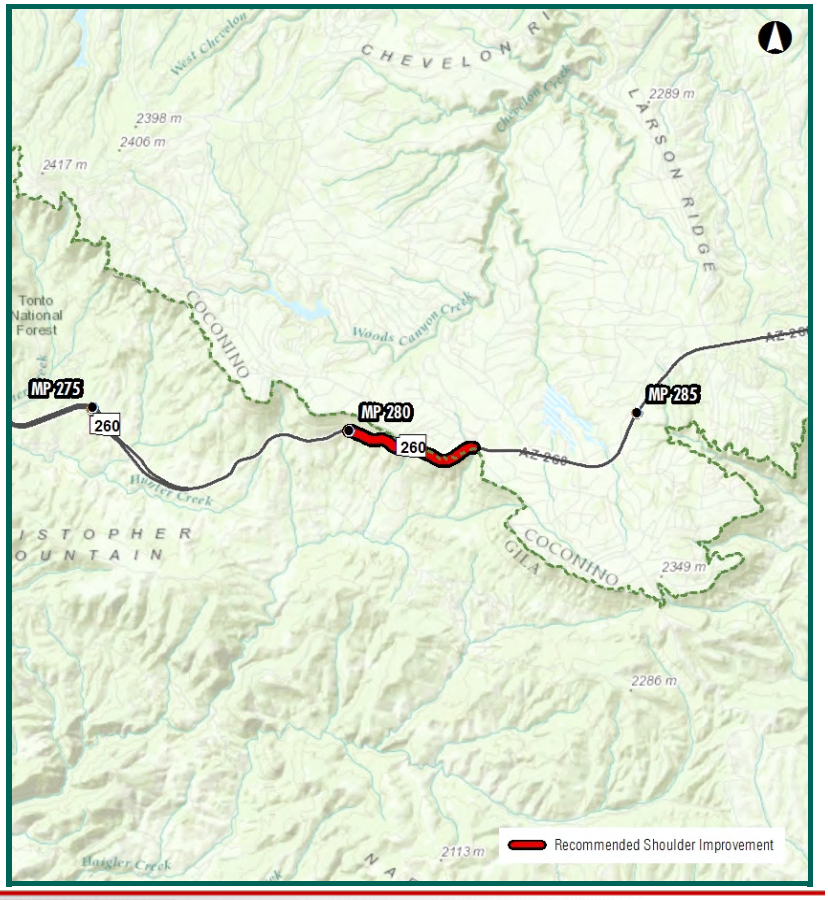
Cost Estimate: $10,580,625

Environmental Overview

Land Ownership: Apache-Sitgreaves National Forest

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Willdife Linkage Zone; Critical Habitat Area





S 260: MP 280 - MP 277 (Westbound Direction)

Statewide Rank: 10

Project Details

Route: S 260
BMP: 280.0
EMP: 277.0
District: Prescott
County: Gila
Direction: Westbound
Left Shoulder: Over 4 FT
Right Shoulder: Less Than 5 FT

Roadway Characteristics

Functional Class: Rural Principal Other
Wideload Corridor: No
Pullouts: No
Ped/Bike Corridor: No
Terrain/Max Slope: 1.67
Terrain: Mountainous
Speed Limit(mph): 55
K-Factor: 0.1
Existing AADT: 6571
Future AADT: 7200
Existing LOS: A
Future LOS: A
Directional Split: 56 / 44
Truck %: 11

Safety Analysis

Total Crashes (Both Directions): 61
Number of Fatal Crashes: 0
Injury & Possible Injury Crashes: 7
Non-Injury Crashes: 54
EPDO Per Mile: 13
Crash Rate: 1.7

Source: Accident Location Information and Surveillance System (ALISS) 2008-2013

Construction Constraints/Feasibility

General Location Assessment: Steep roadside slopes

Cost Estimate: $11,542,500

Environmental Overview

Land Ownership: Tonto National Forest

Potential Environmental Constraints: Analysis of available GIS data found the following environmental constraints that may be present within a quarter-mile of the proposed project area: Willdife Linkage Zone; Critical Habitat Area