

ENTERING
Colorado River
Indian Reservation

Working Paper 2

MPD 035-013

2014 Strategic Long-Range
Transportation Plan *for the*
Colorado River Indian Tribes

Prepared by:



Kimley-Horn
and Associates, Inc.

MARCH 2014 | PREPARED FOR:
COLORADO RIVER INDIAN TRIBES



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Final Working Paper 2- Plan for Improvements

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Project Management Team

Arizona Department of Transportation
206 S. 17th Ave.
Mail Drop: 310B
Phoenix, AZ 85007

Colorado River Indian Tribes
26600 Mohave Road
Parker, Arizona 85344

Don Sneed, ADOT Project Manager
Email: DSneed@azdot.gov
Telephone: 602-712-6736

Greg Fisher, Tribal Project Manager
Email: gregory.fisher@crit-nsn.gov
Telephone: (928) 669-1358

Tony Staffaroni, ADOT Community Relations
Project Manager
Email: ASTaffaroni@azdot.gov
Phone: (602) 245-4051

Project Consultant Team

Kimley-Horn and Associates, Inc.
333 East Wetmore Road, Suite 280
Tucson, AZ 85705

Mary Rodin, AICP
Email: mary.rodin@kimley-horn.com
Telephone: 520-352-8626

Field Data Services of Arizona, Inc.
21636 N. Dietz Drive
Maricopa, Arizona 85138

Sharon Morris, President
Email: smorris@fdsaz.com
Telephone: 520-316-6745

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1. Introduction

1.1 STUDY PURPOSE

The purpose of this study is to prepare an updated Strategic Long Range Transportation Plan (LRTP) for the Colorado River Indian Tribes Reservation. The LRTP recommends transportation improvements for five-, 10-, and 20-year periods, incorporating both roadway and multimodal needs. Areas of key focus for the LRTP include road maintenance, safety programs, bicycle, pedestrian, and transit systems.

The LRTP also identifies updates to the Tribal Transportation Inventory and functional classification systems to assist in expanding the level and types of funding available for transportation projects.

1.2 STUDY OBJECTIVES

The study objective is to develop a LRTP with strong road maintenance, safety, transit, multimodal, and corridor operations elements resulting in a program of transportation projects for five-, 10-, and 20-year planning horizons.

1.3 STUDY AREA

The Colorado River Indian Tribes (CRIT) Reservation spans the Colorado River and encompasses nearly 30,000 acres in Arizona (La Paz County) and California (San Bernardino and Riverside Counties).

The CRIT Reservation was established March 3, 1865 for the “Indians of said river and its tributaries.” The Indigenous people were the agricultural Mohaves and the Chemehuevis. In 1945, a portion of the reservation was reserved for colonization by Indians of other tribes, specifically the Hopis and Navajos.

The Reservation area is shown in **Figure 1**.



Entry Monument at the Tribal Headquarters of the Colorado River Indian Tribes

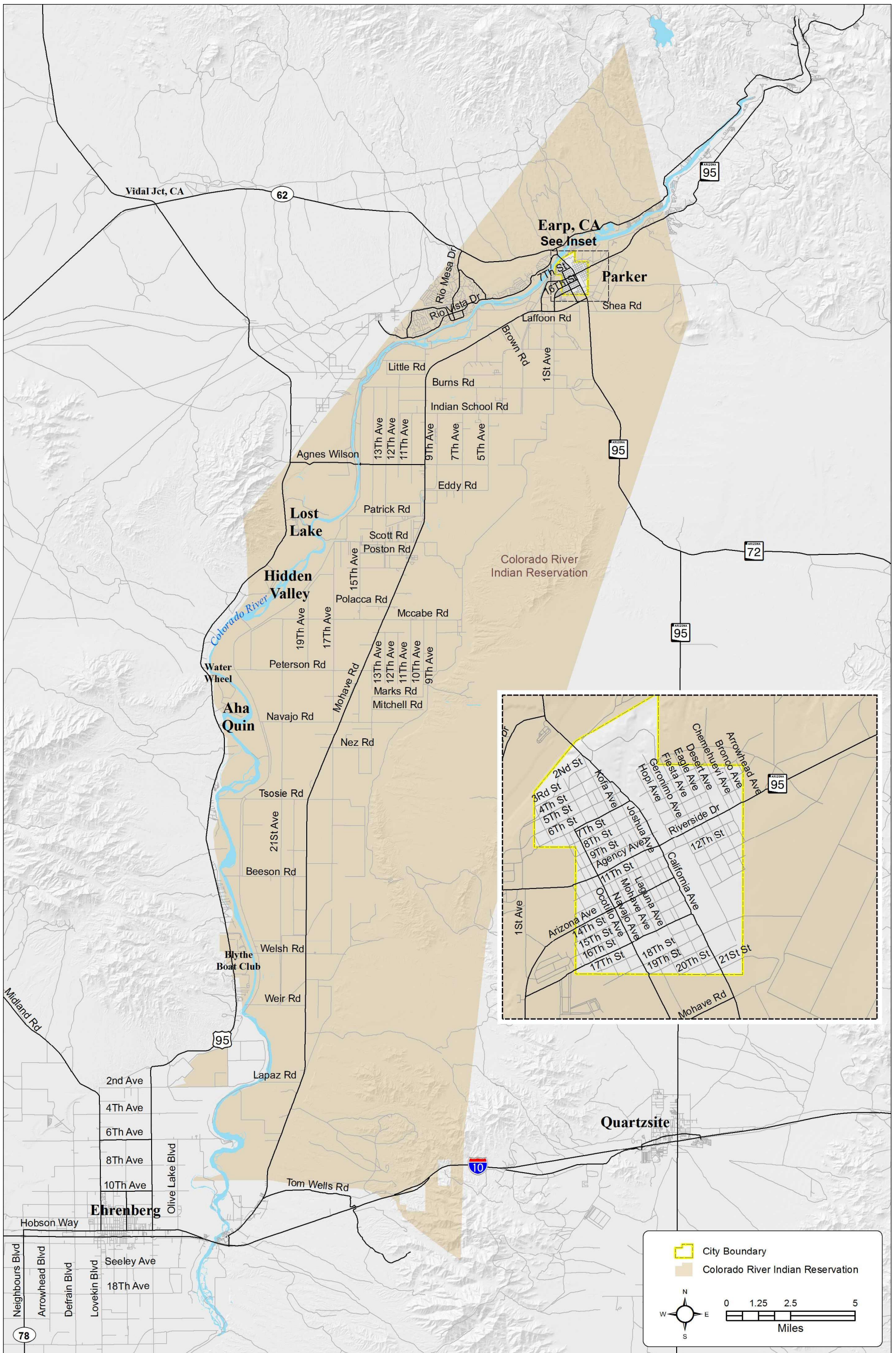


Figure 1 – Study Area Map

1.4 ORGANIZATION OF WORKING PAPER 2

Working Paper 2 (this working paper) develops a prioritized plan of transportation improvement projects. The findings of Working Papers 1 and 2 will be summarized into a Final Report, which will be the LRTP presented for approval to the CRIT Tribal Council.

This Working Paper is organized into the following chapters:

Chapter 1, Introduction – This chapter describes the study purpose and working paper organization.

Chapter 2, Transportation Needs – This chapter summarizes transportation needs that will be addressed through the recommended projects. Transportation needs were defined in detail in Working Paper 1.

Chapter 3, Recommended Projects – This chapter describes recommended projects, by category, and planning level costs.

Chapter 4, Project Prioritization and Plan of Improvements – This chapter describes project prioritization into short, mid-, and long range time frames and presents the plan of projects within each of these time frames.

Chapter 5, Funding Sources for Transportation Projects – This chapter summarizes potential funding sources for different categories of projects.

Chapter 6, Other Recommendations – This chapter describes recommendations for additions to the Tribal Transportation Inventory and Functional Classification Updates.

2. Transportation Needs

This chapter provides an overview of multi-modal transportation needs. The needs analysis was developed through a process which considered:

- Stakeholder, Technical Advisory Committee, and general public input
- Traffic analysis
- Crash data assessment
- Field review of road conditions and pavement conditions
- CRIT Road Safety Assessment (RSA) findings

2.1 ROADWAY NEEDS

Key roadway related needs include:

1. Repaving existing paved roads – a field assessment of road conditions was conducted in July 2013 to assess pavement conditions on key roads in the CRIT community. These data were used to develop paving needs.
2. Paving gravel/unpaved roads – needs were identified based on input from the CRIT Tribal Planner and stakeholders.
3. Traffic control - needs were identified through findings of the 2013 CRIT Road Safety Assessment and discussions with the CRIT Police Department and BIA Maintenance staff.
4. Culvert/canal crossings and bridge improvement needs – needs were identified based on field reviews, BIA bridge ratings, and the 2013 CRIT Road Safety Assessment findings.
5. Intersection improvements – Needs were identified through stakeholder interviews, 2013 CRIT Road Safety Assessment findings, and crash analysis.
6. Safety projects - identified through visual inspection, stakeholder input, and input from the CRIT Tribal Planner.
 - a. Safety–focused education campaign
 - b. Future CRIT Road Safety Assessment (RSA) locations
 - c. Crash reporting procedures
 - d. Signing and striping projects
 - e. Canal safety improvements
 - f. Street lighting

Roadway needs for paving dirt/gravel roads, repaving existing paved roads, shoulder improvement needs, and canal crossing needs are summarized graphically in **Figure 2**. Intersection improvement needs are summarized in **Figure 3**.

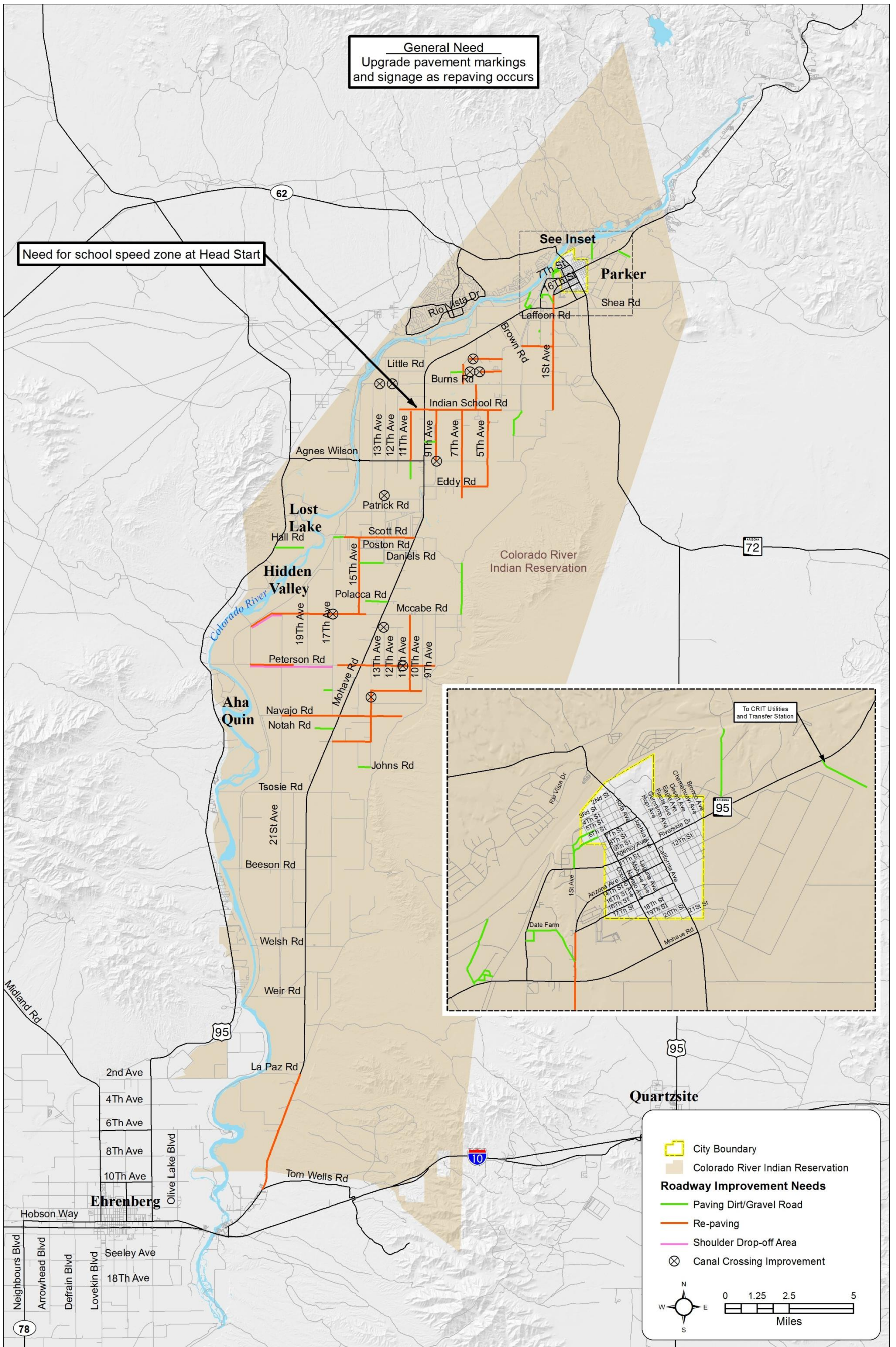


Figure 2 – Road Improvement Needs

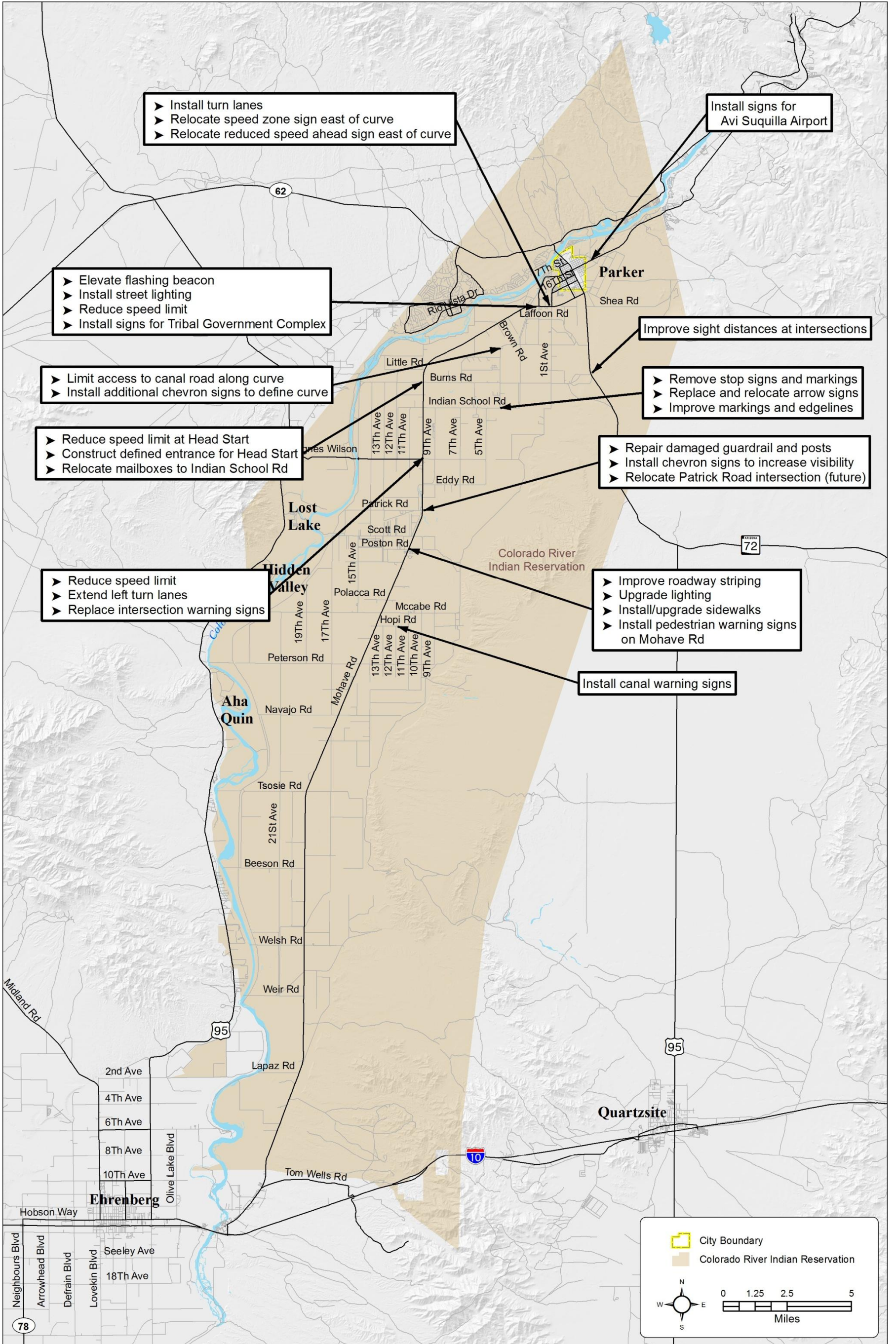


Figure 3 – Intersection Improvement Needs

2.2 PEDESTRIAN NEEDS

Sidewalks and paths are limited on the CRIT Reservation. Sidewalks provide many benefits including safety, mobility, and healthier communities. Sidewalks encourage walking, which is an excellent moderate exercise. Sidewalks also increase safety for pedestrians – according to a Federal Highway Administration report, roadways without sidewalks are more than twice as likely to have pedestrian crashes as sites with sidewalks on both sides of the street¹

Pedestrian needs are shown graphically in **Figure 4** and include:

Sidewalk Needs - Developing a system of sidewalk connections to and from homes to activity centers such as the Tribal Headquarters, health care facilities, and schools were important considerations in developing projects. Providing connections to link to the sidewalk system within the Town of Parker to Tribal roads was another consideration.

Pedestrian Crosswalks and Crossing Devices – Additional crossing opportunities on Riverside Drive (specifically at Eagle Avenue and Chemehuevi Avenue) and on California Avenue at 12th Street are needed. It should be noted that these are not Tribal roads, and are needs for consideration by the Town of Parker.

A finding of a CRIT RSA conducted in early 2013 was that pedestrian crossing warning signs are needed on Mohave Road at the approach to Poston Road. In addition, the RSA recommended new pavement markings, sidewalks, curb and gutter along the intersection legs, and upgraded street lighting.

Multiuse Paths - Trails are a need on the Reservation.

2.3 AVIATION ACCESS NEEDS

The following transportation needs related to airport access were identified in the Avi Suquilla Airport Master Plan Update (2013) and discussions with the Avi Suquilla Airport Manager:

- Drainage improvements and fire-water line construction, and repaving on Airport Road.
- Additional airport identification signage.
- All-weather perimeter road around the airport.
- Signage upgrades and improvements to aircraft storage area.
- Parking lot construction.
- Paving improvements to runways, apron areas, perimeter road over time.
- Van to serve airport passengers, or coordination with a future transit system, perhaps on a demand-responsive basis.

¹ FHWA Investigation of Exposure-Based Pedestrian Accident Areas: Crosswalks, Sidewalks, Local Streets, and Major Arterials. Publication No. FHWA/RD87-038, FHWA, Washington, D.C., 1987.

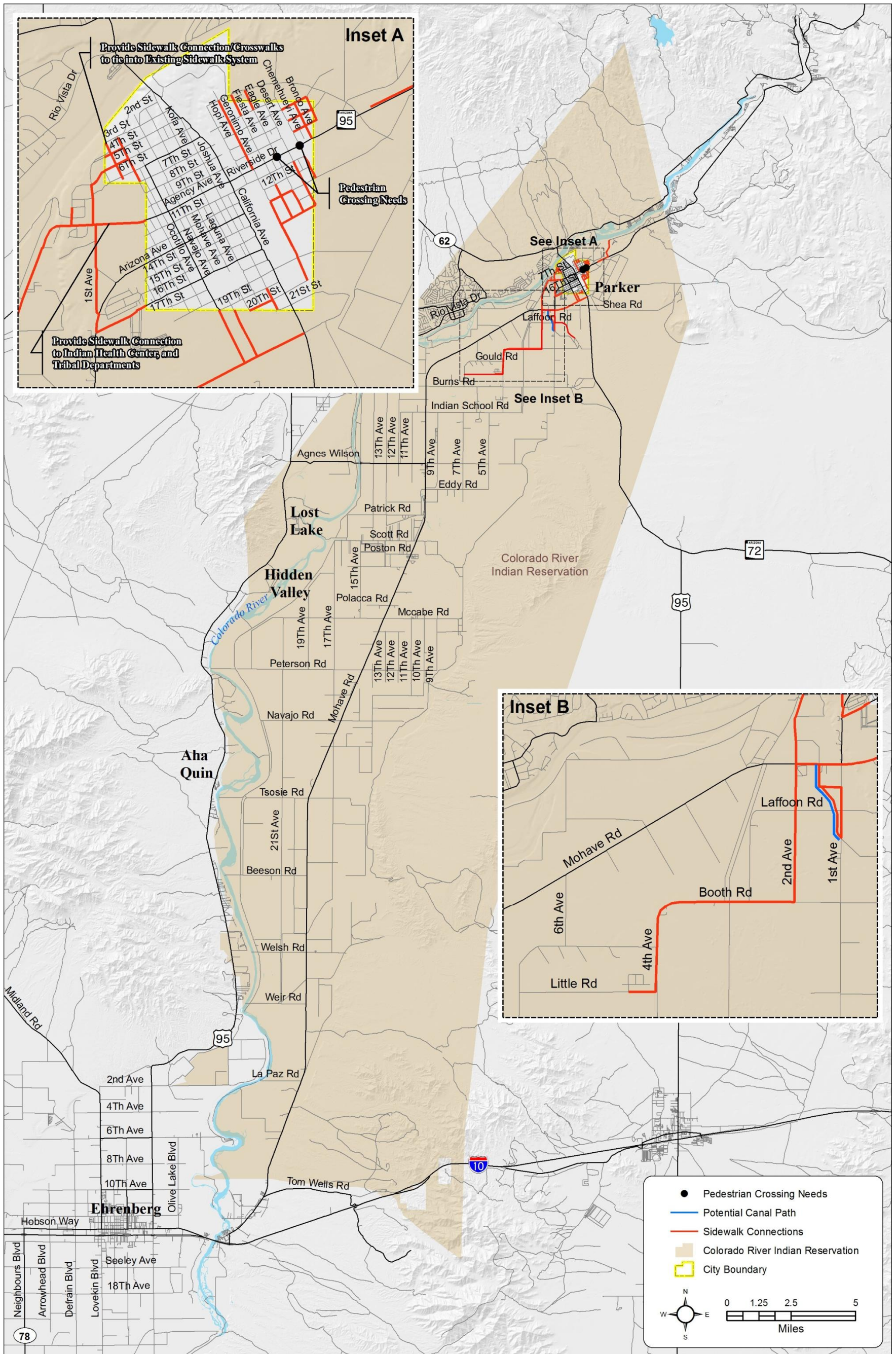


Figure 4 – Pedestrian Improvement Needs

2.4 TRANSIT NEEDS

Transit needs identified were:

1. A phased implementation of a fixed route transit system.
 - a. Focused on the Tribal community near the Parker area.
 - b. Point to point fixed route to outlying concentrations of tribal activity.
2. Phased implementation of demand-responsive service for rural communities.
 - a. Prioritization of rural focus areas by tribal leaders.
 - b. Reservation-wide services.

Under a separate Federal Transit Administration Section 5311(c) Tribal Transit Planning Grant, an implementation plan for a start-up transit system will be developed.

2.5 OTHER TRANSPORTATION RELATED NEEDS

Other transportation-related needs that were identified include:

- Tribal Transportation Inventory Updates
- Functional Classification Updates
- Parking lot paving needs for community facilities, such as:
 - Poston Fire Station parking lot
 - Mo-Chem-Ho-Na Senior Center
 - Ahakhav Preserve parking areas
 - Tribal-related businesses and department office parking lots
- Roadside vegetation control

2.6 PUBLIC OPEN HOUSE INPUT

2.6.1 PUBLIC OPEN HOUSE 1

A public open house was held at the BlueWater Resort and Conference Center in Parker, Arizona on Thursday, September 19, 2013 from 6-8 p.m. The open house was scheduled to coincide with the CRIT monthly Community Awareness Night event to boost attendance. Community members were able to review display boards explaining the study, ask questions, and provide their input on transportation issues and needs in the community.

A survey was provided for members to complete at the open house. Over 30 members of the community signed in at the open house though total attendance was closer to 50-75 people.

A key objective of the open house was to obtain information on where people live and where they travel to in order to help design a future transit system. This was accomplished by providing a board where persons could place a colored dot where they live, and another color dot to show where they travel to.

The following locations were identified as origins and destinations on the display board.

Origins

Parker Area

- 15th Street, near Ocotillo Avenue
- Reata Avenue, north of 15th Street (2 responses)
- 16th Street, near Ocotillo Avenue
- Middle Street (100 Homes) (3 responses)
- Mohave Road, near Navajo Avenue

Between Parker and Poston

- Laffoon Road, near 3rd Avenue
- 2nd Avenue, north of Booth Road
- 3rd Avenue, north of Booth Road
- Little Road (Mo-Chem neighborhood) (2 responses)
- 9th Avenue, north of Agnes Wilson Road
- 7th Avenue, south of Agnes Wilson Road
- Scott Road, west of Mohave Road

South of Poston

- McCabe Road, east of Mohave Road
- 10th Avenue, north of Peterson Road
- Mitchell Road, east of 14th Avenue
- Navajo Road, east of 21st Avenue

Destinations

- Parker Area
- Moovalya Plaza (3 responses)
- Wal-Mart
- BlueWater Casino (2 responses)
- Blake Elementary School
- Parker Indian Medical Center (2 responses)
- Wallace Junior High School

- Parker High School (2 responses)
- Tribal Headquarters
- La Paz County offices
- Pop Harvey Park (2 responses)
- DES and Food Bank (2 responses)
- Arizona Western College
- Poston Area and south of Poston
- La Pera Elementary School (3 responses)
- Woody's II Convenience Market

2.6.2 PUBLIC OPEN HOUSE 2

Public Open House 2 was held on February 13, 2014 at the BlueWater Resort and Casino in Parker, Arizona. Similarly to Open House 1, this open house was scheduled to coincide with a Community Awareness Night to boost attendance. Community members that attended the open house were able to review display boards explaining the study recommendations, to ask questions and to provide their feedback on transportation issues and needs in the community. A general comment form was also provided for members to complete at the open house. In total, 13 members of the community signed in at the open house.

The following comments were returned via the comment form.

- Marking and striping existing roads
- Maintenance and upkeep of paved and gravel roads
- Knowledge of upcoming jobs and contacts

Verbal comments that were received by the Colorado River Indian Tribes Planner were:

- There was a concern about project prioritization. Roads need to be fixed first, before sidewalk improvements.
- The transit system should be equipped with a lift that can accommodate scooters.
- There needs to be coordination on transit with the Bonnie Baker service in Big River.
- The potholes on 14th Avenue need to be fixed
- There was a comment that at the Walmart driveway, the curb is the same color as the pavement, and it is hard to distinguish the driveway, especially at night.
- Construct sidewalks on 16th Street to the 1st Street subdivision. There is also a need for lighting in this area.

3. Recommended Projects

Transportation projects have been developed to address the Colorado River Indian Tribes transportation needs. Projects are grouped by type of improvement and are discussed below. The projects are in the following categories:

- Pedestrian facility Improvements
- Intersection Improvement Projects
- Safety Projects
- Pavement Maintenance and Rehabilitation Projects
- Transit Projects
- Aviation Projects
- Bridge Improvement Projects
- Paving Dirt or Gravel Road Projects
- Other Transportation Projects



Mohave Road and 2nd Avenue Intersection

3.1 PEDESTRIAN FACILITY RECOMMENDATIONS

Pedestrian improvements are important to improve the livability of a community and connect neighborhoods with activity centers such as schools, employment and shopping destinations. Proposed pedestrian improvements are shown graphically in **Figure 5** and in **Table 1**.

The sidewalk projects assume five foot sidewalks on both sides of the street. The sidewalk projects are grouped into areas for programming purposes. A number of the roads recommended for sidewalk improvements are recommended to be added to the Tribal Transportation Inventory, particularly those that are located within the Parker Town limits.

In order to address the need for additional pedestrian crossings in the Town of Parker, it is recommended that the CRIT work with the Town of Parker to evaluate the need for, and implement pedestrian hybrid beacon (PHB) crossings at key locations at Riverside Drive/ Eagle Avenue, River Drive/Chemuehuevi Avenue, and California Avenue/ 12th Street. Also known as a HAWK beacon (**H**igh-Intensity **A**ctivated cross**W**alk beacon), a pedestrian hybrid beacon is a traffic signal used to stop road traffic and allow pedestrians to cross safely. The purpose of a pedestrian hybrid beacon is to allow protected pedestrian crossings, stopping road traffic only as needed. Research has shown motorists' compliance with the pedestrian hybrid beacon is much higher than with traditional pedestrian crossings.



A pedestrian hybrid beacon helps persons to cross busy streets

Source: Rhode Island Department of Transportation

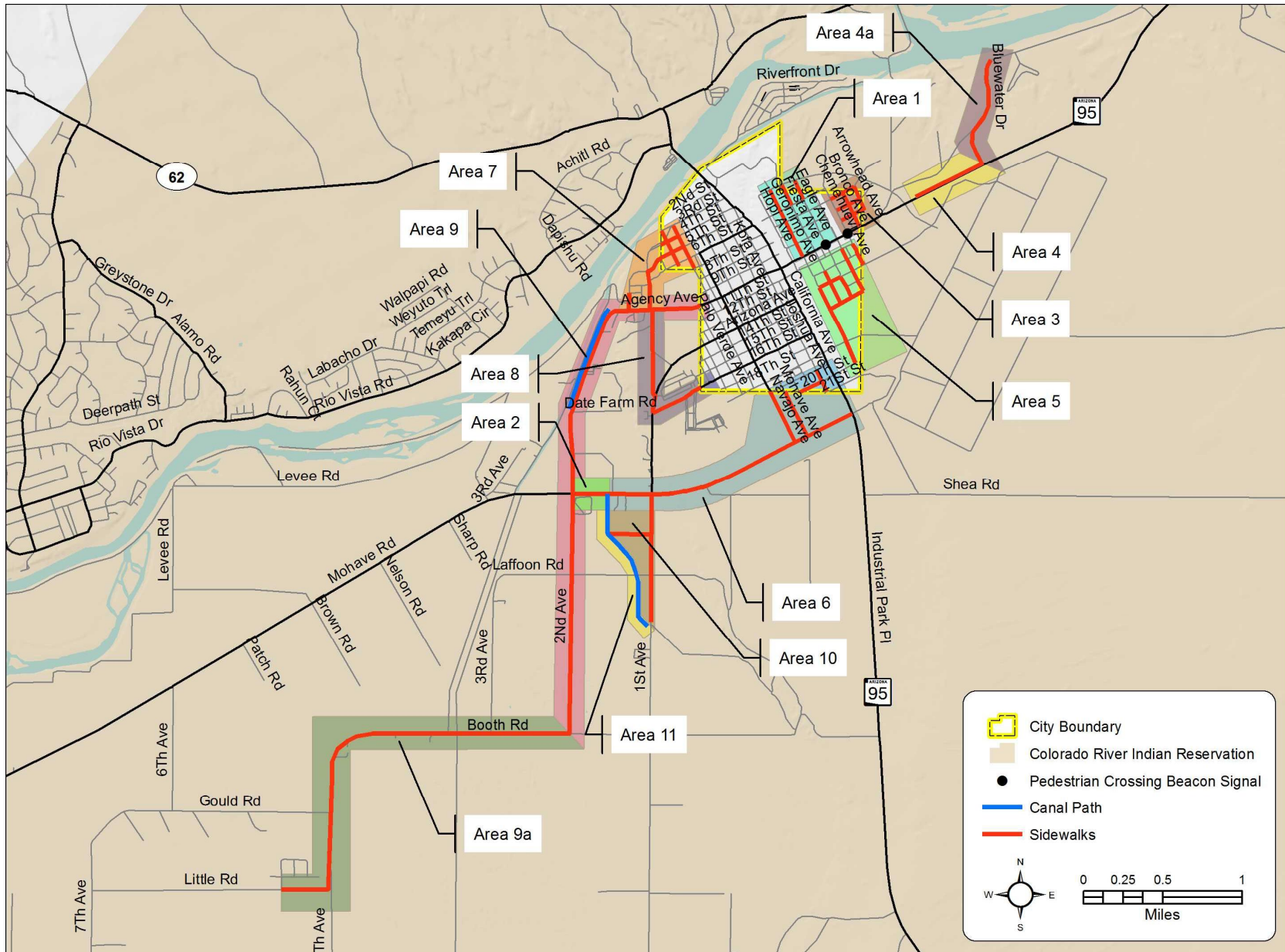


Figure 5 – Recommended Pedestrian Projects

Table 1 – Proposed Pedestrian Improvements

Area	Street Name	From	To	Project Length (miles)	BIA Road Functional Classification*	Existing Roadway or Site Conditions	Proposed Improvement	Total Cost (\$)**	Existing and/or Proposed Development Served by Road
1	Geronimo Ave	6th Street	SR 95	0.29	Not classified	Paved road	Sidewalks	187,000	Connects approx. 15 homes and 3 businesses to sidewalk system on Rio Vista Hwy (SR 95)
	Fiesta Ave	6th Street	North end	0.07	Not classified	Paved road	Sidewalks		Connects 2 homes on Fiesta to existing sidewalk network
	Eagle Ave	6th Street	North end	0.07	Not classified	Paved road	Sidewalks		Connects 3 homes on Eagle to existing sidewalk network
2	Mohave Rd (Rte 1)	2nd Ave	0.4 miles east of 2nd Ave	0.4	2	Paved road	Sidewalks	174,000	Tribal Headquarters
3	7th Street	Chemehuevi	East end	0.14	Not classified	Paved road	Sidewalks	322,000	Connects approximately 20 homes to Western Park, SR 95, and other sidewalks

Area	Street Name	From	To	Project Length (miles)	BIA Road Functional Classification*	Existing Roadway or Site Conditions	Proposed Improvement	Total Cost (\$)**	Existing and/or Proposed Development Served by Road
	8th Street	Chemehuevi	East end	0.14	Not classified	Paved road	Sidewalks		Connects approximately 20 homes to Western Park, SR 95, and other sidewalks
	9th Street	Chemehuevi	East end	0.11	Not classified	Paved road	Sidewalks		Connects approximately 20 homes to Western Park, SR95, and other sidewalks
	unnamed road	8th Street	9th Street	0.07	Not classified	Paved road	Sidewalks		Connects approximately 20 homes to Western Park, SR95, and other sidewalks
	unnamed road	7th Street	8th Street	0.07	Not classified	Paved road	Sidewalks		Connects approximately 20 homes to Western Park, SR95, and other sidewalks
	Bronco Ave	7th Street	SR 95	0.21	Not classified	Paved road	Sidewalks		Connects approximately homes to Western Park, SR95, and other sidewalk network

Area	Street Name	From	To	Project Length (miles)	BIA Road Functional Classification*	Existing Roadway or Site Conditions	Proposed Improvement	Total Cost (\$)**	Existing and/or Proposed Development Served by Road
4	Riverside Drive (Rte95)	SR 95 /.1 mi east of Airport Drive	BlueWater Drive	0.48	2	Paved road	Sidewalks	209,000	Extends existing sidewalk connection from commercial area (Wal-Mart/Moovalya Plaza) to cross street of BlueWater Drive. This would be an ADOT project
4A	BlueWater Drive (Rte 105)	SR 95	BlueWater Park	0.71	5	Paved road	Sidewalks	309,000	Provides a sidewalk connection along BlueWater Drive to the casino and Colorado River waterfront
5	Chem-ehuevi Ave	11th Street	Arizona Ave	0.15	Not classified	Paved road	Sidewalks	767,000	Connects approximately 11 homes to businesses and other sidewalk networks
	Desert Ave	11th Street	W 15th St	0.30	Not classified	Paved road	Sidewalks		Residences (approximately 14), church, businesses
	Eagle Ave	Arizona Ave	15th St	0.15	Not classified	Paved road	Sidewalks		Connects approximately 9 homes to businesses and other sidewalk networks

Area	Street Name	From	To	Project Length (miles)	BIA Road Functional Classification*	Existing Roadway or Site Conditions	Proposed Improvement	Total Cost (\$)**	Existing and/or Proposed Development Served by Road
	Fiesta Ave	12th	15th St	0.23	Not classified	Paved road	Sidewalks		This area appears to be commercial use or vacant
	Geronimo Ave	21st Street	Arizona Ave	0.54	Not classified	Paved road	Sidewalks		This section of Geronimo has primarily businesses and Arizona Western College Parker Learning Center.
	Arizona Ave	Geronimo Ave	Eagle Ave	0.16	Not classified	Paved road	Sidewalks		Connects homes to businesses and other sidewalk networks
	15th Street	Geronimo Ave	Desert Ave	0.23	Not classified	Paved road	Sidewalks		Connects homes to businesses and other sidewalk networks
6	Joshua Ave	19th St	21st St	0.15	Not classified	Paved road	Sidewalks	1,054,000	Connects homes to existing sidewalk network which leads to the park, hospital, and tribal offices
	20th St	Laguna Ave	Joshua Ave	0.16	Not classified	Paved road	Sidewalks		Connects homes to existing sidewalk network which leads to the park, hospital, and tribal offices

Area	Street Name	From	To	Project Length (miles)	BIA Road Functional Classification*	Existing Roadway or Site Conditions	Proposed Improvement	Total Cost (\$)**	Existing and/or Proposed Development Served by Road
	Mohave Ave	19th St	Mohave Rd	0.33	Not classified	Paved road	Sidewalks		Connects homes to hospital
	Navajo Ave	19th St	Mohave Rd	0.33	Not classified	Paved road	Sidewalks		Connects homes to park and hospital
	Mohave Rd	SR 95	0.4 mi east of 2 nd Ave	1.85	2	Paved road	Sidewalk		Hospital, tribal headquarters
7	unnamed road	Agency Ave	Palo Verde	0.42	Not classified	Paved road	Sidewalks	353,000	Connects approximately 25 homes to tribal offices and Indian Health Center
	Palo Verde Ave	6th St	North End	0.21	Not classified	Paved road	Sidewalks		Connects approximately 25 homes to tribal offices and Indian Health Center
	Quartz Ave	6th St	W 5th St	0.08	Not classified	Paved road	Sidewalks		Connects approximately 25 homes to tribal offices and Indian Health Center

Area	Street Name	From	To	Project Length (miles)	BIA Road Functional Classification*	Existing Roadway or Site Conditions	Proposed Improvement	Total Cost (\$)**	Existing and/or Proposed Development Served by Road
	Roosevelt St	Agency Ave	Grant St	0.1	Not classified	Paved road	Sidewalks		Connects approximately 25 homes to tribal offices and Indian Health Center
8	1st Ave (Rte 3)	Agency Ave	16th Street	0.66	5	Paved road	Sidewalks	436,000	links homes to multiple health and social service related offices
	16 th St (Rte 47)	1st Ave	0.06 miles west of Reata Ave	0.34	5	Paved road	Sidewalks		Extends existing sidewalk system from schools to multiple subdivisions- many children walk on this route. Serves 100 homes neighborhood (99 homes plus 1 office) and approximately 23 homes in Desert Sun subdivision.

Area	Street Name	From	To	Project Length (miles)	BIA Road Functional Classification*	Existing Roadway or Site Conditions	Proposed Improvement	Total Cost (\$)**	Existing and/or Proposed Development Served by Road
9	Agency Ave/2nd Ave (Rte5)	Palo Verde Ave	Booth Rd	3.25	5	Paved road	Sidewalks	1,416,000	Connects homes in agricultural area to sidewalk network, medical center, hospital, and tribal offices
9A	Booth Rd (Rte 4)/4th Ave	2nd Avenue	Little Road	2.4	5	Paved road	Sidewalks	1,206,000	Connects homes in agricultural area to sidewalk network, medical center, hospital, and tribal offices
	Little Road (Rte8)	West End	4th Ave	0.37	5	Paved road	Sidewalks		Provides a sidewalk to the Mo-Chem neighborhood-approximately 50 homes
10	Unnamed	1 st Ave	Canal path	0.25	Not classified	Unpaved road	Sidewalks	462,000	Sidewalk link between residential areas and Tribal Headquarters
	1st Ave (Rte3)	Mohave Road	canal crossing	0.81	5	Paved road	Sidewalks		residential areas and Tribal Headquarters

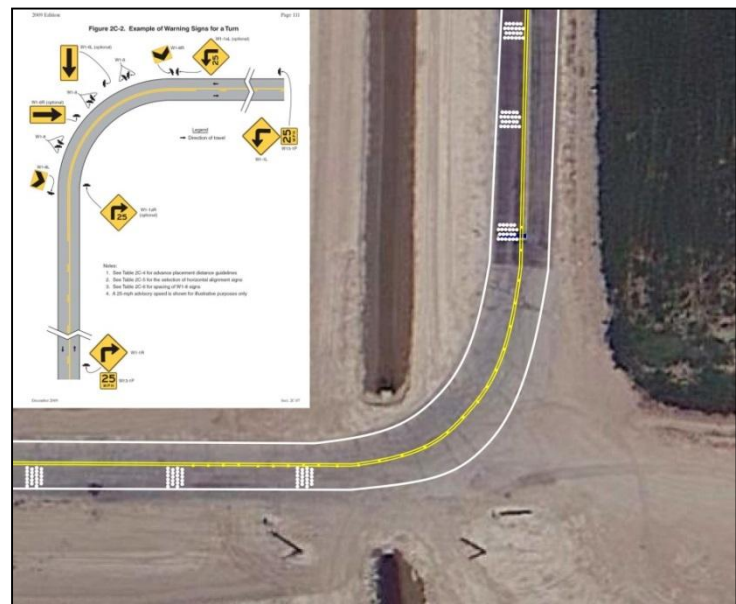
Area	Street Name	From	To	Project Length (miles)	BIA Road Functional Classification*	Existing Roadway or Site Conditions	Proposed Improvement	Total Cost (\$)**	Existing and/or Proposed Development Served by Road
11	Unnamed Road	Mohave Rd	1st Avenue	0.36	Not classified	Paved road	path	157,000	Provides a path through neighborhood areas
N/A	Riverside Drive (SH95-Section 860) at Eagle Avenue	pedestrian beacon signal	N/A	N/A	2	Paved road	pedestrian beacon signal	80,000	Downtown Parker (Note: this would be an ADOT project)
N/A	Riverside Drive (SH95-Section 860) at Chemehuevi Avenue	pedestrian beacon signal	N/A	N/A	2	Paved road	pedestrian beacon signal	80,000	Downtown Parker (Note: this would be an ADOT project)
N/A	California Avenue (SH95-Section 830) at 12th Street	pedestrian beacon signal	N/A	N/A	2	Paved road	pedestrian beacon signal	80,000	Downtown Parker (Note: this would be an ADOT project)

*Functional Class: 2= Rural minor arterial road; 4=Rural major collector road; 5=Rural local road

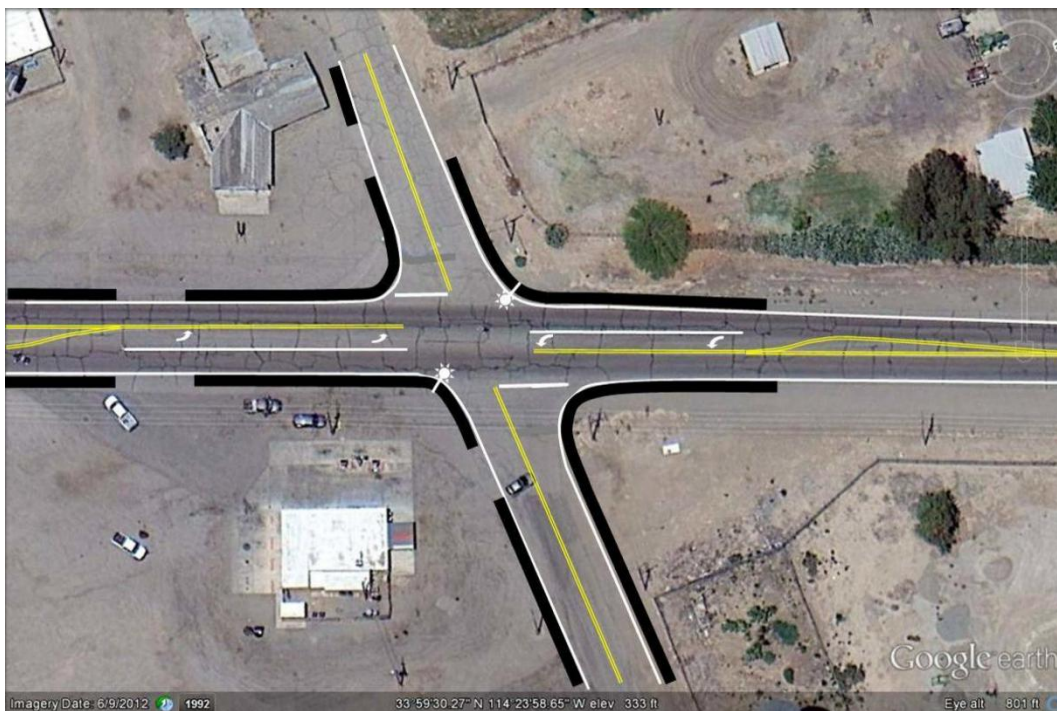
** Estimated costs are expressed in 2013 dollars and are general planning estimates. Actual costs for projects could vary at the time of implementation; therefore, when appropriate a detailed analysis should be performed on a case-by-case basis to determine actual project costs. The planning estimates include estimates for materials, and labor for design and construction. The cost estimates do not include right-of-way costs.

3.2 INTERSECTION IMPROVEMENT PROJECTS

Intersection improvement projects were identified based on input from CRIT staff, stakeholders, analysis of crash data, and from the findings of the 2013 CRIT Road Safety Assessment (RSA). These projects are shown graphically on **Figure 6** and summarized in **Table 2**. The Road Safety Assessment (RSA) conducted in 2013 provided schematic drawings of recommended improvements at a number of locations. The RSA is provided for reference in **Appendix A**.



Improvements proposed for 4th Avenue /Booth Road Intersection



Improvements proposed for Mohave Road/ Poston Road Intersection

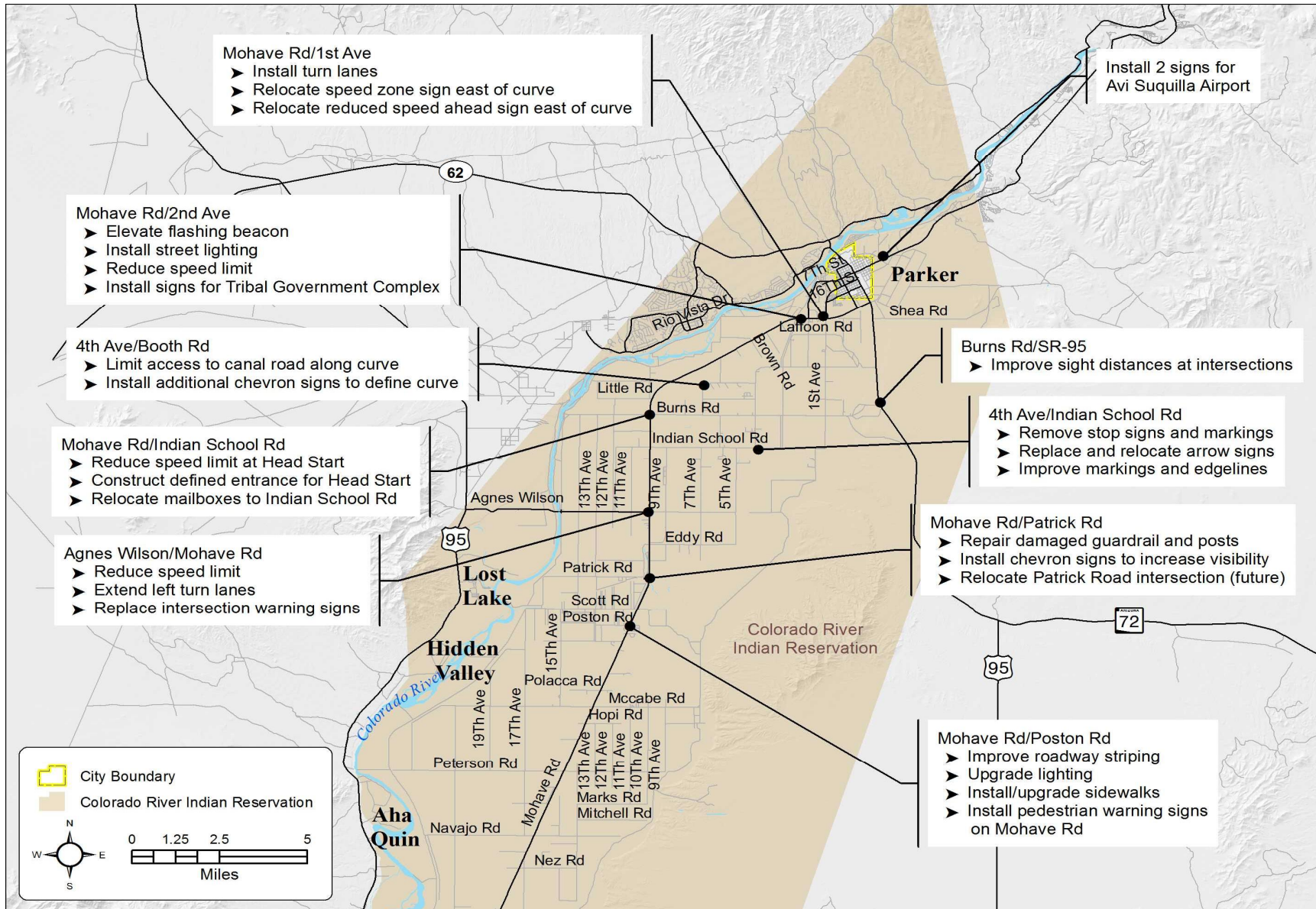


Figure 6 – Proposed Intersection Projects

Table 2 – Proposed Intersection Improvement Projects

Street Name / BIA Route Number	Cross Street	Project Length (miles)	BIA Road Functional Classification*	Existing Roadway or Site Conditions	Proposed Improvement	Total Cost (\$)**	Existing and/or Proposed Development Served by Road
Mohave Road (Rte 1)	1st Ave	N/A	2	Needs identified to install turn lanes, relocating speed zone sign east of curve, relocating reduced speed ahead sign east of curve	Construction of safety improvements	103,000	Commercial, residential, government and agricultural land uses.
Mohave Road (Rte 1)	2nd Ave	N/A	2	Needs identified to elevate flashing beacon, install street lighting, reduce speed limit, install signs for Tribal Headquarters	Construction of safety improvements	121,000	Commercial, residential, government and agricultural land uses.
Booth Rd (Rte 4)	4th Ave	N/A	5	Needs identified to limiting access to canal road along curve, Install additional chevron signs to define curve	Construction of safety improvements	12,000	Commercial, residential, government and agricultural land uses.
Mohave Road (Rte 1)	Indian School Rd	N/A	2	Needs identified to reduce speed limit at Head Start, construct defined entrance for Head Start, Relocate mailboxes to Indian School Rd	Construction of safety improvements	12,000	Head Start School, residences
Mohave Road (Rte 1)	Agnes Wilson Rd	N/A	2	Needs identified to reduce speed limit, extend left turn lanes, replace intersection warning signs	Construction of safety improvements	79,000	Commercial, residential, government and agricultural land uses.
Mohave Road (Rte 1)	Poston Rd	N/A	2	Needs identified to improve roadway striping, upgrade lighting, install/upgrade sidewalks, install pedestrian warning signs on Mohave Rd	Construction of safety improvements	256,000	Commercial developments

Street Name / BIA Route Number	Cross Street	Project Length (miles)	BIA Road Functional Classification*	Existing Roadway or Site Conditions	Proposed Improvement	Total Cost (\$)**	Existing and/or Proposed Development Served by Road
Mohave Road (Rte 1)	Patrick Rd	N/A	2	Needs identified to repair damaged guardrail and posts, install chevron signs to increase visibility.	Construction of safety improvements	27,000	Commercial, residential, government and agricultural land uses.
Indian School Rd (Rte 14)	4th Ave	N/A	4	Needs identified to remove stop signs and markings, replace and relocate arrow signs, improve markings and edgelines	Construction of safety improvements	18,000	
Burns Rd (Rte 10)	SR 95	N/A	4	This project is currently programmed in the Tribal TIP and the scope is to extend Burns Rd and construct turn lanes at SR 95**	Construction of safety improvements	85,000	
Airport Road (Rte 45)		N/A	5	Limited signage to direct travelers to the Airport	Informational signage	5,000	Avi Suquilla Airport

*Functional Class: 2= Rural minor arterial road; 4=Rural major collector road; 5=Rural local road

**Note: Burns Rd (Rte 10) cost estimate is from CRIT Tribal TIP

***Estimated costs are expressed in 2013 dollars and are general planning estimates. Actual costs for projects could vary at the time of implementation; therefore, when appropriate a detailed analysis should be performed on a case-by-case basis to determine actual project costs. The planning estimates include estimates for materials, and labor for design and construction. The cost estimates do not include right-of-way costs.

3.3 SAFETY PROJECTS

There are a number of areas that require on-going efforts to promote safety. These projects are summarized as follows:

3. Safety focused education campaign
4. Future CRIT Road Safety Assessment locations
5. Improved crash reporting procedures
6. Signing and striping projects
7. Other safety projects

3.3.1 SAFETY FOCUSED EDUCATION CAMPAIGN

A safety-focused educational campaign would incorporate safety into school curriculum at all levels of education. Elements of this project would be to develop age appropriate traffic safety education programs and then disseminate the materials and provide teacher training about the materials. Another focus area recommended is to try to procure funding for the successful Tribal Motor Vehicle Injury Prevention program, which is funded by the Center for Disease Control to the CRIT Police Department. This innovative program, which ends in September, 2014, includes focus on increasing adult seat belt use and reduction of adult Driving under the Influence (DUI) through a number of strategies, including events, media spots, videos and Public Service Announcements.

3.3.2 FUTURE ROAD SAFETY ASSESSMENT LOCATIONS

It is also recommended that further evaluation of high crash locations be conducted. Road Safety Assessments (RSAs) may be considered at the following locations:

- Mohave Road (MP 10-35)
- SR 95/ Moovalya Shopping Center
- California Avenue/Agency Road

3.3.3 CRASH REPORTING PROCEDURES

The Colorado River Indian Tribes Police Department has undertaken an extensive process to convert crash records to match the data field and requirements of the ADOT crash reporting format. This effort is important to help identify crash patterns and should be continued in the future.

3.3.4 SIGNING AND STRIPING PROJECTS

The proposed transportation plan includes a general project for signing and striping projects, because generally these improvements must be done on an as-needed basis. Key priorities are:

Speed control - An issue that was raised during stakeholder interviews was the need for additional speed limit signing and speed control on Mohave Road. The Bureau of Indian Affairs Road Maintenance Manual states that the posted speed limit will be established after an engineering and traffic investigation has been made in accordance with established traffic engineering practices. It also states that the BIA shall install and replace signs in accordance with the current edition of the Manual of Uniform Traffic Control Devices (MUTCD). Although the MUTCD does not have guidelines for speed limit sign spacing, a January 2009 recommendation from the National Committee on Uniform Traffic Control Devices, Regulatory Warning Signs Technical Advisory Committee indicated the following minimum spacing of reminder signs:



Solar Speed monitors can improve compliance with speed limits

- Rural roads 55 mph and higher- approximately every 10 miles
- Rural roads 45 and 50 mph- approximately every 2 miles.

Speed reminders such as solar speed signs can be used to remind drivers of their speed.

Striping – A key priority is provision of upgraded striping on Mohave Road, which is the highest volume road on the reservation. Improvements would include centerline and edge striping, and potentially installation of raised pavement markers, as the road is the main thoroughfare through the community. Rumble strips on shoulders can also potentially improve safety by alerting drivers that they are crossing into the shoulder area.

Replacement signing – Providing replacement signing is on-going process. Signing needs

observed during the RSA field review were:

- Booth Road, 1st Avenue to .8 miles east of 1st Avenue- bent sign needs replacement
- 2nd Avenue, Mohave Road to Booth Road – bent “Reduced Speed Ahead” sign needs replacement.
- 11th Avenue, Mark Road to Peterson Avenue – stop sign needs replacement
- 15th Avenue, Agnes Wilson Road to Burns Road – chevrons have graffiti markings
- Patrick Road/16th Avenue - Need street name sign for 16th Avenue
- Marks Road/11th Avenue - Yield Sign needs to be replaced or removed
- Replacement of advance street name signs, which was noted on Mohave Road during the 2013 CRIT Road Safety Assessment.
- Improved signage at a number of culvert and canal crossings.

Safety-related signing – Examples of safety related signs are those that remind drivers to use their seatbelts, not to text while driving, and not to drink and drive.

A sign inventory is a requirement for obtaining Highway Safety Improvement Program funds for signing projects, and would be valuable to determine specific sign replacement needs.

3.3.5 OTHER SAFETY PROJECTS

Canal safety improvements

There were a number of culvert and canal crossings that need improvements such as object markers, warning signs for narrow crossings, and in some cases, headwalls and possibly guardrails. The areas these canals or culverts are located are:

- Burns Road, 15th Avenue to 12th Avenue
- 7th Avenue, Agnes Wilson Road to Indian School Road
- 13th Avenue , Peterson Road to Hopi Road, and Patrick Road to Burns Road
- Agnes Wilson Road, Mohave Road to 7th Avenue
- Scott Road, Bridge 045 to Mohave Road
- McCabe Road, 23rd Avenue to Bridge H020
- Peterson Road, Mohave Road to 9th Avenue
- 6th Avenue, Gould Road to Mohave Road
- 14th Avenue, Bridge 040 to Marks Road
- Mohave Road- entire length should be evaluated for potential guardrails at canal crossings

Street lighting

Street lighting needs were identified at the following locations during the RSA:

- Mohave Road/Poston Road
- Mohave Road /2nd Avenue
- 1st Avenue from Mohave Road to the Hospital, along Mohave Road from 1st to 2nd Avenue, and from Mochen housing near Booth Road and 4th Avenue to the Tribal offices on 2nd Avenue

Tribal safety laws

Other safety projects include promoting the passage of two tribal laws:

1. **A primary seat belt law** - Primary seat belt laws allow law enforcement officers to ticket a driver or passenger for not wearing a seat belt, without any other traffic offense taking place. Other tribal nations, such as the Navajo Nation, have shown dramatic increases in seat belt usage and reduction in injuries and fatalities in motor vehicle crashes with such a law.
2. **A law lowering the definition of Driving under the Influence (DUI) to blood alcohol content (BAC) of 0.08 from the current BAC of 0.10.** Blood alcohol content is the concentration of alcohol in blood. This change would make the laws regarding DUI on the Colorado River Indian Tribes Reservation consistent with laws for the State of Arizona.



3.4 PAVEMENT MAINTENANCE AND RECONSTRUCTION PROJECTS

Road maintenance and reconstruction projects were a key focus of the development of the transportation plan. These projects provide road users with improved comfort, speed, and safety; and lower vehicle operating costs.

Two types of recommended activities, preventive maintenance and reconstruction, will provide the Colorado River Indian Tribes with the framework and general guidelines to follow when making decisions regarding the maintenance of pavement infrastructure.

Pavement maintenance and reconstruction project locations are shown in **Figure 7**.

3.4.1 RECOMMENDED RECONSTRUCTION PROJECTS

Recommended reconstruction projects were based on the findings of a field review that assessed pavement conditions on approximately 132 miles of roads, and input from stakeholders and the general public. The reconstruction projects assume a full-depth removal of the existing pavement including base course, scarifying and recompacting the existing subgrade (if weak it may need to be stabilized with lime or other treatments), and construction of a typical section which is 6" of aggregate base course and 4" of asphalt pavement. The pavement reconstruction projects assume that the pavement will be widened to meet BIA standards. This assumes the following roadway and shoulder widths by BIA functional class:

<u>BIA Class</u>	<u>Roadway Width (feet)</u>	<u>Shoulder Width (feet)</u>
Class 4-Rural Major Collector	32	4
Class 5 – Rural Local Roads	28	2

The widening of Class 4 roads will also provide a shoulder that can be used as a bicycle lane. Class 4 functionally classified roads are 1st Avenue, Indian School Road, McCabe Road, Navajo Road, Peterson Road, and Scott Road. Reconstruction projects are summarized in **Table 3**.

3.4.2 PREVENTIVE MAINTENANCE RECOMMENDATIONS

Preventive maintenance activities that should be considered by the Colorado River Indian Tribes include, but are not limited to, crack sealing, patching, and surface treatments. Surface treatments, such as chip seals, are typically applied on an interval basis and each treatment results in an increase in life of the pavement section. Specific type of treatment would typically be determined at a time closer to application based on existing conditions. Recommendations for preventive maintenance projects are summarized in **Table 3**.

Surface treatments such as chip seals are used primarily to slow the rate of deterioration and extend the life of the pavement. These treatments are most cost-effective when applied to a pavement section that is not significantly deteriorated and is mainly exhibiting climate-related distresses such as longitudinal cracking or weathering and raveling.

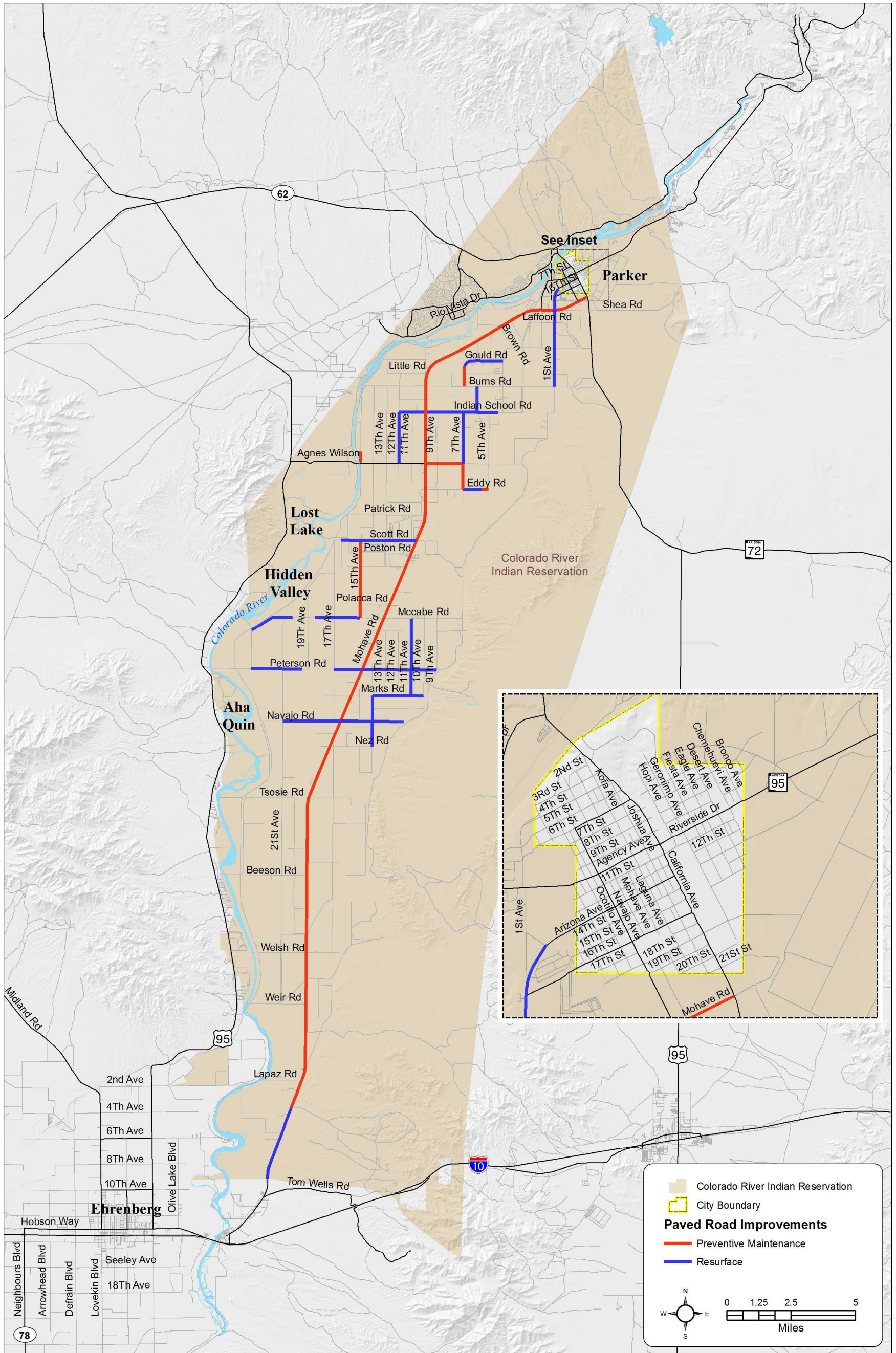


Figure 7 – Reconstruction and Preventive Maintenance Projects

Table 3 – Recommended Reconstruction Projects

Street Name / BIA Route Number	From	To	Project Length (miles)	BIA Road Functional Classification*	Existing Roadway or Site Conditions	Proposed Improvement	Total Project Cost (\$)**	Existing and/or Proposed Development Served by Road
11th Ave (Rte 15)	Agnes Wilson Rd	Indian School Rd	2.00	5	Paved road	Reconstruction	1,182,000	Agricultural, residential
11th Ave (Rte 15)	Mark Rd	Peterson Ave	1.00	5	Paved road	Reconstruction	591,000	Agricultural, residential
11th Ave (Rte15)	Peterson Ave	McCabe Rd	2.00	5	Paved road	Reconstruction	1,183,000	Agricultural, residential
14th Ave (Rte 117)	Bridge H040	Mark Rd	1.30	5	Paved road	Reconstruction	769,000	Agricultural, residential
14th Ave (Rte 117)	Nez Rd	Bridge H040	0.80	5	Paved road	Reconstruction	473,000	Agricultural, residential
1st Ave (Rte 3)	Burns Rd	Mohave Rd	3.00	4	Paved road	Reconstruction	2,028,000	Agricultural, residential
6th Ave (Rte 99)	Indian School Rd	Burns Rd	1.00	5	Paved road	Reconstruction	591,000	Agricultural, residential
Eddy Rd (Rte 20)	7th Ave	canal crossing	0.80	5	Paved road	Reconstruction	473,000	Agricultural, residential
Indian School Rd (Rte 14)	11th Ave	Mohave Rd	0.50	4	Paved road	Reconstruction	338,000	Residential, agricultural, and Head Start School

Street Name / BIA Route Number	From	To	Project Length (miles)	BIA Road Functional Classification*	Existing Roadway or Site Conditions	Proposed Improvement	Total Project Cost (\$)**	Existing and/or Proposed Development Served by Road
Indian School Rd (Rte 14)	Mohave Rd	4th Ave	3.00	4	Paved road	Reconstruction	2,028,000	Residential , agricultural, and Head Start School
Mark Rd (Rte 36)	0.3 miles west of 10th Ave	10th Ave	0.30	5	Paved road	Reconstruction	177,000	Agricultural, residential
McCabe Rd (Rte 30)	23rd Ave	Bridge H020	1.90	4	Paved road	Reconstruction	1,284,000	Agricultural, residential
Mohave Rd (Rte 1)	South CRIT reservation boundary	2.8 miles north of south boundary	2.80	2	Paved road	Reconstruction	2,128,000	Agricultural, residential
Navajo Rd (Rte 38)	0.3 miles west of rd end	east end of Navajo Rd	0.30	4	Paved road	Reconstruction	203,000	Agricultural, residential
Navajo Rd (Rte 38)	21st Ave	Mohave Rd	2.20	4	Paved road	Reconstruction	1,487,000	Agricultural, residential
Navajo Rd (Rte 38)	Bridge H039	0.3 miles west of road end	1.20	4	Paved road	Reconstruction	811,000	Agricultural, residential
Navajo Rd (Rte 38)	Mohave Rd	Bridge H039	1.00	4	Paved road	Reconstruction	676,000	Agricultural, residential

Street Name / BIA Route Number	From	To	Project Length (miles)	BIA Road Functional Classification*	Existing Roadway or Site Conditions	Proposed Improvement	Total Project Cost (\$)**	Existing and/or Proposed Development Served by Road
Peterson Rd (Rte 34)	Mohave Rd	9th Ave	2.90	4	Paved road	Reconstruction	1,960,000	Agricultural, residential
1st Ave (Rte 3)	Mohave Rd	W. Arizona Ave	0.60	4	Paved road	Reconstruction	406,000	Agricultural, residential
7th Ave (Rte 11)	Agnes Wilson Rd	Indian School Rd	2.00	5	Paved road	Reconstruction	1,183,000	Agricultural, residential
Gould Rd (Rte 6)	7th Ave	4th Ave	1.60	5	Paved road	Reconstruction	946,000	Agricultural, residential
Mark Rd (Rte 36)	14th Ave	0.3 miles west of 10th Ave	1.70	5	Paved road	Reconstruction	1,005,000	Agricultural, residential
Scott Rd (Rte 24)	16th Ave	Bridge H045	0.10	4	Paved road	Reconstruction	68,000	Agricultural, residential
Scott Rd (Rte 24)	Bridge H045	Mohave Rd	2.70	4	Paved road	Reconstruction	1,825,000	Agricultural, residential
Booth Rd (Rte 4)	Bridge H043	1st Ave	1.20	5	Paved road	Reconstruction	710,000	Agricultural, residential
McCabe Rd (Rte 30)	Bridge H020	Bridge H021	2.80	4	Paved road	Reconstruction	1,892,000	Agricultural, residential
Peterson Rd (Rte 34)	23rd Ave	canal west of 17th Ave	1.80	4	Paved road	Reconstruction	1,217,000	Agricultural, residential

Street Name / BIA Route Number	From	To	Project Length (miles)	BIA Road Functional Classification*	Existing Roadway or Site Conditions	Proposed Improvement	Total Project Cost (\$)**	Existing and/or Proposed Development Served by Road
Peterson Rd (Rte 34)	Bridge H024	Mohave Rd	0.90	4	Paved road	Reconstruction	608,000	Agricultural, residential

Table 4 – Recommended Preventive Maintenance Projects

Street Name	From	To	Length (miles)	BIA Functional Classification*	Existing Roadway or Site Conditions	Proposed Improvement	Total Project Cost (\$)	Existing and/or Proposed Development Served by Road
Mohave Road (Rte 1)	2.8 miles north of reservation boundary, south of La Paz Road	Bridge H008 - north of Weir Road (Tyson Wash Bridge)	5.20	2	Paved road	Road maintenance	824,000	Commercial, residential, government and agricultural land uses.
Mohave Road (Rte 1)	Agnes Wilson Road	Bridge H004	3.30	2	Paved road	Road maintenance	502,000	Commercial, residential, government and agricultural land uses.
Mohave Road (Rte 1)	Bridge H003	SR 95	2.20	2	Paved road	Road maintenance	335,000	Commercial, residential, government and agricultural land uses.
Mohave Road (Rte 1)	Bridge H004	Bridge H003	5.00	2	Paved road	Road maintenance	760,000	Commercial, residential, government and agricultural land uses.
Mohave Road (Rte 1)	Bridge H006	Bridge H005	1.00	2	Paved road	Road maintenance	152,000	Commercial, residential, government and agricultural land uses.
Mohave Road (Rte 1)	Bridge H008 (Tyson Wash Bridge)	Canal Bridge H007	1.80	2	Paved road	Road maintenance	274,000	Commercial, residential, government and agricultural land uses.

Street Name	From	To	Length (miles)	BIA Functional Classification*	Existing Roadway or Site Conditions	Proposed Improvement	Total Project Cost (\$)	Existing and/or Proposed Development Served by Road
Mohave Road (Rte 1)	Canal Bridge H007	Just south of Beeson Road	2.00	2	Paved road	Road maintenance	304,000	Commercial, residential, government and agricultural land uses.
Mohave Road (Rte 1)	Eddy Road	Agnes Wilson Road	1.00	2	Paved road	Road maintenance	152,000	Commercial, residential, government and agricultural land uses.
Mohave Road (Rte 1)	Just south of Beeson Road	Peterson Road	7.70	2	Paved road	Road maintenance	1,171,000	Commercial, residential, government and agricultural land uses.
Mohave Road (Rte 1)	Peterson Road	Bridge H006 (Patrick Road is just immediately north of the bridge)	7.40	2	Paved road	Road maintenance	1,125,000	Commercial, residential, government and agricultural land uses.
Eddy Road (Rte 20)	canal crossing	5th Avenue	0.10	5	Paved road	Road maintenance	10,000	Agricultural, residential
15th Avenue (Rte 19)	Agnes Wilson Road	0.1 mi north of Agnes Wilson Road	0.10	5	Paved road	Road maintenance	15,000	Agricultural, residential
15th Avenue (Rte 19)	McCabe Road	Scott Road	3.00	5	Paved road	Road maintenance	456,000	Agricultural, residential

Street Name	From	To	Length (miles)	BIA Functional Classification*	Existing Roadway or Site Conditions	Proposed Improvement	Total Project Cost (\$)	Existing and/or Proposed Development Served by Road
7th Avenue (Rte 11)	Burns Road	Gould Road	0.80	5	Paved road	Road maintenance	122,000	Agricultural, residential
7th Avenue (Rte 11)	Eddy Road	Agnes Wilson Road	1.00	5	Paved road	Road maintenance	139,000	Agricultural, residential
Agnes Wilson Road (Rte 18)	Mohave Road	7th Avenue	1.50	4	Paved road	Road maintenance	228,000	Agricultural, residential

*Functional Class: 2= Rural minor arterial road; 4=Rural major collector road; 5=Rural local road

** Estimated costs are expressed in 2013 dollars and are general planning estimates. Actual costs for projects could vary at the time of implementation; therefore, when appropriate a detailed analysis should be performed on a case-by-case basis to determine actual project costs. The planning estimates include estimates for materials, and labor for design and construction. The cost estimates do not include right-of-way costs.

3.5 TRANSIT PROJECTS

The development of a transit system is an important need for the Colorado River Indian Tribe. The need for transit service was demonstrated based on the findings of two surveys, and analysis using the procedures in Transit Cooperative Research Program Report 161 – Methods for Forecasting Demand and Quantifying the Need for Rural Passenger Transportation: Final Workbook. Origins and destinations for the transit system have been identified through public input, surveys, and a review of land uses.

Work is currently underway under a separate Federal Transit Administration contract to develop a detailed implementation plan for the transit system, with recommended routes and anticipated operating costs and revenues.

3.6 AVIATION PROJECTS

Aviation projects were developed as part of the Avi Suquilla Airport Master Plan Update completed in 2013. The Airport Capital Improvement Plan from the Airport Master Plan Update is shown in **Table 5**. Maps of the proposed improvements are shown in **Appendix C**. Projects related to the road system serving the airport include:

- Construct an all-weather perimeter road around the Airport.
- Provide signage upgrades and improve aircraft storage area.
- Drainage improvements and fire water line on Airport Road, including re-paving
- Parking lot construction as part of the terminal, ARFF Building, hangar and parking lot Construction project
- Paving improvements to runways, apron areas, perimeter road over time

As the perimeter road is developed, consideration should be given to adding it to the Tribal Transportation Inventory. It should be noted that the criteria for the short term, medium term and long term projects in the Airport Master Plan Update are based on activity milestones for each planning horizon; those are certain levels of based aircraft and annual operations. For this reason, these projects are prioritized separately from other transportation projects.

Other recommended projects are funding for a van to serve airport passengers, or coordination with a future transit system, perhaps on a demand-responsive basis.

Table 5 – Avi Suquilla Airport Capital Improvement Plan

Time Frame	Project Description	Estimated Total Cost (\$)*
Short Term	Airfield Pavement Preservation	800,000
	Runway 1-19 Easterly Erosion Control	562,000
	Drainage Improvements/Fire Water Line	2,150,000
	Construct parallel Taxiway C	2,100,000
	Runway 1-19 Westerly Erosion Control	562,000
	Eastern Apron Expansion – Phase 1	2,471,000
	Signage Upgrades and Develop Aircraft Storage Area	54,000
	Runway 1-19, Taxiway A and Taxiway B Crack seal	411,000
	GA Apron Pavement Preservation	518,000
	Construct Perimeter Road	1,725,000
Intermediate Term	Eastern Apron Expansion – Phase 2	1,364,000
	Runway 1-19 Overlay	1,764,000
	Transient Apron Overlay	520,000
	Northern Apron Expansion- Phase 1	1,821,000
	Taxiway C Crack Seal	49,000
	Taxiways A and B Overlay	1,676,000
	Northern Apron Expansion- Phase 2	900,000
	Terminal, ARFF Building, Hangar and Parking Lot Construction	3,290,000
	Crack Seal – Runway 1-19, Taxiways A and B, Apron and Perimeter Road	377,000
	Seal Coat-Taxiway C and North Apron Expansion	224,000
Long Term	Southern Apron Expansion- Phase 1	1,500,000
	Southern Apron Expansion- Phase 2	1,714,000
	Seal Coat - Runway 1-19, Taxiways A and B, Apron and Perimeter Road	1,351,000
	Crack Seal - Taxiway C and North Apron Expansion	56,000
	Acquire Land for Southern Runway Extension	875,000

Time Frame	Project Description	Estimated Total Cost (\$)*
	Runway 1-19 Southern Extension	1,734,000
	Crack Seal- Runway 1-19, Taxiways A and B, Apron and Perimeter Road	377,000
	Seal Coat - Taxiway C and North Apron Expansion	224,000
	Acquire Land for Northern Runway Extension	625,000
	Runway 1-19 Northern Extension	1,848,000
	Seal Coat - Runway 1-19, Taxiways A and B, Apron and Perimeter Road	1,351,000
	Crack Seal- Taxiway C and North Apron Expansion	56,000
	Acquire land east of existing property line for future development	2,200,000

Source: Avi Suquilla Airport Master Plan Update, June 2013

* Costs were excerpted from Ava Suquilla Airport Master Plan Update, June 2013

3.7 BRIDGE IMPROVEMENT PROJECTS

Bridge projects were developed based on input from the Bureau of Indian Affairs (BIA) Western Regional Office (WRO). Information on project descriptions, project length, and project costs were obtained from the *Indian Reservation Road Program Bridge Management System Structural Inventory and Appraisal Sheets*. Bridges are inspected every two years and are assigned a numerical sufficiency rating. The sufficiency rating (SR) is a numerical rating of a bridge based on its structural adequacy and safety, essentiality for public use, and its serviceability and functional obsolescence for the width, approach roadway, and traffic capacity. It is a rating tool developed by the FHWA for prioritizing bridges for funding. The SR of a bridge varies from 0 (very poor) to 100 (very good). Bridges with an SR of 80 or less are eligible for rehabilitation, and bridges with an SR less than 50 are eligible for replacement or rehabilitation. Twelve bridges have sufficiency ratings below 80, indicating the need to rehabilitate or replace them. Proposed bridge projects are shown graphically on **Figure 8**, and are summarized in **Table 6**. All of these projects will improve safety.

A key bridge improvement project is replacement of the bridge on Mohave Road (Rte 1) at Tyson Wash. Tyson Wash is one of the larger washes that enter the Colorado River. For this reason, and because it crosses Mohave Road, the major roadway through the CRIT Reservation, this bridge improvement is a priority. Based on correspondence with the BIA, Plans, Specification and Estimates (PS&E) documents have been prepared and submitted to FHWA for the replacement of Mojave Road Bridge H008 over Tyson Wash, using BIA - Tribal Bridge Program (TBP) funds at an estimated cost of \$9,465,000. Construction funding has not yet been approved / received for this bridge replacement project due to the reduction of BIA bridge replacement funding from \$13 million under Safety-LU, to \$9 million under MAP-21. BIA is working with FHWA to have TBP funding set aside for this project over the next three years, so construction can begin in FY 2016. This project is shown as a short range project in this plan.

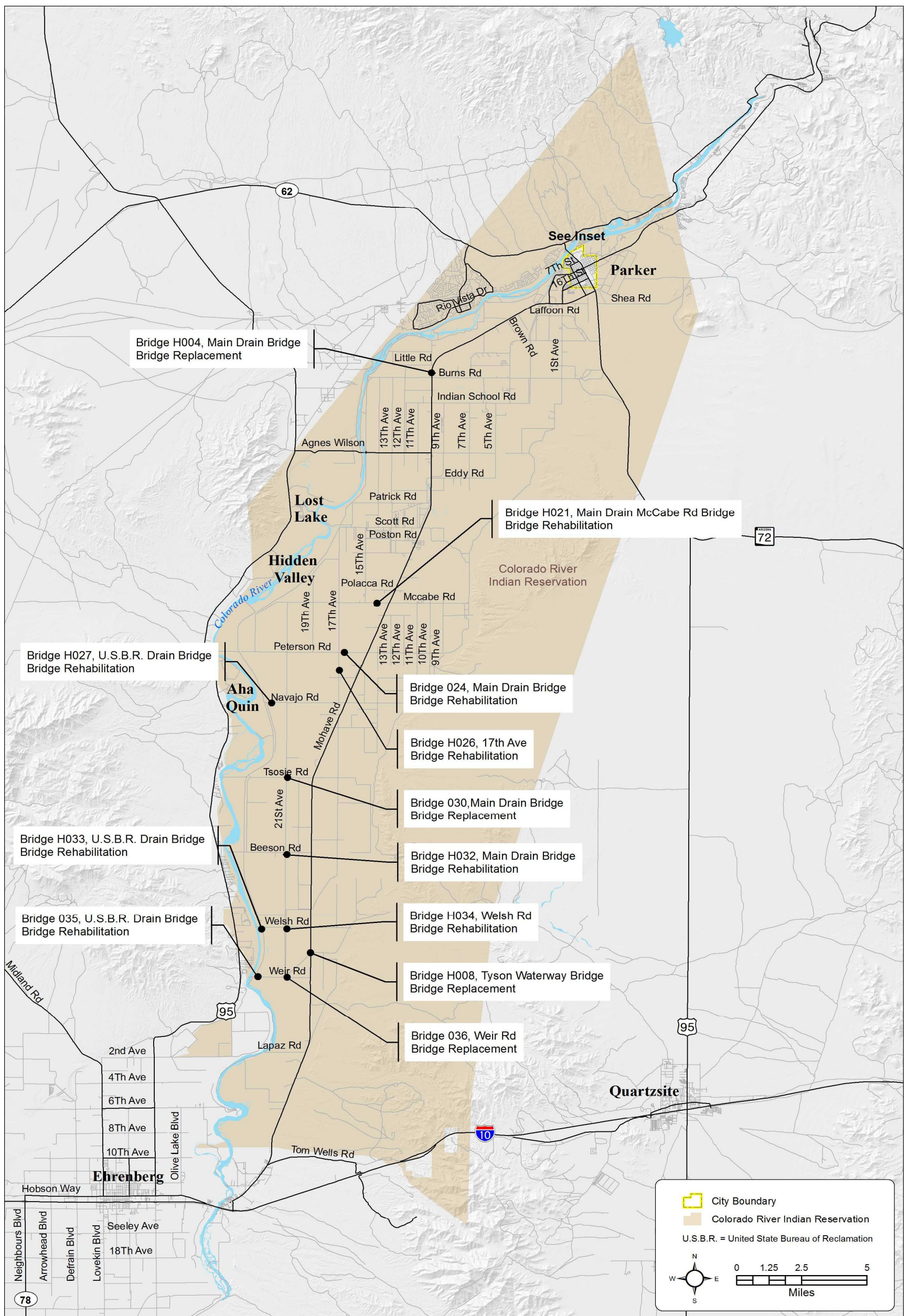


Figure 8 – Proposed Bridge Projects

Table 6 – Proposed Bridge Replacement or Rehabilitation Projects

Street Name / BIA Route Number	Location - Bridge Number	Project Length (miles)	BIA Road Functional Classification*	Existing Roadway or Site Conditions – Bridge Sufficiency Rating	Proposed Improvement	Total Cost (\$)**	Existing and/or Proposed Development Served by Road
Mohave Road (Rte 1) at Tyson Wash	H008	0.093	2	Sufficiency rating - 73.3	Bridge Replacement	9,465,000**	serves multiple land uses
Mohave Road (Rte 1)	H004	0.014	2	Sufficiency rating - 46.5	Bridge Replacement	120,000	serves multiple land uses
17th Avenue (Rte 21)	H026	0.014	4	Sufficiency rating - 68.0	Bridge Rehabilitation	79,000	Agricultural
McCabe Road (Rte 30)	H021	0.017	4	Sufficiency rating - 56.8	Bridge Rehabilitation	74,000	Agricultural
Peterson Road (Rte 34)	H024	0.014	4	Sufficiency rating - 25.9	Bridge Rehabilitation	82,000	Agricultural
Navajo Road (Rte 38)	H027	0.011	4	Sufficiency rating - 60.0	Bridge Rehabilitation	56,000	Agricultural
Tsosie Road (Rte 44)	H030	0.017	4	Sufficiency rating - 47.8	Bridge Replacement	89,000	Agricultural
Beeson Road (Rte 50)	H032	0.015	5	Sufficiency rating - 49.8	Bridge Rehabilitation	40,000	Agricultural
Welsh Road (Rte 56)	H033	0.014	5	Sufficiency rating – 54.0	Bridge Rehabilitation	167,000	Agricultural

Street Name / BIA Route Number	Location - Bridge Number	Project Length (miles)	BIA Road Functional Classification*	Existing Roadway or Site Conditions – Bridge Sufficiency Rating	Proposed Improvement	Total Cost (\$)**	Existing and/or Proposed Development Served by Road
Welsh Road (Rte 56)	H034	0.014	5	Sufficiency rating – 59.5	Bridge Rehabilitation	115,000	Agricultural
Weir Road (Rte 60)	H035	0.011	5	Sufficiency rating – 58.5	Bridge Rehabilitation	98,000	Agricultural
Weir Road (Rte 60)	H036	0.019	5	Sufficiency rating – 47.0	Bridge Replacement	600,000	Agricultural

* Functional Class: 2= Rural minor arterial road; 4=Rural major collector road; 5=Rural local road

**Per 10/9/13 e-mail from Bob Maxwell, BIA-WRO Regional Roads Planner, they are working with FHWA to have Tribal Bridge Program funds set aside for this project over the next three years, so construction can begin in FY 2016

***Project costs were developed by the Bureau of Indian Affairs.

3.8 PAVING DIRT OR GRAVEL ROAD PROJECTS

The provision of a paved road surface results in a number of benefits, including reduced levels of dust, reduced vehicle maintenance costs, and improved safety. **Figure 9** summarizes recommended paving projects on dirt or gravel roads. The cost estimates for these projects assume that the roads will be paved with asphalt to cover a 24 foot width, which is the Bureau of Indian Affairs (BIA) minimum subdivision street width for an uncurbed local street and accommodates one travel lane in each direction. The project locations are summarized in **Table 7**.

Some of these roads are not currently on the Tribal Transportation Inventory and it is recommended that they be added to the Tribal Transportation Inventory and functionally classified. Additions to the Tribal Transportation Inventory are discussed in **Chapter 6**. BIA route numbers are noted for roads that are part of the Tribal Transportation Inventory.



Gravel road on the Colorado River Indian Tribes Reservation

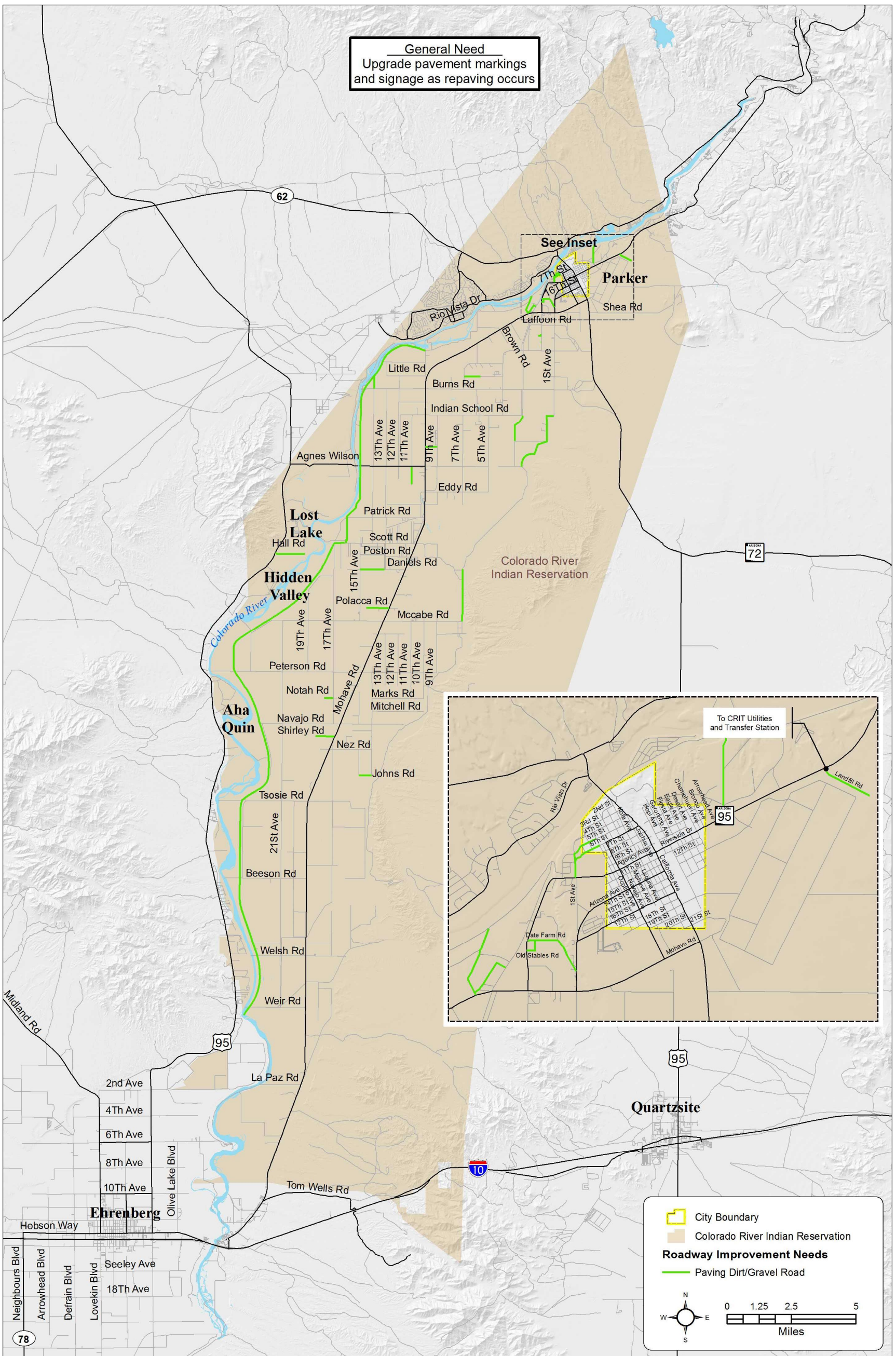


Figure 9 – Locations for Paving Projects

Table 7 – Proposed Paving Projects on Dirt or Gravel Roads

Road Name / Route Number	From	To	Length (miles)	Existing Roadway or Site Conditions	BIA Road Functional Classification*	Total Project Cost (\$)***	Existing or Proposed Development served by Road
5th Street	Quartz Ave	Roosevelt St	0.23	Unpaved	Not classified	175,000	Provides neighborhood access to Agency Rd
6th Street	Quartz Ave	Roosevelt St	0.17	Unpaved	Not classified	129,000	Provides neighborhood access to Agency Rd
11th Avenue (Rte 15)	Agnes Wilson Rd	south end of road	0.5	Unpaved	5	379,000	Provides neighborhood access (two homes)
14th Avenue (Rte 117)	Burns Rd	Levee Rd	0.5	Unpaved	5	379,000	Extends 14th Ave to end
14th Avenue (Rte 117)	Patrick Road	White Road	0.5	Unpaved	5	379,000	Extends 14th Ave to Levee Rd (Serves two homes/farms)
15th Avenue (Rte 19)	Agnes Wilson Rd	canal north of Scott Rd	3.32	Unpaved	5	2,511,000	Provides better access to agricultural area
7th Ave (Rte 11)	McCabe Rd	Scott Rd	3.00	Unpaved	5	2,270,000	Provides recreational access and access to gravel pit.
Daniels Rd (Rte 260)	Mohave Rd	Canal	0.66	Unpaved	5	500,000	Serves agricultural area, adjacent to canal
Date Farm (Rte 303)	2nd Ave	First Ave	0.68	Unpaved	3	515,000	Residential access
Hall Rd	US 95	east end of road	1.15	Unpaved	Not classified	870,000	Provides better access to the Colorado River - on the California side of the Reservation
Johns Rd (Rte 42)	15th Ave	14th Ave	0.49	Unpaved	5	371,000	Serves residences and needed for emergency access

Road Name / Route Number	From	To	Length (miles)	Existing Roadway or Site Conditions	BIA Road Functional Classification*	Total Project Cost (\$) **	Existing or Proposed Development served by Road
Levee Rd	Dam	Scott Road	21.2	Unpaved	Not classified	16,037,000	Provides access to east side of Colorado River
Levee Rd	15th Ave	End of Unpaved portion of Levee Road	7.71	Unpaved	Not classified	5,833,000	Provides access to east side of Colorado River
Levee Rd	unnamed road	Bridge at canal/end of unpaved portion	1.21	Unpaved	Not classified	915,000	Provides access to east side of Colorado River
Little Rd (Rte 8)	7th Ave	Mo Chem	1.00	Unpaved	5	757,000	Serves Mo-Chem neighborhood - approximately 50 homes
Mitchell Rd (Rte 360)	13 th Ave	Canal	0.76	Unpaved	5	575,000	Extends paved portion of Mitchell Rd to canal
Notah Rd (Rte 340)	Canal	17th Ave	0.41	Unpaved	5	311,000	Serves 1 home
Polacca Rd (Rte 280)	0.39 miles west of Mohave Rd	Mohave Rd	0.39	Unpaved	5	296,000	Serves three homes and agricultural areas
3rd Avenue (Rte 55)	Rd to Ahakhav Tribal Preserve	unnamed canal path	0.54	Unpaved	5	408,956	Serves Rodeo Subdivision area - approximately 9 homes

Road Name / Route Number	From	To	Length (miles)	Existing Roadway or Site Conditions	BIA Road Functional Classification*	Total Project Cost (\$) **	Existing or Proposed Development served by Road
Scott Rd (Rte 24)	Levee Rd	16th Ave	0.48	Unpaved	4	364,000	Extends the paved portion of Scott Road to Levee Road
Shirley Rd (Rte 380)	Canal	Mohave Rd	0.79	Unpaved	5	598,000	Serves three homes
Mission Subdivision Street	2 nd Avenue	West end of road	0.1	Unpaved	Not classified	76,504	Serves Mission Subdivision - approximately 6 homes
Appaloosa subdivision streets	Unnamed roads	N/A	0.6	Unpaved	Not classified	454,000	Serves Appaloosa Subdivision - approximately 30 homes
Landfill Rd	US 95	Landfill	1.66	Unpaved	Not classified	1,256,000	serves Landfill
Kudo Farms Rd	1st Avenue	Kudo Farms	2.53	Unpaved	Not classified	1,914,000	Serves Farm and an undetermined number of homes
Service Rd	Walmart	BlueWater Resort and Casino	0.84	Unpaved	Not classified	636,000	Provides alternative access between Wal-Mart and BlueWater Resort area
Landfill Rd to CRIT Utilities and Transfer Station	SR 95	Utilities and Transfer Station	0.55	Unpaved	Not classified	417,000	Provides better access to Utilities and Transfer station
Old Stables Rd	Date Farm Rd	2nd Ave	0.16	Unpaved	Not classified	122,000	Provides access to neighborhood area - approximately 9 homes

*Functional Class: 2= Rural minor arterial road; 4=Rural major collector road; 5=Rural local road

** Estimated costs are expressed in 2013 dollars and are general planning estimates. Actual costs for projects could vary at the time of implementation; therefore, when appropriate a detailed analysis should be performed on a case-by-case basis to determine actual project costs. The planning estimates include estimates for materials, and labor for design and construction. The cost estimates do not include right-of-way costs.

3.9 OTHER TRANSPORTATION PROJECTS

Other transportation projects were identified during the course of the project, which included:

- Paving needs for parking areas for community facilities;
- Equipment needs for the Police and Fire Departments, including items for temporary traffic control, such as variable message signs; and
- Maintenance equipment needs.

4. Project Prioritization and Plan of Improvements

The transportation improvement projects that were identified in **Chapter 3** will address critical needs through 2030 and beyond. These projects were further prioritized into the following categories:

Short-range projects (FY 2018-2022) – In general, short-range projects are those needed to address current needs and deficiencies, for which funding can reasonably be identified. Short range projects also include currently programmed projects in the 2012 Tribal Transportation Improvement Plan (TTIP).

Mid-range projects (FY 2023-2027) – These are higher cost projects that have higher priorities due to safety or connectivity. Mid-range projects also include projects that can be linked to projects currently programmed or planned in the mid-range time frame.

Long-range projects (2028-2038 and beyond) – These are higher cost projects that may need additional lead time to obtain funding, or can be linked to long-range projects currently planned.

Project phasing was accomplished through a process summarized as follows:

- Develop project cost estimates for all projects
- Estimate short, mid-, and long term funding
- Identify priority project categories:
 - Pavement maintenance and rehabilitation projects
 - Intersection projects
 - Safety projects
 - Bridge projects
- Develop project priority criteria for each category of project
- Rank projects within each category

The projects in each category were assigned to short, mid- or long range programs. The prioritization was reviewed at a workshop with CRIT and ADOT staff in November 2013.

Aviation projects are summarized separately on pages 40 and 41, and have implementation periods that are based on meeting activity milestones rather than specific years.

4.1 PROJECT PRIORITIZATION – SHORT-RANGE PROJECTS

Short range transportation projects are those identified for implementation in the time frame 2018-2022. It would succeed the current Tribal Transportation Improvement Program, which runs from 2013-2017. Should additional funding be available in the current Tribal Transportation Improvement Plan, some of these projects could potentially be implemented sooner.

It should be noted that the Bridge Replacement project on Mohave Road at Tyson Wash (Bridge H008) is shown in the short range program, although funds may become available to construct this bridge sooner.

The total estimated cost of the short range program\$16.625M, which is divided into the following project categories:

<u>Project Type</u>	<u>Cost (\$)</u>
Resurfacing projects	4,241,000
Preventive maintenance projects	1,323,000
Bridge replacement or rehabilitation projects	9,547,000
Intersection Projects	274,000
Paving Dirt and Gravel road projects	454,000
Pedestrian projects	436,000
Other Projects	350,000
<u>Total</u>	<u>16,625,000</u>

Funding assumptions for the short range program are as follows:

<u>Funding Source</u>	<u>Estimated funding for 5-year period (\$)</u>
BIA Construction funds (through Tribal Transportation Program Formula)	5,200,000
BIA Bridge Program	9,465,000
Tribal Transportation Safety Program	150,000
Highway Safety Improvement Program	1,000,000
Other sources of funds (Surface Transportation Program, Tribal funds, other non-tribal sources)	810,000
<u>Total</u>	<u>16,625,000</u>

Funding program sources are described in **Chapter 5**.

Projects on specific roads, intersections, or bridges are shown graphically in **Figure 10**. This figure also shows projects that are currently programmed in the Tribal Transportation Improvement Program (FY 2013-2017). **Table 8** also summarizes the short-range projects.

Table 8 – Short-Range Projects

Street Name / BIA Route Number	From	To	Project Length (miles)	BIA Road Functional Classification*	Existing Roadway or Site Conditions	Proposed Improvement	Total Project Cost (\$)	Existing and/or Proposed Development Served by Road
Resurfacing Projects								
14th Ave (Rte 117)	Nez Rd	Bridge H040	0.80	5	Paved road	Resurfacing Construction	473,000	Agricultural, residential
6th Ave (Rte 99)	Indian School Rd	Burns Rd	1.00	5	Paved road	Resurfacing Construction	591,000	Agricultural, residential
Eddy Rd (Rte 20)	7th Ave	canal crossing	0.80	5	Paved road	Resurfacing Construction	473,000	Agricultural, residential
Indian School Rd (Rte 14)	Mohave Rd	4th Ave	3.00	4	Paved road	Resurfacing Construction	2,028,000	Residential , agricultural, and Head Start School
Navajo Rd (Rte 38)	Mohave Rd	Bridge H039	1.00	4	Paved road	Resurfacing Construction	676,000	Agricultural, residential
Preventive Maintenance Projects								
Mohave Road (Rte 1)	Bridge H003	SR 95	2.20	2	Paved road	Road maintenance	335,000	Commercial, residential, government and agricultural land uses.
Mohave Road (Rte 1)	Bridge H004	Bridge H003	5.00	2	Paved road	Road maintenance	760,000	Commercial, residential, government and agricultural land uses.
Agnes Wilson Road (Rte 18)	Mohave Road	7th Avenue	1.50	5	Paved road	Road maintenance	228,000	Agricultural, residential
Bridge Replacement or Rehabilitation								
Mohave Road (Rte 1) at Tyson Wash	H008	N/A	0.093	2	Bridge Sufficiency rating - 73.3	Bridge Replacement	9,465,000**	serves multiple land uses
Peterson Road (Rte 34)	H024	N/A	0.014	4	Bridge Sufficiency rating - 25.9	Bridge Rehabilitation	82,000	Agricultural
Intersection Projects								
Mohave Road (Rte 1)	2nd Ave	N/A	N/A	2	Needs identified to elevate flashing beacon, install street lighting, reduce speed limit, install signs for Tribal Headquarters	Construction of safety improvements	121,000	Commercial, residential, government and agricultural land uses.
Booth Rd (Rte 4)	4th Ave	N/A	N/A	5	Needs identified to limiting access to canal road along curve, Install additional chevron signs to define curve	Construction of safety improvements	12,000	Commercial, residential, government and agricultural land uses.

Street Name / BIA Route Number	From	To	Project Length (miles)	BIA Road Functional Classification*	Existing Roadway or Site Conditions	Proposed Improvement	Total Project Cost (\$)	Existing and/or Proposed Development Served by Road
Mohave Road (Rte 1)	Indian School Rd	N/A	N/A	2	Needs identified to reduce speed limit at Head Start, construct defined entrance for Head Start, Relocate mailboxes to Indian School Rd	Construction of safety improvements	12,000	Head Start School, residences
Mohave Road (Rte 1)	Agnes Wilson Rd	N/A	N/A	2	Needs identified to reduce speed limit, extend left turn lanes, replace intersection warning signs	Construction of safety improvements	79,000	Commercial, residential, government and agricultural land uses.
Mohave Road (Rte 1)	Patrick Rd	N/A	N/A	2	Needs identified to repair damaged guardrail and posts, install chevron signs to increase visibility.	Construction of safety improvements	27,000	Commercial, residential, government and agricultural land uses.
Indian School Rd (Rte 14)	4th Ave	N/A	N/A	4	Needs identified to remove stop signs and markings, replace and relocate arrow signs, improve markings and edgelines	Construction of safety improvements	18,000	
State Route 95 (Rte 95)	Airport Road	N/A	N/A	2	Paved Road	Informational signage	5,000	Avi Suquilla Airport
Paving Dirt and Gravel Roads projects								
Appaloosa subdivision streets	Unnamed community roads that connect to 9th Ave	N/A	0.6	Unclassified	Unpaved roads	Paving	454,000	Serves Appaloosa Subdivision - approximately 30 homes
Pedestrian Projects								
1st Ave (Rte 3)	Agency Ave	16th Street	0.66	4	Paved road	Sidewalks	436,000	Office, business, residential land uses
16 th Street	1st Ave	0.06 miles west of Reata Ave	0.34	Unclassified	Paved road	Sidewalks		residences
Other Transportation Projects								
Sign Replacement Program	Various locations	N/A	N/A	N/A	Various	Signing	50,000	Various
Educational programs	N/A	N/A	N/A	N/A	N/A	Safety education	50,000	Applies Reservation-wide
Street lighting projects	Various locations	N/A	N/A	N/A	To be determined	Street lighting	50,000	This is a lump sum that would be used to improve street lighting on an as-needed basis
Canal crossing improvements	Various locations	N/A	N/A	N/A	To be determined	Safety improvements	50,000	This is a lump sum that would be used to improve safety at canal crossings on an as-needed basis

Street Name / BIA Route Number	From	To	Project Length (miles)	BIA Road Functional Classification*	Existing Roadway or Site Conditions	Proposed Improvement	Total Project Cost (\$)	Existing and/or Proposed Development Served by Road
Parking lot repaving for public facilities	Various locations	N/A	N/A	N/A	To be determined	Paving	25,000	This is a lump sum that would be used to address public facility paving needs.
Maintenance equipment	Specific equipment to be determined	N/A	N/A	N/A	N/A	Maintenance	50,000	This is to reserve funds to purchase maintenance equipment
Temporary traffic control equipment – portable variable message signs	N/A	N/A	N/A	N/A	N/A	Traffic control	25,000	To be used at various locations
Speed control – solar speed monitors (2)	Mohave Road – specific locations to be determined	N/A	N/A	2	This would fund solar speed monitors on Mohave Road	Safety	50,000	Speed control – solar speed monitors (2)
Total, Short range projects							\$16,625,000	

*Functional Class: 2=Rural minor arterial road; 4=Rural major collector road; 5=Rural local road

**Note: This bridge is planned to be constructed starting in FY 2016

4.2

4.3 PROJECT PHASING – MID-RANGE PROJECTS

Mid-range projects are shown in **Figure 11** and in **Table 9**. Mid-range projects are those that may be implemented in the time from FY 2023-2027. These projects would need committed funds in order to be built.

Mid-range projects total \$7,717,000. The program comprises the following project types:

<u>Project Type</u>	<u>Cost (\$)</u>
Resurfacing projects	3,447,000
Preventive maintenance projects	1,371,000
Bridge replacement or rehabilitation projects	1,438,000
Intersection Projects	256,000
Paving Dirt and Gravel road projects	546,000
Pedestrian projects	309,000
Other Projects	350,000
<u>Total</u>	<u>7,717,000</u>

Funding assumptions for the mid-range program are as follows:

<u>Funding Source</u>	<u>Estimated funding for 5-year period (\$)</u>
BIA Construction funds (through Tribal Transportation Program Formula)	5,200,000
BIA Bridge Program	150,000
Tribal Transportation Safety Program	150,000
Highway Safety Improvement Program	1,000,000
Other sources of funds (Surface Transportation Program, Tribal funds, other non-tribal sources)	1,217,000
<u>Total</u>	<u>7,717,000</u>

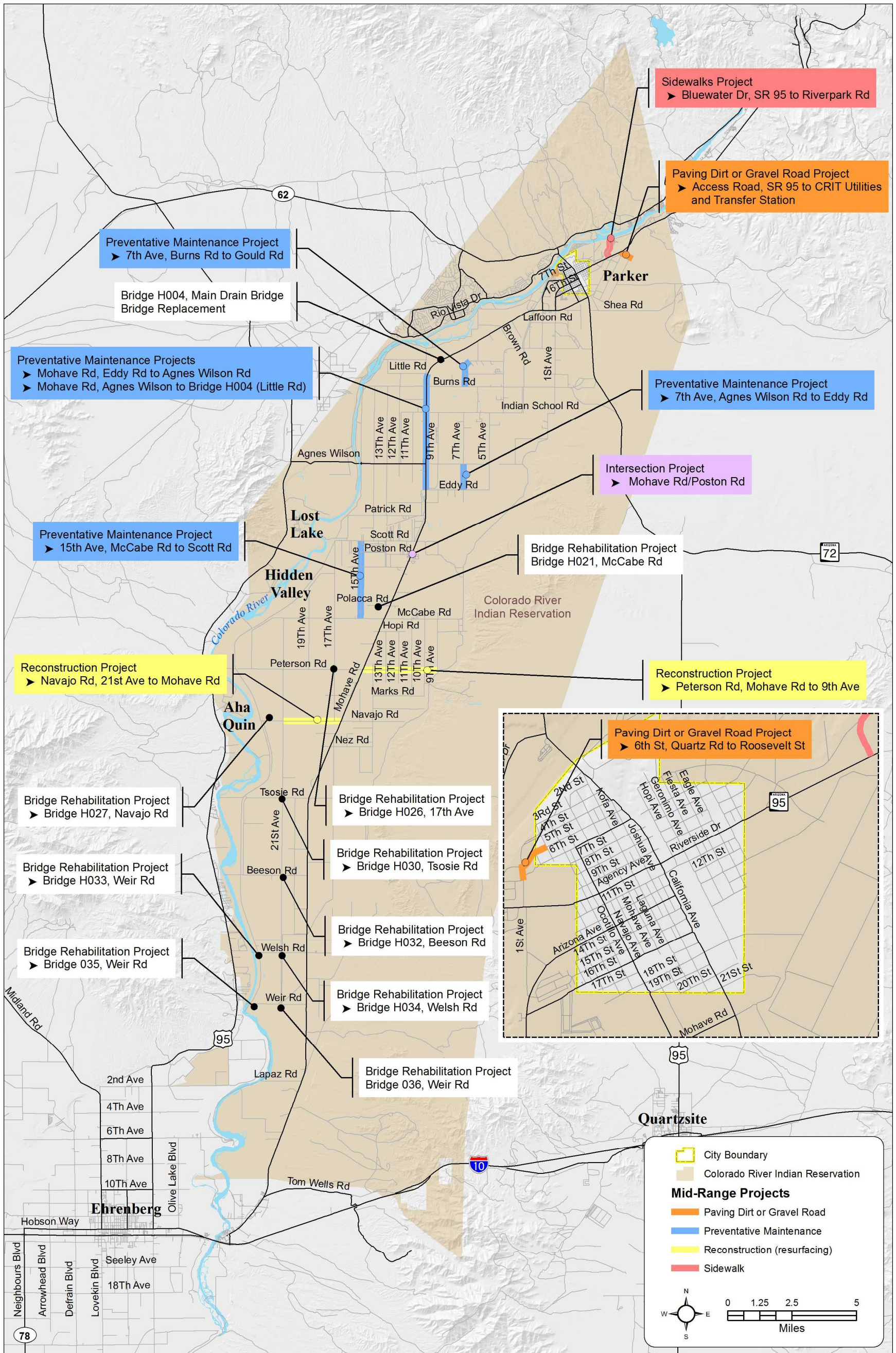


Figure 11 – Mid-Range Projects

Table 9 – Mid-Range Projects

Street Name / BIA Route Number	From	To	Project Length (miles)	BIA Road Functional Classification	Existing Roadway or Site Conditions	Proposed Improvement	Total Project Cost (\$)	Existing and/or Proposed Development Served by Road
Resurfacing Projects								
Peterson Rd (Rte 34)	Mohave Rd	9th Ave	2.90	4	Paved road	Resurfacing Construction	1,960,000	Agricultural, residential
Navajo Rd (Rte 38)	21st Ave	Mohave Rd	2.20	4	Paved road	Resurfacing Construction	1,487,000	Agricultural, residential
Preventive Maintenance Projects								
Mohave Road (Rte 1)	Agnes Wilson Road	Bridge H004	3.30	2	Paved road	Road maintenance	502,000	Commercial, residential, government and agricultural land uses.
Mohave Road (Rte 1)	Eddy Road	Agnes Wilson Road	1.00	2	Paved road	Road maintenance	152,000	Commercial, residential, government and agricultural land uses.
7th Avenue (Rte 11)	Burns Road	Gould Road	0.80	5	Paved road	Road maintenance	122,000	Agricultural, residential
7th Avenue (Rte 11)	Eddy Road	Agnes Wilson Road	1.00	5	Paved road	Road maintenance	139,000	Agricultural, residential
15th Avenue (Rte 19)	McCabe Road	Scott Road	3.00	5	Paved road	Road maintenance	456,000	Agricultural, residential
Bridge Rehabilitation or Replacement Projects								
Mohave Road (Rte 1) Bridge number H004	Bridge number H004		0.014	2	Sufficiency rating - 46.5	Bridge Replacement	120,000	serves multiple land uses
17th Avenue (Rte 21) Bridge Number H026			0.014	4	Sufficiency rating - 68.0	Bridge Rehabilitation	79,000	Agricultural
McCabe Road (Rte 30) Bridge Number H021	N/A	N/A	0.017	4	Sufficiency rating - 56.8	Bridge Rehabilitation	74,000	Agricultural
Navajo Road (Rte 38) Bridge Number H027	N/A	N/A	0.011	4	Sufficiency rating - 60.0	Bridge Rehabilitation	56,000	Agricultural

Street Name / BIA Route Number	From	To	Project Length (miles)	BIA Road Functional Classification	Existing Roadway or Site Conditions	Proposed Improvement	Total Project Cost (\$)	Existing and/or Proposed Development Served by Road
Tsosie Road (Rte 44) Bridge H030	N/A	N/A	0.017	4	Sufficiency rating - 47.8	Bridge Replacement	89,000	Agricultural
Beeson Road (Rte 50) Bridge H032	N/A	N/A	0.015	5	Sufficiency rating - 49.8	Bridge Rehabilitation	40,000	Agricultural
Welsh Road (Rte 56) Bridge Number H033	N/A	N/A	0.014	5	Sufficiency rating – 54.0	Bridge Rehabilitation	167,000	Agricultural
Welsh Road (Rte 56) Bridge Number H034	N/A	N/A	0.014	5	Sufficiency rating – 59.5	Bridge Rehabilitation	115,000	Agricultural
Weir Road (Rte 60) Bridge Number H035	N/A	N/A	0.011	5	Sufficiency rating – 58.5	Bridge Rehabilitation	98,000	Agricultural
Weir Road (Rte 60) H036	N/A	N/A	0.019	5	Sufficiency rating – 47.0	Bridge Replacement	600,000	Agricultural
Intersection Projects								
Mohave Road (Rte 1)	Poston Rd	N/A	N/A	2	Needs identified to improve roadway striping, upgrade lighting, install/upgrade sidewalks, install pedestrian warning signs on Mohave Rd	Construction of safety improvements	256,000	Commercial developments
Paving Dirt and Gravel Roads projects								
6th Street	Quartz Ave	Roosevelt St	0.17	Unclassified	Unpaved	Not classified	129,000	Residences, offices
Unnamed road to CRIT Utilities and Transfer Station	SR 95	Utilities and Transfer Station	0.16	Unclassified	Unpaved	Not classified	417,000	CRIT Utilities and Transfer Station

Street Name / BIA Route Number	From	To	Project Length (miles)	BIA Road Functional Classification	Existing Roadway or Site Conditions	Proposed Improvement	Total Project Cost (\$)	Existing and/or Proposed Development Served by Road
Pedestrian Projects								
Bluewater Drive(Rte 105)	SR 95	Bluewater Park	0.71	5		Sidewalks	309,000	Provides a sidewalk connection along Bluewater Drive to the Bluewater Resort and Casino and Colorado River waterfront
Other Transportation Projects								
Sign replacement Program	Various locations	N/A	N/A	N/A	Various	Signing	50,000	Various
Educational programs	N/A	N/A	N/A	N/A	N/A	Safety education	50,000	Applies Reservation-wide
Street lighting projects	Various locations	N/A	N/A	N/A	To be determined	Street lighting	50,000	This is a lump sum that would be used to improve street lighting on an as-needed basis
Canal crossing improvements	Various locations	N/A	N/A	N/A	To be determined	Safety improvements	50,000	This is a lump sum that would be used to improve safety at canal crossings on an as-needed basis
Parking lot repaving for public facilities	Various locations	N/A	N/A	N/A	To be determined	Paving	25,000	This is a lump sum that would be used to address public facility paving needs.
Maintenance equipment	Specific equipment to be determined	N/A	N/A	N/A	N/A	Maintenance	100,000	This is to reserve funds to purchase maintenance equipment
Temporary traffic control equipment – portable variable message signs	N/A	N/A	N/A	N/A	N/A	Traffic control	25,000	To be used at various locations
Total, Mid-range projects							7,717,000	

4.4 PROJECT PHASING – LONG-RANGE PROJECTS

Long-range projects are those that are recommended for implementation in the ten year period from 2028-2038 and beyond. Additional funding sources for these projects will need to be identified. These projects are shown graphically in **Figure 12**, and are summarized in **Table 10**.

These projects total \$70.56M. It assumes the following project breakdown:

<u>Project Type</u>	<u>Cost (\$)</u>
Resurfacing projects	20,554,000
Preventive maintenance projects	3,875,000
Paving dirt and gravel road projects	38,448,000
Pedestrian projects	6,743,000
Other Projects	700,000
<u>Total</u>	<u>70,320,000</u>

Estimated funding sources for the 10-year long range program are estimated to be:

<u>Funding Source</u>	<u>Estimated funding for 10-year period (\$)</u>
BIA Construction funds (through Tribal Transportation Program Formula)	10,400,000
Tribal Transportation Safety Program	300,000
Tribal Bridge Program	300,000
Highway Safety Improvement Program	2,000,000
Surface Transportation Program (excluding state highways, but including bridges and Transportation Alternatives Programs)	4,000,000
State Highway Fund(SR 72 and 95)	2,000,000
Tribal funds	1,000,000
Other non-tribal sources(e.g. Town of Parker and other public and private sources	400,000
Total, estimated funding	20,400,000

Based on the limited availability of funding, a number of projects, particularly some of the larger paving projects for dirt and gravel roads, such as paving Levee Road, and some of the higher cost pedestrian projects would likely shift to a beyond 20 year time frame.

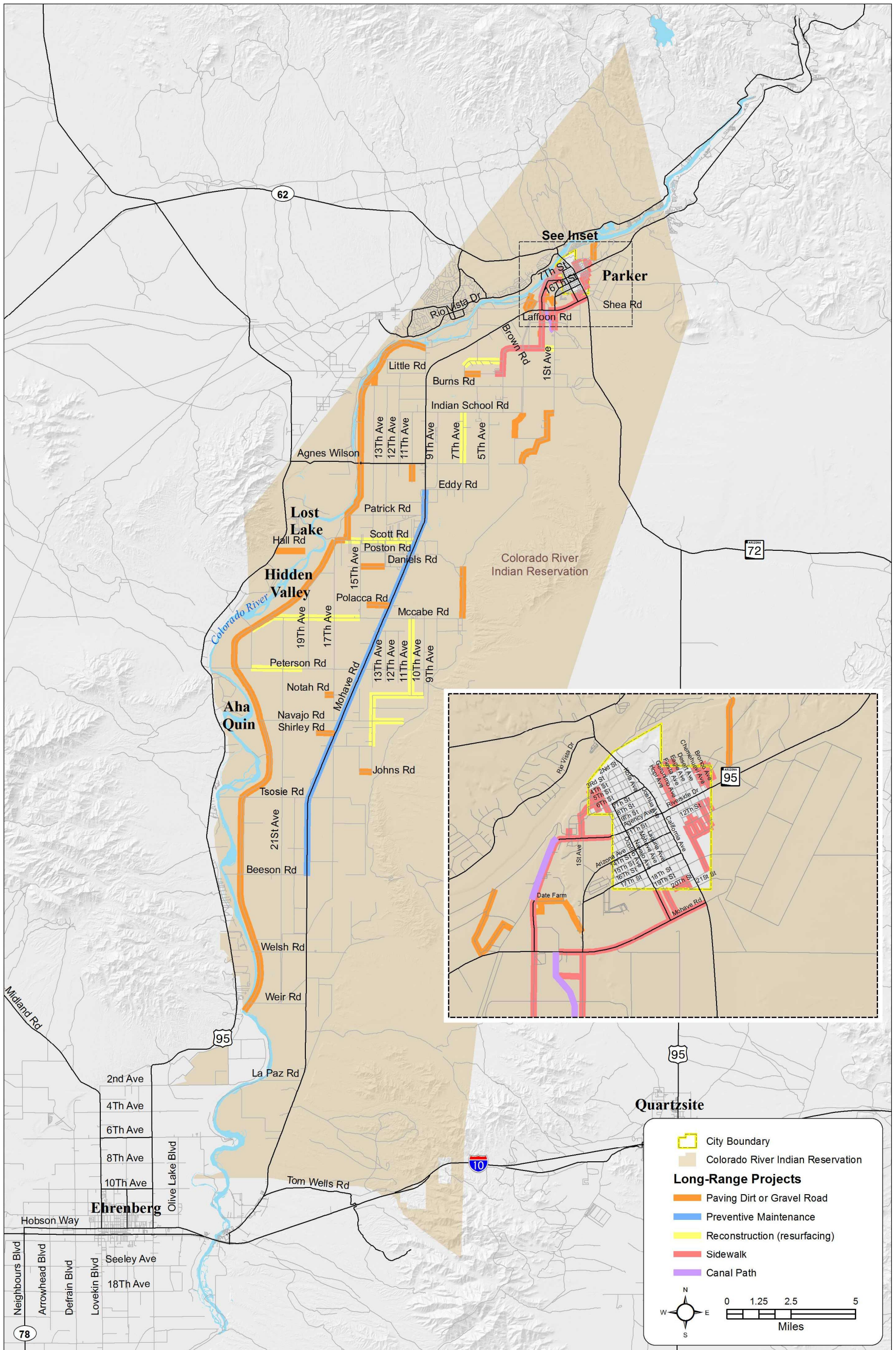


Figure 12 – Long-Term Projects

Table 10 – Long-Range Projects

Street Name / BIA Route Number	From	To	Project Length (miles)	BIA Road Functional Classification	Existing Roadway or Site Conditions	Proposed Improvement	Total Project Cost (\$)	Existing and /or Proposed Development Served by Road
Resurfacing Projects								
11th Ave (Rte 15)	Agnes Wilson Rd	Indian School Rd	2.00	5	Paved road	Resurfacing Construction	1,182,000	Agricultural, residential
11th Ave (Rte 15)	Mark Rd	Peterson Ave	1.00	5	Paved road	Resurfacing Construction	591,000	Agricultural, residential
11th Ave (Rte15)	Peterson Ave	McCabe Rd	2.00	5	Paved road	Resurfacing Construction	1,183,000	Agricultural, residential
14th Ave (Rte 117)	Bridge H040	Mark Rd	1.30	5	Paved road	Resurfacing Construction	769,000	Agricultural, residential
1st Ave (Rte 3)	Burns Rd	Mohave Rd	3.00	4	Paved road	Resurfacing Construction	2,028,000	Agricultural, residential
Indian School Rd (Rte 14)	11th Ave	Mohave Rd	0.50	4	Paved road	Resurfacing Construction	338,000	Residential , agricultural, and Head Start School
Mark Rd (Rte 36)	0.3 miles west of 10th Ave	10th Ave	0.30	5	Paved road	Resurfacing Construction	177,000	Agricultural, residential
McCabe Rd (Rte 30)	23rd Ave	Bridge H020	1.90	4	Paved road	Resurfacing Construction	1,284,000	Agricultural, residential
Mohave Rd (Rte 1)	South CRIT reservation boundary	2.8 miles north of south boundary	2.80	2	Paved road	Resurfacing Construction	2,128,000	Agricultural, residential
Navajo Rd (Rte 38)	0.3 miles west of rd end	east end of Navajo Rd	0.30	4	Paved road	Resurfacing Construction	203,000	Agricultural, residential
Navajo Rd (Rte 38)	Bridge H039	0.3 miles west of road end	1.20	4	Paved road	Resurfacing Construction	811,000	Agricultural, residential
1st Ave (Rte 3)	Mohave Rd	W. Arizona Ave	0.60	4	Paved road	Resurfacing Construction	406,000	Agricultural, residential
7th Ave (Rte 11)	Agnes Wilson Rd	Indian School Rd	2.00	5	Paved road	Resurfacing Construction	1,183,000	Agricultural, residential
Gould Rd (Rte 6)	7th Ave	4th Ave	1.60	5	Paved road	Resurfacing Construction	946,000	Agricultural, residential

Street Name / BIA Route Number	From	To	Project Length (miles)	BIA Road Functional Classification	Existing Roadway or Site Conditions	Proposed Improvement	Total Project Cost (\$)	Existing and /or Proposed Development Served by Road
Mark Rd (Rte 36)	14th Ave	0.3 miles west of 10th Ave	1.70	5	Paved road	Resurfacing Construction	1,005,000	Agricultural, residential
Scott Rd (Rte 24)	16th Ave	Bridge H045	0.10	4	Paved road	Resurfacing Construction	68,000	Agricultural, residential
Scott Rd (Rte 24)	Bridge H045	Mohave Rd	2.70	4	Paved road	Resurfacing Construction	1,825,000	Agricultural, residential
Booth Rd (Rte 4)	Bridge H043	1st Ave	1.20	5	Paved road	Resurfacing Construction	710,000	Agricultural, residential
McCabe Rd (Rte 30)	Bridge H020	Bridge H021	2.80	4	Paved road	Resurfacing Construction	1,892,000	Agricultural, residential
Peterson Rd (Rte 34)	23rd Ave	canal west of 17th Ave	1.80	4	Paved road	Resurfacing Construction	1,217,000	Agricultural, residential
Peterson Rd (Rte 34)	Bridge H024	Mohave Rd	0.90	4	Paved road	Resurfacing Construction	608,000	Agricultural, residential
Preventive Maintenance								
Mohave Road (Rte 1)	2.8 miles north of reservation boundary, south of La Paz Road	Bridge H008 - north of Weir Road (Tyson Wash Bridge)	5.20	2	Paved road	Road maintenance	824,000	Commercial, residential, government and agricultural land uses.
Mohave Road (Rte 1)	Bridge H006	Bridge H005	1.00	2	Paved road	Road maintenance	152,000	Commercial, residential, government and agricultural land uses.
Mohave Road (Rte 1)	Bridge H008 (Tyson Wash Bridge)	Canal Bridge H007	1.80	2	Paved road	Road maintenance	274,000	Commercial, residential, government and agricultural land uses.
Mohave Road (Rte 1)	Canal Bridge H007	Just south of Beeson Road	2.00	2	Paved road	Road maintenance	304,000	Commercial, residential, government and agricultural land uses.
Mohave Road (Rte 1)	Just south of Beeson Road	Peterson Road	7.70	2	Paved road	Road maintenance	1,171,000	Commercial, residential, government and agricultural land uses.
Mohave Road (Rte 1)	Peterson Road	Bridge H006 (Patrick Road is just immediately north of the bridge)	7.40	2	Paved road	Road maintenance	1,125,000	Commercial, residential, government and agricultural land uses.
Eddy Road (Rte 20)	Canal crossing	5th Avenue	0.10	5	Paved road	Road maintenance	10,000	Agricultural, residential

Street Name / BIA Route Number	From	To	Project Length (miles)	BIA Road Functional Classification	Existing Roadway or Site Conditions	Proposed Improvement	Total Project Cost (\$)	Existing and /or Proposed Development Served by Road
15th Avenue (Rte 19)	Agnes Wilson Road	0.1 mi north of Agnes Wilson Road	0.10	5	Paved road	Road maintenance	15,000	Agricultural, residential
Paving dirt or gravel roads								
5th Street	Quartz Ave	Roosevelt St	0.23	Unclassified	Unpaved	Paving construction	175,000	Provides neighborhood access to Agency Rd
11th Avenue (Rte 15)	Agnes Wilson Rd	South end of road	0.5	5	Unpaved	Paving construction	379,000	Provides neighborhood access (two homes)
14th Avenue (Rte 117)	Burns Road	Levee Rd	0.5	5	Unpaved	Paving construction	379,000	Extends 14th Ave to end
14th Avenue (Rte 117)	Patrick Road	White Road	0.5	5	Unpaved	Paving construction	379,000	Extends 14th Ave to Levee Rd (Serves two homes/farms)
15th Avenue (Rte 19)	Agnes Wilson Rd	Canal north of Scott Rd	3.32	5	Unpaved	Paving construction	2,511,000	Provides better access to agricultural area
7th Ave (Rte 11)	McCabe Rd	Scott Rd	3.00	5	Unpaved	Paving construction	2,270,000	Provides recreational access and access to gravel pit.
Daniels Rd (Rte 260)	Mohave Rd	Canal	0.66	5	Unpaved	Paving construction	500,000	Serves agricultural area, adjacent to canal
Date Farm (Rte 303)	2nd Ave	First Ave	0.68	3	Unpaved	Paving construction	515,000	Residential access
Hall Rd	US 95	East end of road	1.15	Unclassified	Unpaved	Paving construction	870,000	Provides better access to the Colorado River - on the California Side
Johns Rd (Rte 42)	15th Ave	14th Ave	0.49	5	Unpaved	Paving construction	371,000	Serves residences and needed for emergency access
Levee Rd	Dam/start of 29	Scott Road/End of 29	21.2	Unclassified	Unpaved	Paving construction	16,037,000	Provides access to east side of Colorado River
Levee Rd	15th Ave/19	End of Unpaved portion of Levee Road	7.71	Unclassified	Unpaved	Paving construction	5,833,000	Provides access to east side of Colorado River
Levee Rd	Unnamed road	Bridge at canal/end of unpaved portion	1.21	Unclassified	Unpaved	Paving construction	915,000	Provides access to east side of Colorado River
Little Rd (Rte 8)	7th Ave	Mo Chem	1.00	5	Unpaved	Paving construction	757,000	Serves Mo-Chem neighborhood - approximately 50 homes

Street Name / BIA Route Number	From	To	Project Length (miles)	BIA Road Functional Classification	Existing Roadway or Site Conditions	Proposed Improvement	Total Project Cost (\$)	Existing and /or Proposed Development Served by Road
Mitchell Rd (Rte 360)	unnamed road	Canal	0.76	5	Unpaved	Paving construction	575,000	Extends paved portion of Mitchell Rd to canal
Notah Rd (Rte 340)	Canal	17th Ave	0.41	5	Unpaved	Paving construction	311,000	Serves 1 home
Polacca Rd (Rte 280)	0.39 miles west of Mohave Rd	Mohave Rd	0.39	5	Unpaved	Paving construction	296,000	Serves three homes and agricultural areas
3rd Avenue (Rte 55)	Rd to Ahakhav Tribal Preserve	Unnamed canal path	0.54	5	Unpaved	Paving construction	409,000	Serves Rodeo Subdivision area - approximately 9 homes
Scott Rd (Rte 24)	Levee Rd	16th Ave	0.48	4	Unpaved	Paving construction	364,000	Extends the paved portion of Scott Road to Levee Road
Shirley Rd (Rte 380)	Canal	Mohave Rd	0.79	5	Unpaved	Paving construction	598,000	Serves three homes
Mission Subdivision Streets			0.1	Unclassified	Unpaved	Paving construction	76,000	Serves Mission Subdivision - approximately 6 homes
Landfill Rd	US 95	Landfill	1.66	Unclassified	Unpaved	Paving construction	1,256,000	Serves landfill
Kudo Farms Rd	1st Avenue	Kudo Farms	2.53	Unclassified	Unpaved	Paving construction	1,914,000	Serves Farm and an undetermined number of homes
Service Rd	Walmart	BlueWater Resort and Casino	0.84	Unclassified	Unpaved	Paving construction	636,000	Provides alternative access between Wal-Mart and BlueWater Resort area
Unnamed Rd	Date Farm Rd	2nd Ave	0.16	Unclassified	Unpaved	Paving construction	122,000	Provides access to neighborhood area- approximately 9 homes
Sidewalk Projects								
Geronimo Ave	6th Street	SR 95	0.29	Unclassified	Paved road	Sidewalk construction	187,000	Connects approximately 15 homes and 3 businesses to sidewalk system on Rio Vista Hwy (SR 95). Part of Sidewalk Area 1.
Fiesta Ave	6th Street	North end	0.07	Unclassified	Paved road	Sidewalk construction		Connects 2 homes on Fiesta to existing sidewalk network. Part of Sidewalk Area 1.
Eagle Ave	6th Street	North end	0.07	Unclassified	Paved road	Sidewalk construction		Connects 3 homes on Eagle to existing sidewalk network Part of Sidewalk Area 1.
Mohave Rd (Rte 1)	2nd Ave	0.4 miles east of 2nd Ave	0.4	2	Paved road	Sidewalk construction	174,000	Tribal Headquarters. This is called Sidewalk Area 2.

Street Name / BIA Route Number	From	To	Project Length (miles)	BIA Road Functional Classification	Existing Roadway or Site Conditions	Proposed Improvement	Total Project Cost (\$)	Existing and /or Proposed Development Served by Road
7th Street	Chemehuevi Ave	East end	0.14	Unclassified	Paved road	Sidewalk construction	322,000	Connects approximately 20 homes to Western Park, SR 95, and other sidewalks. Part of Sidewalk Area 3.
8th Street	Chemehuevi Ave	East end	0.14	Unclassified	Paved road	Sidewalk construction		Connects approximately 20 homes to Western Park, SR 95, and other sidewalks. Part of Sidewalk Area 3.
9th Street	Chemehuevi Ave	East end	0.11	Unclassified	Paved road	Sidewalk construction		Connects approximately 20 homes to Western Park, SR95, and other sidewalks. Part of Sidewalk Area 3.
unnamed road	8th Street	9th Street	0.07	Unclassified	Paved road	Sidewalk construction		Connects approximately 20 homes to Western Park, SR95, and other sidewalks. Part of Sidewalk Area 3.
unnamed road	7th Street	8th Street	0.07	Unclassified	Paved road	Sidewalk construction		Connects approximately 20 homes to Western Park, SR95, and other sidewalks. Part of Sidewalk Area 3.
Bronco Ave	7th Street	SR 95	0.21	Unclassified	Paved road	Sidewalk construction		Connects approximately homes to Western Park, SR95, and other sidewalk network. Part of Sidewalk Area 3.
SR 95 (Rio Vista Hwy) (Rte95)	SR 95 /.1 mi east of Airport Drive	BlueWater Drive	0.48	2	Paved road	Sidewalk construction	209,000	Extends existing sidewalk connection from commercial area (Wal-Mart/Moovalya Plaza) to cross street of BlueWater Drive. This is called Sidewalk Area 4. ADOT Project .
Chemehuevi Ave	11th Street	Arizona Ave	0.15	Unclassified	Paved road	Sidewalks	767,000	Connects approximately 11 homes to businesses and other sidewalk networks. Part of sidewalk Area 5.
Desert Ave	11th Street	W 15th St	0.30	Unclassified	Paved road	Sidewalks		Serves approximately 14 homes, a church, and businesses. Part of sidewalk Area 5.
Eagle Ave	Arizona Ave	W 15th St	0.15	Unclassified	Paved road	Sidewalks		Connects approximately 9 homes to businesses and other sidewalk networks. Part of sidewalk Area 5.
Fiesta Ave	12th	15th St	0.23	Unclassified	Paved road	Sidewalks		This area appears to be commercial use area and provides sidewalk system continuity. Part of sidewalk Area 5.
Geronimo Ave	21st Street	Arizona Ave	0.54	Unclassified	Paved road	Sidewalks		This section of Geronimo has primarily businesses and Arizona Western College Parker Learning Center. Part of sidewalk Area 5.
Arizona Ave	Geronimo Ave	Eagle Ave	0.16	Unclassified	Paved road	Sidewalks		Connects homes to businesses and other sidewalk networks. Part of sidewalk Area 5.
15th Street	Geronimo Ave	Desert Ave	0.23	Unclassified	Paved road	Sidewalks		Connects homes to businesses and other sidewalk networks. Part of sidewalk Area 5.

Street Name / BIA Route Number	From	To	Project Length (miles)	BIA Road Functional Classification	Existing Roadway or Site Conditions	Proposed Improvement	Total Project Cost (\$)	Existing and /or Proposed Development Served by Road
Joshua Ave	19th St	21st St	0.15	Unclassified	Paved road	Sidewalks	1,054,000	Connects homes to existing sidewalk network which leads to the park, hospital, and tribal Headquarters. Part of Sidewalk Area 6.
20th St	Laguna Ave	Joshua Ave	0.16	Unclassified	Paved road	Sidewalks		Connects homes to existing sidewalk network which leads to the park, hospital, and tribal offices. Part of Sidewalk Area 6.
Mohave Ave	19th St	Mohave Rd	0.33	Unclassified	Paved road	Sidewalks		Connects homes to hospital. Part of Sidewalk Area 6.
Navajo Rd	19th St	Mohave Rd	0.33	Unclassified	Paved road	Sidewalks		Connects homes to park and hospital. Part of Sidewalk Area 6.
Mohave Rd (Rte 1)	SR 95	0.4 mi east of 2 nd Avenue	1.85	2	Paved road	Sidewalks		Connects hospital to Tribal Headquarters
Unnamed road	Agency Ave	Palo Verde	0.42	Unclassified	Paved road	Sidewalks	353,000	Connects approximately 25 homes to tribal offices and Indian Health Center. Part of sidewalk area 7.
Palo Verde Ave	6th St	North End	0.21	Unclassified	Paved road	Sidewalks		Connects approximately 25 homes to tribal offices and Indian Health Center. Part of sidewalk area 7.
Quartz Ave	6th St	W 5th St	0.08	Unclassified	Paved road	Sidewalks		Connects approximately 25 homes to tribal offices and Indian Health Center. Part of sidewalk area 7.
Roosevelt St	Agency Ave	Grant St	0.1	Unclassified	Paved road	Sidewalks		Connects approximately 25 homes to tribal offices and Indian Health Center. Part of sidewalk area 7.
1st Ave (Rte3)	Agency Ave	W 16th Street	0.66	4	Paved Road	Sidewalks	436,000	links homes to multiple health and social service related offices
16 th St (Rte 47)	1st Ave	0.06 miles west of Reata Ave	0.34	5	Paved Road	Sidewalks		Extends existing sidewalk system from schools to multiple subdivisions- many children walk on this route. Serves 100 homes neighborhood (99 homes plus 1 office) and approximately 23 homes in Desert Sun subdivision.
Agency Ave/2nd Ave(Rte5)	Palo Verde Ave	Booth Rd	3.25	5	Paved Road	Sidewalks	1,416,000	Connects homes in agricultural area to sidewalk network, medical center, hospital, and tribal offices. Sidewalk area 9.
Booth Rd (Rte4)/4th Ave (Rte77)	2nd Avenue	Little Road	2.4	5	Paved Road	Sidewalks	1,206,000	Connects homes in agricultural area to sidewalk network, medical center, hospital, and tribal offices. Part of Sidewalk area 9A.
Little Road (Rte 8)	West End	4th Ave	0.37	5	Paved Road	Sidewalks		Provides a sidewalk to the Mo-Chem neighborhood- approximately 50 homes. Part of Sidewalk area 9A.

Street Name / BIA Route Number	From	To	Project Length (miles)	BIA Road Functional Classification	Existing Roadway or Site Conditions	Proposed Improvement	Total Project Cost (\$)	Existing and /or Proposed Development Served by Road
Unnamed road	1 st Avenue	Canal path	0.25	Unclassified	Paved road	Sidewalks	462,000	Sidewalk link between residential areas and Tribal Headquarters. Part of Sidewalk area 10.
1st Ave (Rte 3)	Mohave Rd	Canal crossing	0.81	5	Paved road	Sidewalks		Residential areas and Tribal Headquarters. Part of Sidewalk area 10.
Unnamed Road	Mohave Rd	1st Avenue	0.36	Unclassified	Unpaved road	Path	157,000	Provides a path through neighborhood areas
Other Transportation Projects								
Sign replacement Program	Various locations	N/A	N/A	N/A	Various	Signing	100,000	Various
Educational programs	N/A	N/A	N/A	N/A	N/A	Safety education	100,000	Applies Reservation-wide
Street lighting projects	Various locations	N/A	N/A	N/A	To be determined	Street lighting	100,000	This is a lump sum that would be used to improve street lighting on an as-needed basis
Canal crossing improvements	Various locations	N/A	N/A	N/A	To be determined	Safety improvements	100,000	This is a lump sum that would be used to improve safety at canal crossings on an as-needed basis
Parking lot repaving for public facilities	Various locations	N/A	N/A	N/A	To be determined	Paving	50,000	This is a lump sum that would be used to address public facility paving needs.
Maintenance equipment	Specific equipment to be determined	N/A	N/A	N/A	N/A	Maintenance	200,000	This is to reserve funds to purchase maintenance equipment
Temporary traffic control equipment – portable variable message signs	N/A	N/A	N/A	N/A	N/A	Traffic control	50,000	To be used at various locations
Total, Long range projects							\$70,320,000	

5. Funding Sources for Transportation Projects

This chapter describes funding resources that are potentially available for the projects identified in the previous chapters. Financing a transportation program requires utilization of a variety of funding sources and strategies.

The purpose of this chapter is to provide a brief description of some of the major available funding sources and financing options and to identify principal contacts for additional information regarding the funding sources and requirements.

In July, 2012, P.L. 112-141, the Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed into law. The *Tribal Transportation Program* under MAP-21 provides \$450 million annually for projects that improve access to and within Tribal lands. This program generally continues the previous Indian Reservation Roads (IRR) Program, while adding new set asides for tribal bridge projects (in lieu of the existing Indian Reservation Road Bridge program) and tribal safety projects. The Program was established to provide for construction of public roads and bridges under Bureau of Indian Affairs (BIA) administration. The purpose of the program is to provide safe and adequate transportation facilities including public road access to and within Indian reservations, Indian trust land, or Native American communities. The Tribal Transportation Roads Inventory by definition includes BIA, state, Colorado River Indian Tribes, and other local government public roads located within or providing access to an Indian reservation.

The Tribal Transportation Program continues to provide set asides for program management and oversight and tribal transportation planning. A new statutory formula for distributing funds among tribes, based on tribal population, road mileage, and average funding under SAFETEA-LU, plus an equity provision, is to be phased in over a 4 year period.

MAP-21 also authorizes the *Tribal High Priority Projects Program*, a discretionary program modeled on an earlier program that was funded by set aside from the Indian Reservation Roads Program. MAP-21 provides \$30 million per year from the General Fund (subject to appropriation) for this new program.

The funding sources are described for the following types of projects:

- Roadway (Table 11)
- Safety (Table 12)
- Bicycle, Pedestrian and Equestrian (Table 13)
- Transit (Table 14)
- Aviation (Table 15)

Table 11 – Road Project Funding Sources

Program	Administering Agency	Uses of Funds	Funding Level	Program Details	Application Deadline	Contact
Tribal Transportation Program	BIA-DOT Western Regional Office	The Tribal Transportation Program provides \$450 million annually for projects that improve access to and within Tribal lands. This program generally continues the existing Indian Reservation Roads program, while adding new set asides for tribal bridge projects (in lieu of the existing Indian Reservation Road Bridge program) and tribal safety projects. It continues to provide set asides for program management and oversight and tribal transportation planning. A new statutory formula for distributing funds among tribes, based on tribal population, road mileage, and average funding under SAFETEA-LU, plus an equity provision, is to be phased in over a 4 year period.	Varies for each tribe based on population and mileage.	Funds are allocated to BIA Regional Office on a formula basis	TTIP has to be submitted to FHWA by Aug	Bob Maxwell, Regional Roads Planner BIA Western Regional Office BIA Division of Transportation 400 N. 5th Street Two Arizona Center, 12th Floor Phoenix, AZ 85004 Phone: (602) 379-6782 Fax: (602) 379-3837 Email: Bob.Maxwell@bia.gov
Tribal High Priority Projects Program	BIA-DOT Western Regional Office	This program is for Tribes that receive insufficient funding to carry out their highest priority project.	Maximum \$1M per project	Application-based		Bob Maxwell, Regional Roads Planner BIA Western Regional Office BIA Division of Transportation 400 N. 5th Street Two Arizona Center, 12th Floor Phoenix, AZ 85004 Phone: (602) 379-6782 Fax: (602) 379-3837 Email: Bob.Maxwell@bia.gov

Program	Administering Agency	Uses of Funds	Funding Level	Program Details	Application Deadline	Contact
Tribal Transportation Planning	BIAWRO	Tribal transportation planning.	2% of construction funding	Funds are allocated directly to Tribe based on a formula, and distributed on a project by project basis.	N/A	Bob Maxwell, Regional Roads Planner BIA Western Regional Office BIA Division of Transportation 400 N. 5th Street Two Arizona Center, 12th Floor Phoenix, AZ 85004 Phone: (602) 379-6782 Fax: (602) 379-3837 Email: Bob.Maxwell@bia.gov
National Bridge and Tunnel Inventory		Tribal bridges will need to be inspected, classified, and inventoried. <ul style="list-style-type: none"> ▪ Bridges will be classified according to serviceability, safety, and essentiality for public use; and ▪ Based on the classification, each bridge will be given a risk-based priority for systematic preventive maintenance, replacement or rehabilitation. 	To be determined	To be determined	To be determined	Bob Maxwell, Regional Roads Planner BIA Western Regional Office BIA Division of Transportation 400 N. 5th Street Two Arizona Center, 12th Floor Phoenix, AZ 85004 Phone: (602) 379-6782 Fax: (602) 379-3837 Email: Bob.Maxwell@bia.gov
Surface Transportation Program (STP)	ADOT	Construction, transit, safety, Intelligent transportation systems, management systems, environmental, transportation planning and enhancement on roads with functional classifications of urban collector, major rural collector or higher.	Varies by year	Project is scoped and request for funding submitted to WACOG. Project is funded if it is added to RTIP and STIP.		Brian Babiars Western Arizona Council of Governments 208 N. 4th Street Kingman, AZ 86401 Phone: (928) 782-1886 Email: brianb@WACOG.com

Program	Administering Agency	Uses of Funds	Funding Level	Program Details	Application Deadline	Contact
Planning Assistance for Rural Areas (PARA) Program	ADOT	Small area transportation studies to develop short, medium and long range transportation plans.	Up to \$250,000 per study depending on the project area and scope of work.	Competitive applications for planning projects are submitted to ADOT Multimodal Planning Division (MPD) on an annual basis.	Applications for planning projects are submitted to ADOT on an annual basis in early summer.	http://mpd.azdot.gov/mpd/systems_planning/PDF/PARA/PARAs.asp Justin Feek, Senior Transportation Planner PARA Program Manager Phone: (602)712.6196 jfeek@azdot.gov
Indian Community Development Block Grant Program	US Dept. of Housing and Urban Development	Infrastructure construction, e.g., roads, water and sewer facilities; and, single or multipurpose community buildings. Also for housing and economic development projects. There are also Imminent Threat Grants to provide solutions to a problem of an urgent nature	Nationally , single purpose grants were \$60M, Imminent threat grants up to \$3.9M	Single-purpose grants are competitively awarded- must primarily benefit low or moderate income persons	Mid-June annually	Southwest Office of Native American Programs Phoenix Office One North Central Avenue, Suite 600 Phoenix, AZ, 85004-2361 Telephone: (602) 379-7200 and Sharon Mitchell, Western Arizona Council of Governments 208 N. 4th Street Kingman, AZ 86401 928-377-1070 Office 520-366-6038 Cell Email: sharonm@WACOG.com

Table 12 – Funding for Safety Projects

Program	Administering Agency	Uses of Funds	Funding Level	Program Details	Application Deadline	Contact
Alcohol Impaired Driving	NHTSA & GOHS	Costs for high visibility enforcement; Costs of training and equipment for law enforcement, Costs of advertising and educational campaigns that publicize checkpoints, increase law enforcement efforts and target impaired drivers under 34 years of age, Costs of vehicle or license plate impoundment.	\$129 million per year nationally	GOHS submits application for funding. Tribe should work with GOHS for use of funds.		http://www.azgohs.gov/ Director Alberto Gutier Governor’s Office of Highway Safety 3030 North Central Avenue, #1550 Phoenix, AZ 85012 Phone: 602-255-3216 Office
Highway Safety Improvement Program (HSIP)	ADOT and YMPO	Elimination of safety hazards on any public road, public surface transportation facility; any publicly owned bicycle or pedestrian pathway or trail; or any traffic calming measure.	To be determined	Project is scoped and request for funding submitted to YMPO. HSIP Local Government Coordinator provides assistance to local agencies throughout the process of identifying and developing the projects.	May 1st	http://www.azdot.gov/highways/traffic/TSS/HSIP/AzHSIP2010.pdf Mark Poppe, State Safety Engineer ADOT Traffic Safety Section E: mpoppe@azdot.gov P: (602) 712-8496 and Sharon Mitchell, Western Arizona Council of Governments 208 N. 4th Street Kingman, AZ 86401 928-377-1070 Office 520-366-6038 Cell Email: sharonm@WACOG.com

Program	Administering Agency	Uses of Funds	Funding Level	Program Details	Application Deadline	Contact
Tribal Safety Program	BIA	Funds to be provided based on identification and analysis of highway Safety issues and opportunities on tribal lands	Approx. \$9 million/year nationally	To be determined, new program under MAP-21	To be determined, new program under MAP-21	Bob Maxwell, Regional Roads Planner BIA Western Regional Office BIA Division of Transportation 400 N. 5th Street Two Arizona Center, 12th Floor Phoenix, AZ 85004 Phone: (602) 379-6782 Fax: (602) 379-3837 Email: Bob.Maxwell@bia.gov
State & Community Highway Safety Grant Program	NHTSA & GOHS	Alcohol counter measures, Occupant protection, Police traffic services (primarily enforcement), Emergency medical services, Traffic records, Motorcycle safety, Pedestrian and bicycle safety, Roadway safety, Speed control, school bus safety, training, and accident reconstruction.	Approx. \$2.5 million/year for Arizona	Competitive proposals submitted to the GOHS	Competitive proposals submitted to the GOHS during April and May	http://www.azgohs.gov/ Director Alberto Gutier Governor's Office of Highway Safety 3030 North Central Avenue #1550 Phoenix, Arizona. 85012
Injury Prevention Program	IHS	Develop, implement, and evaluate proven or promising injury prevention intervention programs. Projects include, but are not limited to, programs designed to reduce alcohol-related injuries, e.g. supporting initiatives to reduce drinking and driving. Other projects include seat belt promotion campaigns, pedestrian safety, child passenger safety,	\$75,000 maximum per project	Work with IHS Office to obtain project funding.	N/A	http://www.ihs.gov/InjuryPrevention/

Program	Administering Agency	Uses of Funds	Funding Level	Program Details	Application Deadline	Contact
Road Safety Assessment	ADOT Traffic Safety Section	The RSA program will conduct Road Safety assessments on state, local and tribal road facilities. An RSA is defined as a formal examination of user safety of a future or existing roadway by an independent multidisciplinary audit team, which includes qualified experienced members.	Technical assistance, no actual award of funds	Submit application	Ongoing	Richard Weeks, P.E. Road Safety Assessment Program Manager 1615 West Jackson St., Mail Drop 065R Phoenix, AZ 85007-3217 Phone: 602-712-4382 Fax: 602-712-3243 Email: rweeks@azdot.gov

Another reference source for funding programs that address tribal traffic safety issues is the Tribal Traffic Safety Funding Guide which was developed through the Arizona Transportation Research Center - Research Program. The guide summarizes the various transportation safety programs and can be obtained through the ATRC website at http://www.azdot.gov/TPD/ATRC/publications/project_reports/PDF/AZ592s.pdf

Table 13 – Funding for Pedestrian, Bicycle, and Equestrian Projects

Program	Administering Agency	Uses of Funds	Funding Level	Program Details	Application Deadline	Contact
<p>Transportation Alternatives Program</p>	<p>ADOT and YMPO</p>	<p>Under MAP-21 provisions, the Safe Routes to School (SRTS), Transportation Enhancement (TE) and Recreational Trails will be funded under this program.</p>	<p>To be determined</p>	<p>To be determined</p>	<p>September of each year</p>	<p>Patrick Stone TE Section Manager Arizona Department of Transportation 1615 W. Jackson Street, MD EM10 Phoenix, AZ 85226 Phone: 602-712-4428 Email: pstone@azdot.gov</p> <p>Kristin Myers Arizona Department of Transportation Local Public Agency Section Safe Routes to School Program 1615 W. Jackson St., Mail Drop EM11 Phoenix, AZ 85007 Phone: (602) 712-6166 Email: KMyers@azdot.gov</p> <p>Brian Babiars Western Arizona Council of Governments 208 N. 4th Street Kingman, AZ 86401 (928) 782-1886 Office Email: brianb@WACOG.com</p>

Southwest Conservation Corps	Southwest Conservation Corps	Although not a funding source, this non-profit organization engages and trains youth and completes conservation projects for the public benefit	N/A	Contact Southwest Conservation Corps to partner on a project	N/A	Ancestral Lands Acoma, NM (505) 552-4074 Four Corners 701 Camino del Rio Suite 101 Durango, CO 81301 (970) 259-8607
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Table 14 – Transit Funding Programs

Program	Administering Agency	Uses of Funds	Funding Level	Program Details	Application Deadline	Contact
<p>Section 5310, Enhanced Mobility of Seniors and Individuals with Disabilities Transit Program</p>	<p>ADOT</p>	<p>The Section 5310 Program has been renamed under the new federal surface transportation legislation (MAP-21) to be the “Enhanced Mobility of Seniors and Individuals with Disabilities” Program. Section 5310 funding is allocated among three area population ranges – rural (less than 50,000), small urbanized (50,000 to 200,000) and large urbanized (over 200,000). Tribes must compete with other governments for Section 5310 funding.</p>	<p>Unknown, previously was approximately 3.9 million statewide</p>	<p>Application-based process.</p>	<p>Regional application workshops – (by webinar) Applications due Feb/March 2012</p>	<p>http://www.azdot.gov/MPD/Community_Grant_Service/Section5310.asp Dan Harrigan, ADOT Coordinated Mobility Program Manager at (602) Phone: 712-8232 DHarrigan@azdot.gov</p>

Program	Administering Agency	Uses of Funds	Funding Level	Program Details	Application Deadline	Contact
Section 5311, Rural Public Transportation Program and Section 5311(c) – Public Transportation on Indian Reservations (Tribal Transit Program)	ADOT	The Section 5311 Program has been renamed under MAP-21 to be the “Formula Grants for Rural Areas Programs. There is a tribal set-a-side of \$30 million nationally, but tribes would also likely be eligible the portion of funding going to the state.	Dependent on various factors	Application based program.	December	http://www.azdot.gov/planning/TransitProgramsandGrants/5311-rural-public-transportation-program Nicole Patrick ADOT Transit Programs Phone: (928) 783-8911 email: NPatrick@azdot.gov Federal Transit Administration – tribal transit information: http://www.fta.dot.gov/grants/13094_3553.html Lorna Wilson, Office of Program Management, Phone: (202) 366–0893, email: Lorna.wilson@dot.gov or Elan Flippin, Office of Program Management, Phone: (202) 366–3800 email: elan.flippen@dot.gov
Rural Transit Assistance Program	ADOT	This is a free training, technical assistance, and outreach program funded by the Federal Transit Administration	N/A	Each Section 5311 grantee agency has an ongoing training program. Regularly offered training may include Passenger Service & Safety, CPR, Basic First Aid, Defensive Driving.	N/A	Sara Allred Rural Transit Assistance Program ADOT Multimodal Planning Division 206 S 17th Ave MD 340B Phoenix, AZ 85007 Phone: 602-712-4498 Email: sallred@azdot.gov

Program	Administering Agency	Uses of Funds	Funding Level	Program Details	Application Deadline	Contact
Section 5304 – Statewide Transportation Planning Program	ADOT	Section 5304 funds are apportioned to the states for use in rural transit planning and research. Other eligible uses, at the state's discretion, include statewide planning and technical assistance activities.	The Federal Transit Administration appropriated \$328,654 to ADOT in FY2007.	Application-based program. Applicants must provide a minimum 20% match. A limit of \$30,000 is available per project.	N/A	Sara Allred 5304 Program ADOT Multimodal Planning Division 206 S 17th Ave MD 340B Phoenix, AZ 85007 Phone: 602-712-4498 Email: sallred@azdot.gov

Table 15 - Aviation Funding Sources

Program	Administering Agency	Uses of Funds	Funding Level	Program Details	Application Deadline	Contact
Airport Improvement Fund	Federal Aviation Administration	Eligible projects such as airfield, Apron, terminal and access roads can receive up to 90 percent federal participation.	Varies - funds are distributed each year by the FAA under authorization from Congress	Application-based program. Applicants must provide a minimum match.	December 31st annually	Mark Sedarous Federal Aviation Administration Phone: 602-379-3031 mark.sedarous@faa.gov
FAA Facilities and Equipment Program	Federal Aviation Administration	This program provides funding for installation and maintenance of various navigational aids and equipment of the national airspace system.	Varies - funds are distributed each year by the FAA under authorization from Congress	Application-based program. Applicants must provide a minimum match.		Mark Sedarous Federal Aviation Administration Phone: 602-379-3031 mark.sedarous@faa.gov
State Aid to Airports	Arizona Department of Transportation	Airports can receive state-funded grants that require a small percentage of matching funds, or, they can receive grants from the FAA.	Aviation Fund	Airport Capital Improvement Program prioritizes requested projects.	Annually (approx. November 1 st)	Scott Driver, Airport Grant Manager ADOT MPD - Aeronautics Group 206 S. 17th Avenue Mail Drop 426M Phoenix, Arizona 85007 Phone: 602-712-8386 SDriver@azdot.gov

6. Other Recommendations

6.1 RECOMMENDATIONS FOR UPDATES TO TRIBAL TRANSPORTATION INVENTORY

The Tribal Transportation Facility Inventory is the new name (under MAP-21) for the Indian Reservation Roads Inventory. The inventory is used to determine relative transportation needs among Indian tribes, serving as a basis for allocation of funds. The inventory includes, at a minimum, facilities that are eligible for assistance under the TTP that a Tribe has requested, including facilities that:

- were included in the BIA system inventory prior to October 1, 2004;
- are owned by an Indian tribal government;
- are owned by the BIA;
- were constructed or reconstructed with funds from the Highway Trust Fund under the IRR program since 1983;
- are public roads or bridges within the exterior boundary of Indian reservations, Alaska Native villages, and other recognized Indian communities (including communities in former Indian reservations in the State of Oklahoma) in which the majority of residents are American Indians or Alaska Natives;
- are public roads within or providing access to an Indian reservation or Indian trust land or restricted Indian land that is not subject to fee title alienation without the approval of the Federal Government, or Indian or Alaska Native villages, groups, or communities in which Indians and Alaska Natives reside, whom the Secretary of the Interior has determined are eligible for services generally available to Indians under Federal laws specifically applicable to Indians; or
- are primary access routes proposed by tribal governments, including roads between villages, roads to landfills, roads to drinking water sources, roads to natural resources identified for economic development, and roads that provide access to intermodal terminals, such as airports, harbors, or boat landings.

6.1.1 ROUTES TO BE ADDED TO THE TRIBAL TRANSPORTATION INVENTORY

Roads to be added to the Tribal Transportation Inventory are listed in **Tables 17, 18, and 19** in **Appendix B** and shown graphically in **Figure 13**. There are a total of approximately 164.6 miles of roads proposed to be added to the Inventory. An overview of the roads to be added to the Inventory are:

- Big River: Community Roads
- Blue Water Lagoon Roads
- Tribal Roads within the Parker town limits
- Levee Road
- Lazy D subdivision streets
- Water Wheel Community streets
- Flamingo Road
- Aha Quin Resort Roads
- Shea Road
- El Paseo Lane

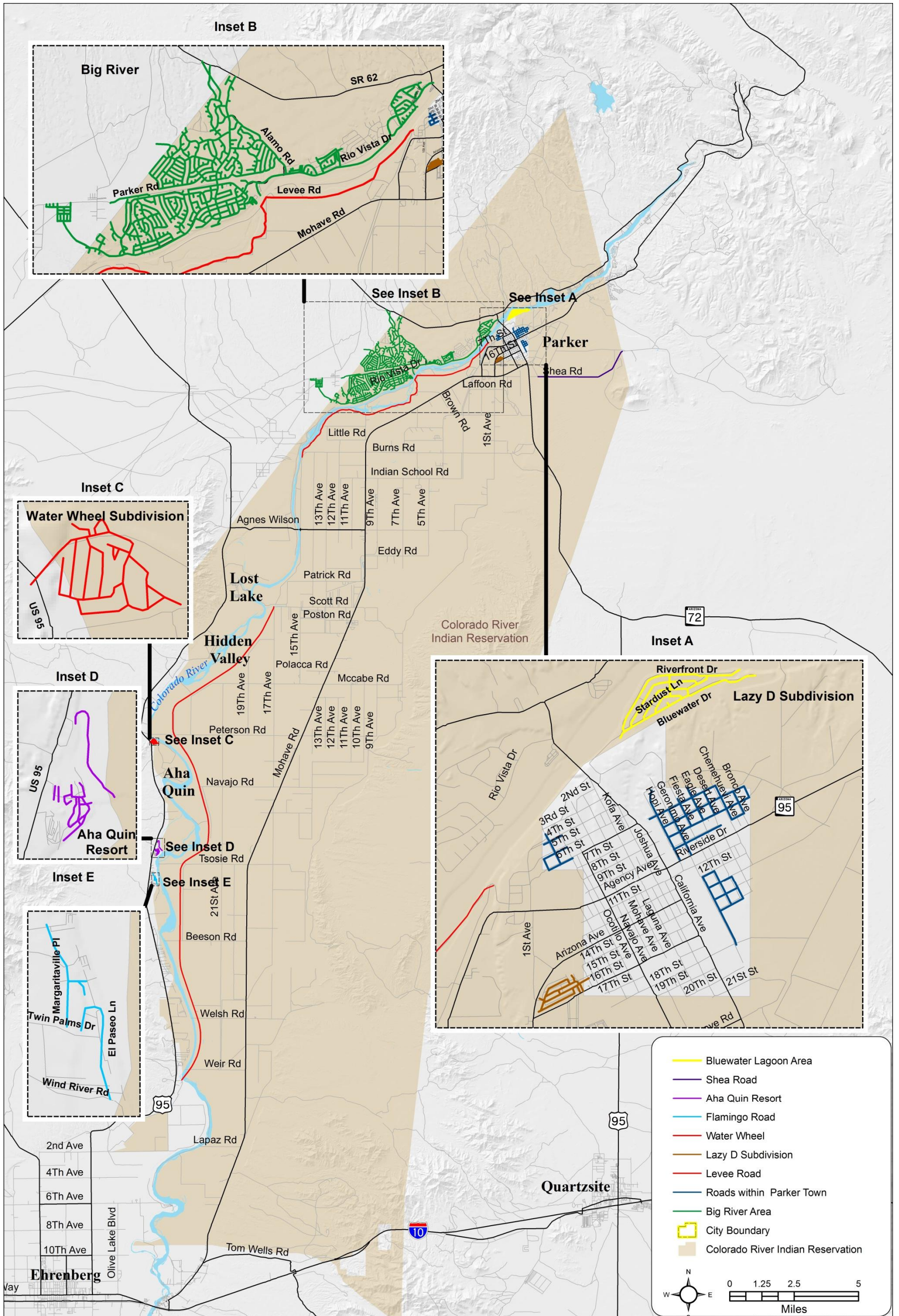


Figure 13 – Roads to be added to the Tribal Transportation Inventory

6.2 RECOMMENDATIONS FOR FUNCTIONAL CLASSIFICATION UPDATES

Potential federal functional classification changes are summarized in **Table 16**. It is CRIT's desire to update functional classification of roads and also to determine what roads can be added to the system of federally functionally classified routes.

Table 16 – Potential Federal Functional Classification Changes

Road name	Current Federal Functional Classification	Proposed Change	Justification	2013 Traffic Volume (Vehicles per day)
Mohave Road, SR 95 to south Reservation boundary	Rural major collector	Rural minor arterial	<ul style="list-style-type: none"> ▪ This roadway serves as link between Ehrenberg and Parker ▪ It serves trips between Arizona and California ▪ It forms the backbone of the road system for the Colorado River Indian Tribes Reservation ▪ It provides relatively high travel speeds ▪ There are few interruptions to through traffic 	3,200
Agnes Wilson Road, Mohave Road to US 95	Rural major collector	Rural minor arterial	<ul style="list-style-type: none"> ▪ It serves trips between Arizona and California ▪ It forms an east-west backbone of the road system for the Colorado River Indian Tribes Reservation. ▪ It links US 95 in California to Mohave Road. ▪ There are few interruptions to through traffic. 	550
Peterson Road, 9 th Avenue to 23 rd Avenue	Unclassified	Minor collector	<ul style="list-style-type: none"> ▪ Peterson Road is a continuous east-west route that extends from 9th Avenue to 23rd Avenue ▪ Peterson Road collects traffic from local roads, including 9th, 10th, 11th, 12th, 13th, 14th, 17th, 19th, 21st, and 23rd Avenues. 	N/A

Road name	Current Federal Functional Classification	Proposed Change	Justification	2013 Traffic Volume (Vehicles per day)
Burns Road, 15 th Avenue to 1 st Avenue	Unclassified	Major collector	<ul style="list-style-type: none"> ▪ Burns Road is a major east –west road through the reservation. It extends from 15th Avenue to SR 95. Although the connection to SR 95 is not a good connection, in the future, if improved it has the potential to attract traffic ▪ Burns Road collects traffic from numerous roads in the area, including 1st, 4th, 6th, 7th,8th, 12th, 13th,14th,and 15th Avenues. It also intersects Mohave Road, a major north-south roadway on the Reservation ▪ It is classified as a major collector road by the BIA. 	430

Appendix A – Road Safety Assessment

Colorado River Indian Tribes Road Safety Assessment



Prepared for:
Colorado River Indian Tribes
BIA Colorado River Agency

Prepared by:



Arizona Road Safety Assessment Program
Arizona Department of Transportation Traffic Safety Section
1615 West Jackson Street, Mail Drop 065R
Phoenix, Arizona 85007-3217
602-712-7601

April 2013

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Project Request

The Road Safety Assessment (RSA) of various locations was conducted at the request of the Colorado River Indian Tribes (CRIT). Assessment locations include:

- Mohave Road
 - Milepost 0 to 9
 - Patrick Road intersection
 - Poston Road intersection
 - Agnes Wilson Road intersection
 - Milepost 36 to 39
- Burns Road
 - 1st to 4th Avenue
 - 12th to 14th Avenue
- 4th Avenue at Indian School Road and at Booth Road
- 2nd Avenue at Agency Road

The study area is shown in Figure 1. An RSA was requested to improve safety and reduce crashes, and to identify safety projects to include in the new Long Range Transportation Plan.

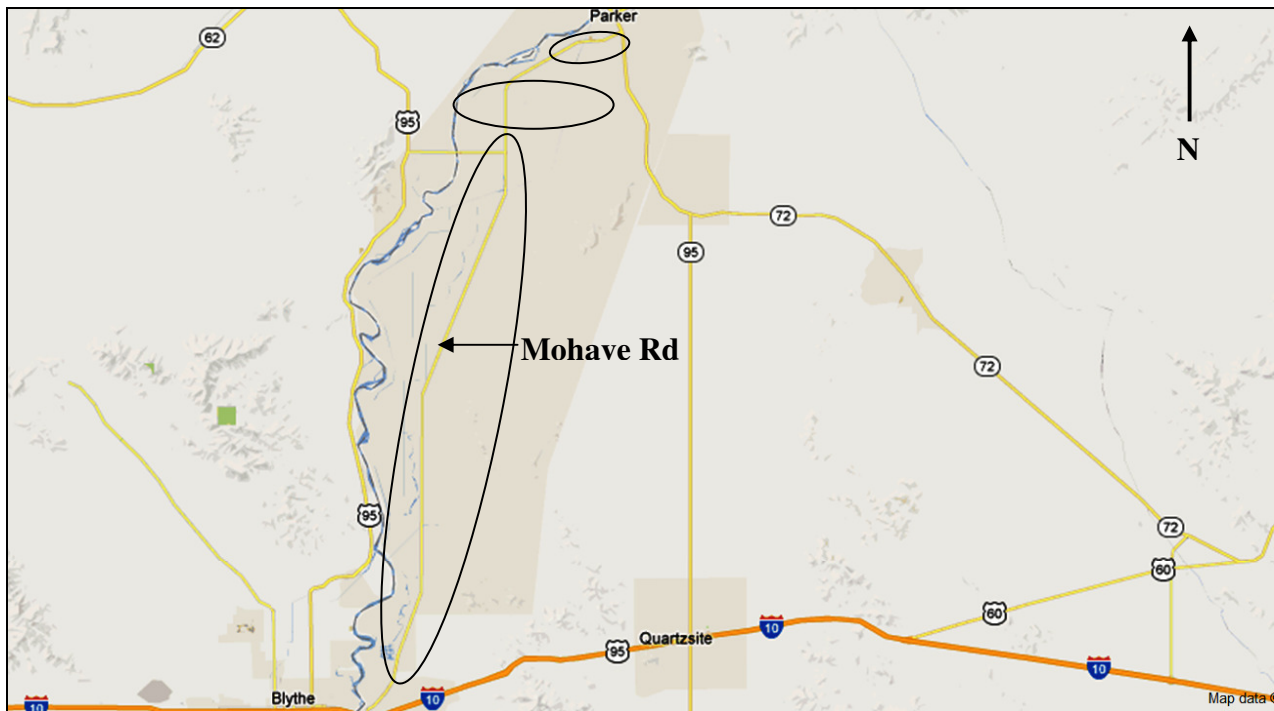


Figure 1: Study Area

RSA Team

The independent, multi-disciplinary RSA team was led by Mike Blankenship, the Arizona RSA Program Manager. The RSA team included:

- Greg Fisher, CRIT Planning
- Hannah Harper, CRIT Police Department
- Don Sneed, ADOT Multimodal Planning
- Tomi St. Mars, RN, MSN, CEN, FAEN, AZ Dept. of Health Services, Injury Prevention
- Richard Weeks, P.E., PTOE, ADOT Traffic Safety Section

RSA Process

A Road Safety Assessment is a formal examination of user safety of a roadway by an independent, multi-disciplinary team which includes experienced and knowledgeable members. RSAs have been shown to help promote safety by: identifying a range of safety issues; promoting awareness of safer transportation planning, design, construction, and maintenance practices; integrating multimodal interests; and, more directly considering the effect of human factors, enforcement and education activities, and emergency responder practices.

The RSA team conducted this assessment to the best of its abilities within the time allotted. The initial recommendations are based upon background information provided during the Start-up and Preliminary Findings Meetings, an evaluation of recent crash data, and both day and night field reviews, as discussed in the following paragraphs. This information helped the RSA team identify potential opportunities to improve the safety performance of roads within the study limits. This information was initially presented at the Preliminary Findings Meeting. While every attempt has been made to identify potential safety issues, the safety performance of the roadway remains the responsibility of the roadway owner and roadway users.

The RSA team is available to provide additional clarification as the CRIT and the Bureau of Indian Affairs (BIA) review and respond to this report and pursue countermeasures.

Start-Up Meeting

The assessment team met with CRIT and BIA staff to discuss background information on February 27, 2013 at the Parker Indian Health Center. In addition to the RSA team members, participants included Sarah Snyder, IHS, Edward Hooper, BIA Colorado River Agency, Doris Burns, CRIT Health Services, and Ruben Carmona, CRIT Head Start. During the Start-up meeting background information was presented by the owners and the following topics were discussed:

- Canals
 - Headwalls
 - Road departure crashes into canal
 - Need participation from BIA Irrigation Branch
- Roadway lighting
- Pedestrian activity
 - Between Tribal offices and Town of Parker
 - Between subdivisions and Tribal offices, Town
- Saturation patrols and checkpoints are conducted
- Mock crash staged at high school every other year
- Coordination of multiple law enforcement agencies (CRIT, BIA, La Paz County, Town, DPS, Riverside County, San Bernardino County, Rangers, Fish and Game)
- Numerous school bus stops on Mohave Road

Field Reviews

Daytime field visits were conducted on Wednesday, February 27, 2013, and Thursday, February 28. A nighttime field visit was also conducted on Wednesday, February 28. The specific times of the site visits can be found on the RSA Agenda in the **Appendix**. The

weather was warm and dry. Site reviews consisted of driving and walking the roads and observing road users.

The RSA team noted several existing roadway features that appear to enhance safety in the study area, including:

- Good roadside recovery area
- Signing (intersection ahead, street name, stop ahead, chevrons)
- Raised pavement markers (RPMs)
- Object markers at headwalls
- Shoulders
- Transverse rumble strips
- Turn lanes
- Some breakaway sign posts
- Guardrail with breakaway terminals
- Flashing beacons
- Milepost markers
- Mailboxes set back from edge of road
- Community Safety Advisory Board
- CDC Motor Vehicle Injury Grant
- IHS Tribal Injury Prevention Grant
- School traffic safety events
- Helicopter transport at both hospitals
- CRIT Fire Department:
 - 24/7 coverage
 - Cover non-Tribal areas
 - 2-man stations
 - Automated external defibrillator (AED)
 - Community outreach/education

Some of these examples are highlighted in Figure 2.



Figure 2: Examples of Features that Appear to Enhance Safety in the Study Area

Preliminary Findings Meeting

The RSA team presented the preliminary findings to CRIT and BIA personnel on Friday, March 1, 2013 at the Parker Indian Health Center. In addition to the RSA team members, participants included Sarah Snyder, IHS, Doris Burns, CRIT, Packy Sevada, BIA, Isaac

Ampadu, IHS, Laryn Welsh, BIA, and Michael Driscoll, American Medical Response. Observations and potential opportunities for improvements were discussed during this meeting.

Physical Roadway Characteristics

Mohave Road, Burns Road, 4th Avenue, and 2nd Avenue are 2-lane roads. Traffic volumes were not available for these roads. Speed limits are as follows:

- Mohave Road: 55 mph (35 mph at Poston Road, 2nd Avenue, and 1st Avenue, 45 mph north of 1st Avenue)
- Burns Road: 45 mph
- 4th Avenue: 45 mph (35 mph at Booth Road)
- 2nd Avenue: 45 mph (35 mph at Agency Road)

Evaluation of Crash Data

For the crash data analysis, the most recent thirteen years of crash data (2000 through 2012) was collected from the ADOT Information Technology Group's Safety Data Mart, which is ADOT's crash database. Following is a summary of the crashes that occurred during this time period.

The following crash data is for:

- Mohave Road (69 crashes, 13 fatal crashes)
- Burns Road: 1st Avenue to 4th Avenue, 12th Avenue to 14th Avenue (4 crashes, 1 fatal)
- 4th Avenue at: Indian School Road, Booth Road (2 crashes)
- Agency Road at 2nd Avenue (1 crash)

76 crashes

Severity:

- 14 fatal crashes
- 5 incapacitating injury
- 7 non-incapacitating injury
- 10 possible injury
- 40 property damage only

Crash Type:

- 14 rollover (18%)
- 14 rear-end (18%)
- 13 fixed object (17%)
- 9 angle (12%)
- 6 sideswipe same direction (8%)
- 4 other non-collision (5%)
- 3 sideswipe opposite direction (4%)
- 3 head-on (4%)
- 2 left-turn (3%)
- 1 pedestrian (1%)
- 1 bicyclist (1%)
- 6 other (8%)

Light Conditions:

- 55% daylight
- 37% dark
- 8% dawn/dusk

Fatal Crash Type (14 fatal crashes, 20 fatalities):

- 5 overturn
- 3 angle
- 1 head-on
- 1 sideswipe opposite direction
- 1 rear-end
- 1 pedestrian
- 1 immersion
- 1 other fixed object

Fatal Crash Locations by Milepost:

- MP 6
- MP 20.3
- MP 23
- MP 23.9
- MP 24
- MP 27
- MP 29
- MP 36.7
- MP 37
- MP 38 (2)
- MP 38.3
- MP 38.6
- Burns Road at 14th Ave

Crashes by Year:

2000: 15 crashes

2001: 14 crashes

2002: 14 crashes

2003: 12 crashes, 1 fatal

2004: 4 crashes, 1 fatal

2005: 1 crash

2006: 3 crashes, 3 fatalities

2007: 3 crashes, 2 fatalities

2008: 2 crashes, 2 fatalities

2009: 3 crashes, 2 fatalities

2010: 0 crashes

2011: 5 crashes, 3 fatalities

2012: 0 crashes

Data from “Building a Foundation for Motor Vehicle Crash Injury Reduction on the Colorado River Indian Tribes Reservation” IHS report indicates that alcohol is involved in:

- 24% of all crashes, compared to statewide average of 5%
- 39% of injury crashes, compared to statewide average of 8%
- 63% of fatal crashes, compared to statewide average of 33%

The report also estimated seatbelt usage at 56%, compared to the statewide average of 83%.

Site Review Observations and Initial Recommendations

Education, Enforcement, and Emergency Medical Services

Traffic safety issues cannot be solved with engineering solutions alone, which is why the RSA team addresses the “4 Es” of safety: engineering, education, enforcement, and emergency medical services. This multidisciplinary approach is beneficial and can lead to leveraging of resources in these resource challenged times.

Preventability is determined by whether something could have been done (by an individual such as the caretaker or supervisor, or by the community as a whole) that would have prevented the death or injury. Preventing injuries and death is not always achievable and there are many challenges to implementing successful prevention interventions. The greatest challenge is to change behavior of individuals, followed by identification of funding streams for programs, limited people resources, apathy from individuals/community and the belief that bad things will happen to others but not to “me.”

On Going Prevention Efforts:

The Colorado River Indian Tribes have strong concern for the crashes that occur in the community as illustrated by the request to have this RSA. Efforts have occurred to ensure that homes in the community are numbered in order for public safety to locate and respond in the event of an emergency. The tribe has a 24/7 staffed fire department that provides first response for both tribal and non-tribal emergencies. The tribal police department has begun to use the state traffic crash report form which will allow uniformity with data collection. La Paz Regional Hospital is a Level IV trauma center and the community of Parker has two air ambulance companies (Native Air and Care Flight); ground emergency medical services are provided by a private ambulance service (American Medical Response).

American Indians and Alaska Natives (AI/AN) are at increased risk of motor-vehicle related injury and death with rates 1.5 to 3 times higher than rates for other Americans. To address this disparity, CRIT has received funding from the CDC’s Injury Center to tailor, implement, and evaluate evidence-based interventions to reduce motor vehicle-related injury and death in their communities. Additionally, CRIT has an Indian Health Service Tribal Injury Prevention Cooperative Agreement Program (TIPCAP) that provides multi-year funding to hire a full-time Injury Prevention Coordinator and to develop programs based on effective strategies or best practices in injury prevention. Both of these programs are demonstrating the value of having paid staff to address traffic safety and community injury prevention issues.

Recommendations:

Tribal employees should be required to use seatbelts when in a tribal vehicle. The Tribe should enact a primary seat belt law and consider stronger child passenger safety laws. Even though the State of Arizona does not have a primary seat belt law, several tribes in Arizona do have primary seat belt laws, which is very commendable. The Navajo Nation amended their child passenger safety law to include booster seats; this legislation could provide example language for the Colorado River Indian Tribes if they decide to pursue this recommendation. At the minimum, CRIT should align their child passenger safety ordinance to mirror Arizona's statute ARS 28-907.

It was noted during the interview with fire and EMS personnel that the town of Parker does not have 24/7 fire department coverage but CRIT does. CRIT should advocate to the town of Parker that adding this level of service is a necessary public safety benefit. At the minimum, CRIT should conduct a cost benefit analysis to determine what the costs of fire department coverage are to the tribe.

The community is served by two air ambulances, one of which is the Indian Health Service's contracted provider, Native Air. It is strongly recommended to use only the contracted provider and if a situation arises that the non-contracted air ambulance (Care Flight) is used that the providers document why this decision was made. The documentation will allow Indian Health Service to assess the provided contracted services.

As many as eight law enforcement agencies interact with the community. It is recommended that these agencies meet on a quarterly basis to discuss mutual issues.

From an injury prevention outreach perspective, it is recommended the TIPCAP and CDC funded motor vehicle projects consider addressing adolescent traffic safety using the Battle of the Belt and continue with the child passenger safety efforts.

Pavement Markings

Centerline and edgeline markings are faded or non-existent on many of the roads in the study area (Figures 3 and 4), including:

- Mohave Road between mileposts 0 and 9
- Burns Road
- Booth Road
- 4th Avenue
- Indian School Road

There are also missing raised pavement markers (RPMs) on some segments of road. Lack of pavement markings can contribute to lane departure crashes. Figure 5 shows nighttime views of sections of Burns Road with and without pavement markings and RPMs.



Figure 3: No Pavement Markings on Mohave Road near Milepost 1



Figure 4: No Pavement Markings on Burns Road



Figure 5: Sections of Burns Road With and Without Pavement Markings and RPMs

Pavement marking recommendations include:

- Install 6-inch wide centerline and edgeline markings with centerline RPMs on the southern section of Mohave Road (milepost 0 to 9), Burns Road, Booth Road, 4th Avenue, and Indian School Road
- If centerline and edgeline markings can't be installed, consider installing centerline RPMs at canal crossings and through curves

Signing

Most advance street name signs on Mohave Road are faded and difficult to read (Figure 6). It is recommended that the advance street name signs be upgraded to Manual on Uniform Traffic Control Devices (MUTCD) standards.



Figure 6: Advance Street Name Sign for Agnes Wilson Road

Stop Lines

Most stop lines are faded and located too far back from the intersection, limiting sight distance for motorists on the side road. For example, the stop line for the Tsoosie Road westbound approach to Mohave Road is located 42 feet from the intersection; combined with an embankment, this creates a sight obstruction for motorists entering the intersection from the stop line (Figure 7). It is recommended that the stop lines be refreshed and relocated closer to the intersection (the MUTCD allows stop lines to be located within 4 feet of the intersecting through lane).



Figure 7: Stop Line Location and Driver's View from the Stop Line on Westbound Tsoosie Road at Mohave Road

Pedestrians and Bicyclists

There are very few accommodations for pedestrians and bicyclists: no trails, sidewalks, or bike lanes. Figure 8 shows a bicyclist on 2nd Avenue riding toward Agency Road. Pedestrian and bicyclist recommendations include:

- Construct sidewalks/trails and install lighting along 1st Avenue from Mohave Road to Hospital, along Mohave Road from 1st to 2nd Avenues, and from the Mochen housing near Booth Road and 4th Avenue to the tribal offices on 2nd Avenue
- Coordinate with BIA Irrigation Branch to provide walking and biking facilities along the canals



Figure 8: Bicyclist on 2nd Avenue

Burns Road From 1st to 4th Avenue

Other than the bridge barrier and railing, there is nothing to keep vehicles that run off the road while approaching the canal crossing from plunging into the canal (Figure 9). The drainage ditch on the south side of Burns Road just east of 4th Avenue is in the recovery area and near an unpaved travel area (Figure 10).



Figure 9: Burns Road Canal Crossing East of 4th Avenue



Figure 10: Drainage Ditch Just East of 4th Avenue

Recommendations for the segment of Burns Road between 1st and 4th Avenues include:

- Install barrier extending from the bridge to along the side of the canal approximately 30 feet; if this can't be done, install object markers along the side of the canal
- Install delineators to delineate the drainage ditch just east of 4th Avenue

Burns Road From 12th to 14th Avenue

As with the canal crossing east of 4th Avenue, there is nothing to keep vehicles that run off the road while approaching the canal crossings east of 13th and 14th Avenues from plunging into the canal (Figure 11). There are inadequate post connections at the 12th Avenue bridge guardrail: bolts are loose and pulling away from the concrete (Figure 12). The object markers along the north side of the headwall east of 13th Avenue are in the wrong location (Figure 13); according to the MUTCD, the edge of the object marker that is closest to the road user shall be installed in line with the closest edge of the obstruction. The westbound direction of Burns Road has a Narrow Bridge sign for the 12th Avenue bridge, but there is no sign for the eastbound direction (Figure 14).

Recommendations for the segment of Burns Road between 12th and 14th Avenues include:

- At the canal crossings east of 13th and 14th Avenues install curved W-Beam guardrail extending from the crossing to approximately 30 feet along the side of the canal; if this can't be done, install object markers along the side of the canal
- Repair post connections at the 12th Avenue bridge
- Relocate object markers at the headwall east of 13th Avenue
- Install Narrow Bridge sign for westbound direction at 12th Avenue bridge



Figure 11: Burns Road Canal Crossings East of 14th and 13th Avenues



Figure 12: Inadequate Connections of Guardrail Posts to Concrete at 12th Avenue Bridge



Figure 13: Object Markers East of 13th Avenue Should Be Located at Edge of Headwall Closest to Road



Figure 14: Narrow Bridge Near 12th Avenue

2nd Avenue at Agency Road

2nd Avenue becomes Agency Road north of Mohave Road in a horizontal curve. The Tribal planner indicated that some motorists enter this curve at excessive speeds. The northbound approach to the curve has transverse rumble strips to encourage motorists to slow down before entering the curve. The southbound approach has a curve warning sign. Guardrail and chevrons have been installed along the curve; however, it appears that the guardrail and chevrons do not extend to the end of the curve on the south side (Figure 15).



Figure 15: Curve at 2nd Avenue and Agency Road. Note the Guardrail and Chevrons Do Not Extend Through the End of the Curve.

Recommendations for the horizontal curve at 2nd Avenue/Agency Road include:

- Extend the guardrail through the curve at the bottom of the hill
- Install additional chevron(s) through the curve at the bottom of the hill
- Install transverse rumble strips at the top of the hill where guardrail starts
- Install northbound curve warning sign with appropriate advisory speed plaque, and add advisory speed plaque to southbound curve sign
- Add reflective tabs to top of guardrail posts

4th Avenue at Indian School Road

This intersection is actually a sharp horizontal curve with stop signs. Field observations showed that many drivers do not stop at the unwarranted stop signs. Wooden barricades within the clear zone on the south side of the curve are not breakaway (Figure 16).

Graffiti-covered large arrow signs and stop sign are difficult to see (Figure 17). The irrigation ditch is within 6 feet of the edge of the road along the inside of the turning radius (Figure 18).



Figure 16: Wooden Barricades on Outside of Curve at 4th Avenue and Indian School Road Create a Fixed Object Hazard



Figure 17: Graffiti on Stop Sign and Large Arrow Sign Diminish Visibility of the Signs



Figure 18: Irrigation Ditch is 6 Feet from Edge of Road in Turning Radius

Recommendations for 4th Avenue at Indian School Road include:

- Remove stop signs, stop ahead signs, stop lines, and wooden barricades
- Install turn warning signs with appropriate advisory speed plaques
- Replace and relocate large arrow signs so they are in line with approaching traffic
- Install centerline markings and RPMs and edgelines through curve
- Install transverse rumble strips on the curve approaches

Figure 19 provides a sketch of these recommendations.



Figure 19: Sketch of Recommendations for 4th Avenue at Indian School Road

4th Avenue at Booth Road

4th Avenue becomes Booth Road in a horizontal curve. Transverse rumble strips have been installed on the curve approaches. There are multiple unpaved accesses within the curve that lead to the canal roads (Figure 20). A concrete barrier has been placed across one of the accesses apparently to prevent vehicles from entering; however, vehicles can maneuver around the barrier due to its location and gain access to the canal road. Chevrons on the east side do not extend to the end of the curve. Chevron spacing through the curve is approximately 200 feet. The MUTCD recommends chevron spacing of 120 feet for curve speeds of 35 to 45 mph.



Figure 20: Unpaved Accesses Leading from 4th Avenue/Booth Road to Canal Roads

Recommendations for 4th Avenue at Booth Road include:

- Relocate access road barrier closer to 4th Avenue to prohibit entrance
- Reduce chevron spacing to 120 feet and extend chevrons through the curve east along Booth Road
- Limit number of accesses to the canal roads in this curve

Mohave Road Southern Section (Mileposts 0 to 9):

The pavement markings on the southern section of Mohave Road (mileposts 0 to 9) are faded or non-existent, and the pavement is aged (Figure 21). The Welcome sign at milepost 0 is faded and may not command driver attention (Figure 22). Gateway signing can have a traffic calming influence on motorists entering a community.

Recommendations for the southern section of Mohave Road include:

- Rehabilitate the pavement with a chip seal treatment
- Install centerline markings and RPMs and edgeline markings to provide 11-foot lanes and 4 foot shoulders
- Install centerline and edgeline rumble strips
- Install a new “Welcome to CRIT” monument sign at milepost 0



Figure 21: Mohave Road Near Milepost 1. Note Pavement Condition and Lack of Markings



Figure 22: Welcome Sign at Milepost 0

Mohave Road at Poston Road

This location has turning movements and pedestrian activity due to Woody's convenience store, post office, residences, and the Poston Memorial Monument that are in the immediate vicinity. The intersection has uncontrolled access on all 4 quadrants (Figure 23). Large trucks parking at Woody's create a sight obstruction. Even though there are some street lights in the area, the intersection is not well-lit at night.



Figure 23: Uncontrolled Access at the Mohave Road/Poston Road Intersection

Recommendations for the Mohave Road/Poston Road intersection include:

- Install pedestrian crossing warning signs on the Mohave Road approaches
- Refresh pavement markings (turn lanes, edgelines, centerlines)
- Construct sidewalks/curb and gutter along the intersection legs
- Upgrade street lighting

Figure 24 provides a sketch of these recommendations.

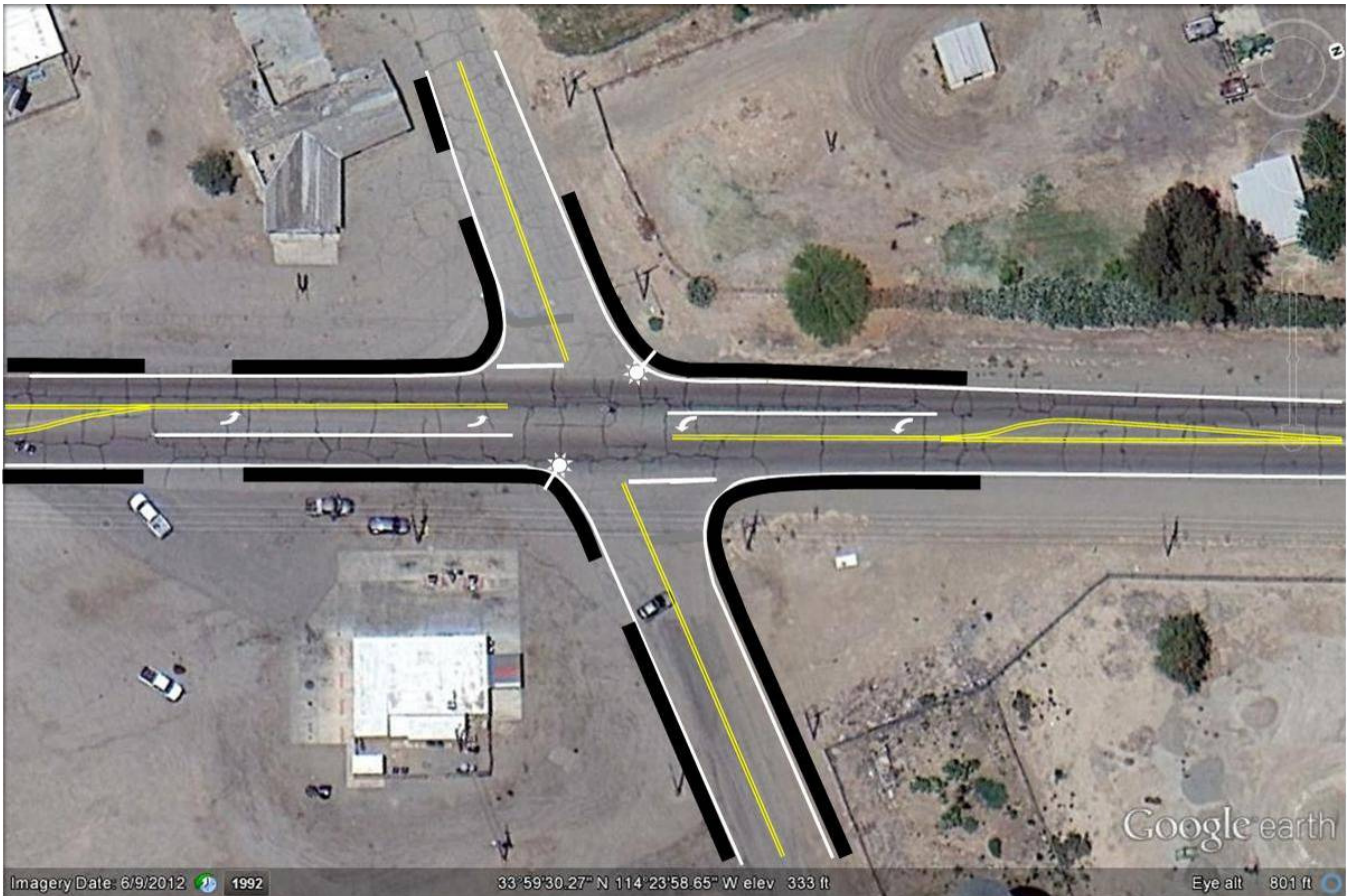


Figure 24: Sketch of Recommendations for the Mohave Road/Poston Road Intersection

Mohave Road at Patrick Road

It is difficult to see the Patrick Road intersection from the northbound approach due to the canal crossing and guardrail (Figure 25). The guardrail on the east side of the crossing has been damaged (Figure 26). The curb in front of the guardrail reduces crashworthiness of the guardrail (Figure 27). There is no barrier to keep vehicles that run off the road from striking the concrete structure (Figure 28) or falling into the canal (Figure 29). Chevron spacing in the curve is approximately 250 feet (Figure 30); the MUTCD recommends 160 foot spacing for curve speeds of 50 to 60 mph.



Figure 25: Northbound Approach to Patrick Road Intersection



Figure 26: Damaged Guardrail at Canal Crossing near Patrick Road



Figure 26 Continued: Damaged Guardrail at Canal Crossing near Patrick Road

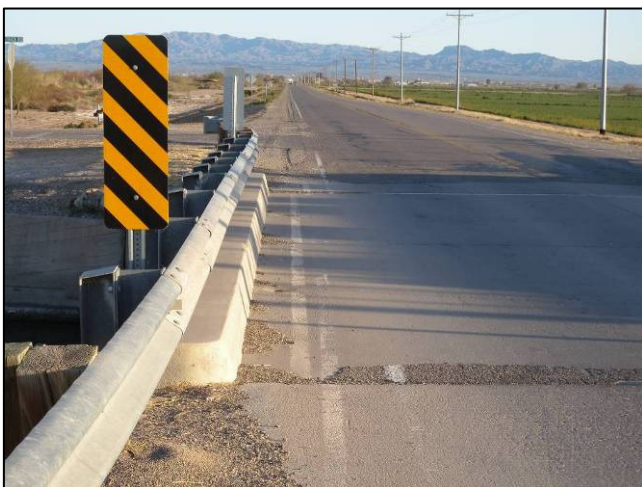


Figure 27: Curb in Front of Guardrail



Figure 28: No Barrier to Keep Vehicles from Striking Concrete Structure



Figure 29: Southbound Mohave Road Approach to Patrick Road Canal Crossing



Figure 30: Chevrons South of Patrick Road

Recommendations for Mohave Road at Patrick Road include:

- Extend guardrail on northbound approach to prevent errant vehicles from striking the concrete structure
- Extend guardrail on southbound approach and relocate Patrick Road approach approximately 150 feet north
- Repair damaged guardrail and posts
- Block out guardrail to position the guardrail face flush with the curb
- Reduce chevron spacing to 160 feet by installing additional chevrons
- Install reflective tabs on guardrail posts

Mohave Road at Agnes Wilson Road

The team observed higher speeds (55 mph speed limit), higher volumes, and more numerous turning movements at this intersection than at other intersections on Mohave Road. Commercial activity at the intersection includes the truck scales, which creates large truck activity. The left-turn lanes on Mohave Road are approximately 180 feet long (including taper and storage length), which is too short for the current operating speeds. The turn lane pavement markings are faded (Figure 31).

There are two closely spaced intersection warning signs (both directions between Agnes Wilson Road and Patrick Road) for Eddy Road and 9th Avenue (Figure 32).

Recommendations for Mohave Road at Agnes Wilson Road include:

- Reduce the speed limit to 35 mph
- If the speed limit is not reduced, increase the length of the left-turn lanes
- Refresh intersection pavement markings (Figure 33)
- Replace intersection warning signs for Eddy Road and 9th Avenue with Double Side Road intersection warning signs (Figure 34)



Figure 31: Aerial View of Mohave Road/Agnes Wilson Road Intersection



Figure 32: Closely Spaced Intersection Warning Signs for Eddy Road and 9th Avenue

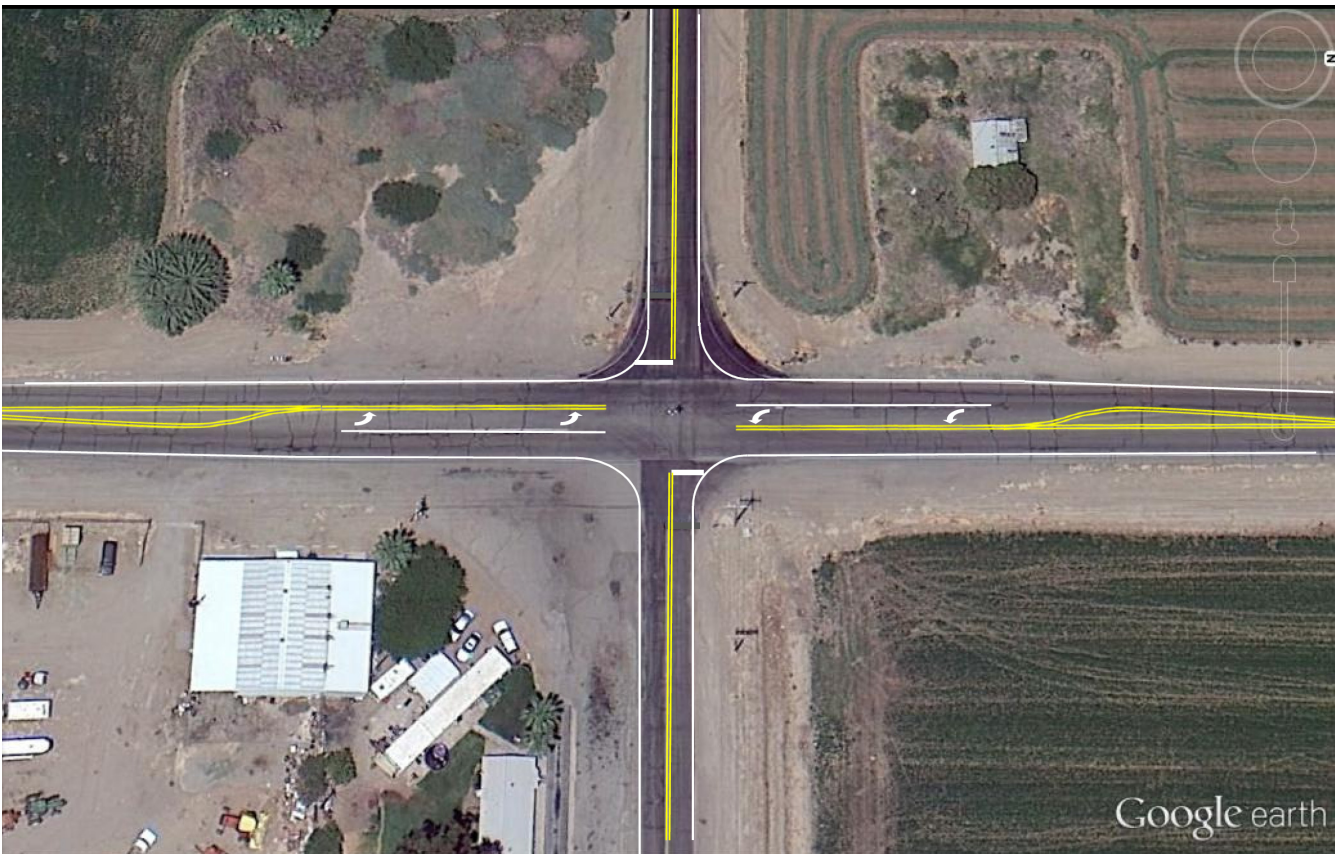


Figure 33: Sketch of Recommendations for the Mohave Road/Poston Road Intersection



Figure 34: Double Side Road Intersection Warning Sign

Mohave Road at the Head Start School

The speed limit at the Head Start School is 45 mph; however, a spot speed check conducted by the RSA team showed many vehicles traveling at speeds of 55 to 60 mph in front of the school. Even though there is a no passing zone at the school, the RSA team vehicle was passed (while traveling at the speed limit). There is no defined access at the school, leading to vehicles pulling on and off of Mohave Road at multiple locations (Figure 35). Vehicles pulling onto the shoulder at the mailboxes just north of the school (southwest corner of Mohave Road/Indian School Road intersection) lead to shoulder erosion and create a potential hazard for motorists along Mohave Road (Figure 36).



Figure 35: Undefined Access at Head Start



Figure 36: Mailboxes Near Head Start

Recommendations for Mohave Road at the Head Start School include:

- Create a reduced speed school zone and install solar powered “35 MPH When Flashing” signs
- Implement photo enforcement for speeding
- Relocate mailboxes to a cluster mailbox approximately 100 feet west of Mohave Road on the north side of Indian School Road
- Designate a defined school entrance on Indian School Road, and close the undefined access along Mohave Road (with curb and gutter, vegetation, etc.)

Figure 37 provides a sketch of the recommendations.

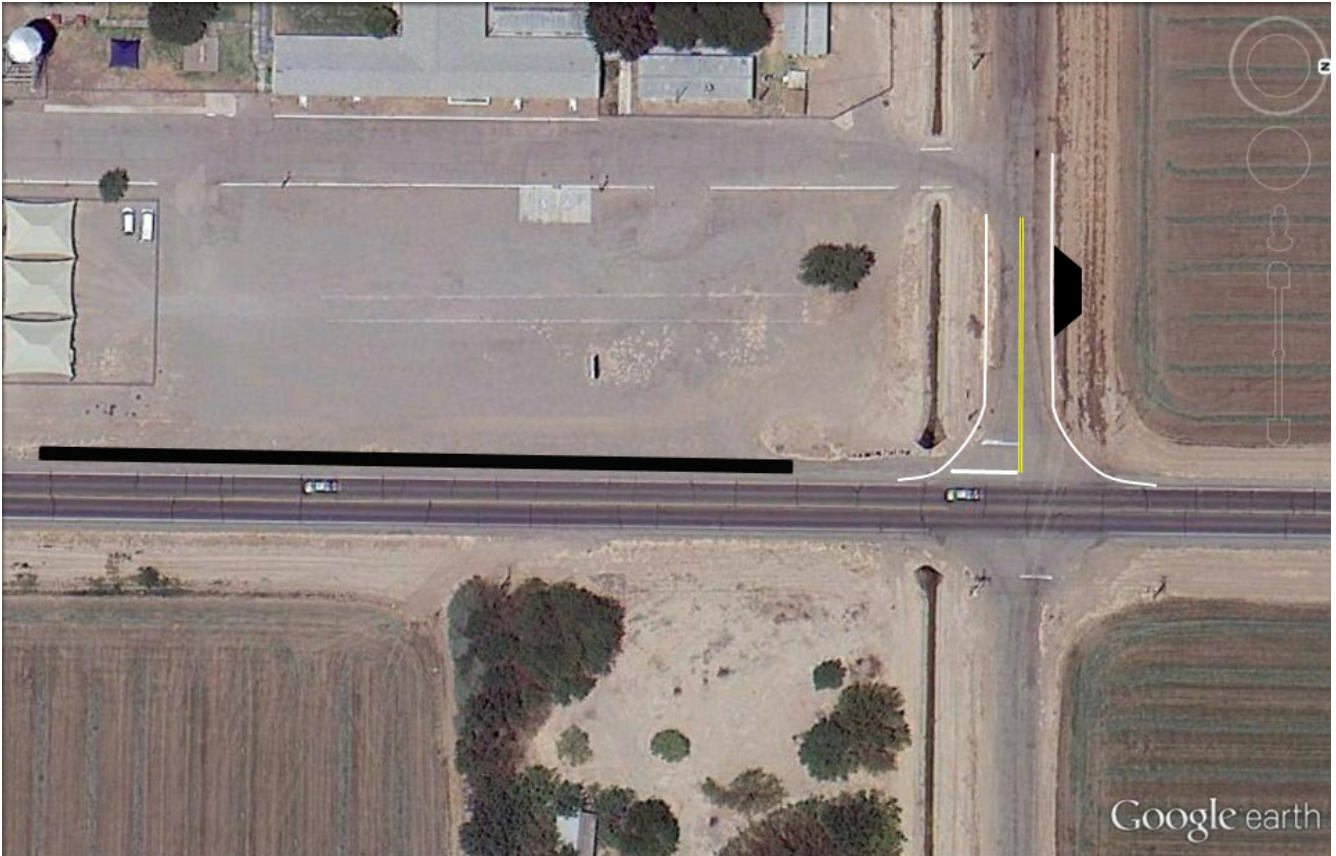


Figure 37: Sketch of Recommendations for Mohave Road at Head Start School

Mohave Road at 2nd Avenue

Tribal offices are located at this intersection, and the rodeo grounds and a park are nearby, leading to numerous turning movements and pedestrian activity. The intersection is dark at night due to lack of street lighting. The speed limit decreases from 55 to 35 mph for the northbound approach and from 45 to 35 mph for the southbound approach; the Tribe noted that excessive speeds are an issue at this location. The flashing beacon is 14.5 feet above the road surface (Figure 38); the MUTCD states that the bottom of the signal housing shall be at least 15 feet above the pavement. This beacon has been struck by large vehicles in the past.



Figure 38: Flashing Beacon at Mohave Road/2nd Avenue Intersection

Recommendations for Mohave Road at 2nd Avenue include:

- Install a 45 mph speed zone between the 55 and 35 mph speed zones for the northbound approach (install 45 mph sign south of Rodeo Road)
- Install solar-powered speed feedback signs on the approaches to 2nd Avenue
- Elevate the flashing beacon; remove beacon if it can't be elevated
- Install street lighting
- Install pedestrian crossing warning signs on Mohave Road
- Refresh intersection pavement markings
- Install guide signing for Tribal Government Complex
- Conduct pedestrian crossing evaluation to determine if a mid-block pedestrian crossing treatment is warranted

Mohave Road at 1st Avenue

There are no turn lanes on Mohave Road at 1st Avenue; the Tribe indicated that there are frequent turning movements at this intersection. The intersection is at the bottom of a downgrade and just beyond a horizontal curve for westbound traffic.

The westbound Mohave Road speed limit changes from 45 to 35 mph on the downgrade and in the horizontal curve. There are redundant Speed Reduced Ahead and 35 mph Speed Zone signs for westbound Mohave Road east and west of 1st Avenue.

Recommendations for Mohave Road at 1st Avenue include:

- Conduct a turn lane analysis, and if needed, construct turn lanes on Mohave Road at 1st Avenue
- Relocate the 35 mph Speed Zone sign and Speed Reduced Ahead sign for westbound Mohave Road to a location east of the horizontal curve and downgrade
- Remove the Speed Reduced Ahead sign west of 1st Avenue

Suggested Improvements/Countermeasures

The following table summarizes the RSA team's observations and potential opportunities to improve safety. These suggested improvements/countermeasures are presented as options for consideration; the road owner may also identify other effective alternative improvements and countermeasures. While every attempt has been made to identify potential safety issues and provide countermeasure options, the safety performance of the roadway remains the responsibility of the roadway owner and roadway users.

Next Steps

In order to complete this RSA, the RSA Team requests that the road owners prepare a written response that addresses the potential safety issues and countermeasures for consideration highlighted in the following table. This response can be sent to the RSA Program Manager and should identify how each of the safety issues will be addressed or give the basis for why they won't be addressed. The RSA Program Manager can provide an example response letter and the following table in a Word document to assist in the response. Send the response letter to:

Mike Blankenship
Arizona RSA Program
1615 W. Jackson St. MD065R
Phoenix, AZ 85007
mblankenship@azdot.gov

POTENTIAL SAFETY ISSUE	DESCRIPTION	COUNTERMEASURES FOR CONSIDERATION
<p style="text-align: center;">Education, Enforcement, and Emergency Medical Services</p>	<ul style="list-style-type: none"> • Traffic safety issues cannot be solved with engineering solutions alone, which is why the RSA team addresses the “4 Es” of safety: engineering, education, enforcement, and emergency medical services 	<ul style="list-style-type: none"> • Require Tribal employees to use seatbelts when in a tribal vehicle • Enact a primary seat belt law and consider stronger child passenger safety laws (at minimum, CRIT should align their child passenger safety ordinance to mirror Arizona’s statute ARS 28-907) • Advocate to the town of Parker that adding 24/7 fire department coverage is a necessary public safety benefit; at minimum, CRIT should conduct a cost benefit analysis to determine the costs of providing fire department coverage to the Town of Parker • Use only the contracted air ambulance provider (Native Air) and if a situation arises when the non-contracted air ambulance (Care Flight) must be used, the providers should document why this decision was made. The documentation will allow Indian Health Service to assess the provided contracted services. • Conduct quarterly meetings of the multiple law enforcement agencies serving the community to discuss mutual issues • Continue with the child passenger safety efforts of the TIPCAP and CDC funded motor vehicle projects, and consider addressing adolescent traffic safety using the Battle of the Belt

POTENTIAL SAFETY ISSUE	DESCRIPTION	COUNTERMEASURES FOR CONSIDERATION
Pavement Markings	<ul style="list-style-type: none"> • Centerline and edgeline markings are faded or non-existent on many of the roads in the study area, including: <ul style="list-style-type: none"> • Mohave Road between mileposts 0 and 9 • Burns Road • Booth Road • 4th Avenue • Indian School Road • There are also missing raised pavement markers (RPMs) on some segments of road. Lack of pavement markings can contribute to lane departure crashes. 	<ul style="list-style-type: none"> • Install 6-inch wide centerline and edgeline markings with centerline raised pavement markers (RPMs) on the southern section of Mohave Road (milepost 0 to 9), Burns Road, Booth Road, 4th Avenue, and Indian School Road • If centerline and edgeline markings can't be installed, consider installing centerline RPMs at canal crossings and through curves
Signing	<ul style="list-style-type: none"> • Most advance street name signs on Mohave Road are faded and difficult to read 	<ul style="list-style-type: none"> • Upgrade advance street name signs to Manual on Uniform Traffic Control Devices (MUTCD) standards
Stop Lines	<ul style="list-style-type: none"> • Most stop lines are faded and located too far back from the intersection, limiting sight distance for motorists on the side road. For example, the stop line for the Tsosie Road westbound approach to Mohave Road is located 42 feet from the intersection; combined with an embankment, this creates a sight obstruction for motorists entering the intersection from the stop line. 	<ul style="list-style-type: none"> • Refresh and relocate stop lines closer to the intersection (the MUTCD allows stop lines to be located within 4 feet of the intersecting through lane)
Pedestrians and Bicyclists	<ul style="list-style-type: none"> • There are very few accommodations for pedestrians and bicyclists: no trails, sidewalks, or bike lanes 	<ul style="list-style-type: none"> • Construct sidewalks/trails and install lighting along 1st Avenue from Mohave Road to Hospital, along Mohave Road from 1st to 2nd Avenues, and from the Mochen housing near Booth Road and 4th Avenue to the tribal offices on 2nd Avenue • Coordinate with BIA Irrigation Branch to provide walking and biking facilities along the canals

POTENTIAL SAFETY ISSUE	DESCRIPTION	COUNTERMEASURES FOR CONSIDERATION
Burns Road from 1st to 4th Avenue	<ul style="list-style-type: none"> • Other than the bridge barrier and railing, there is nothing to keep vehicles that run off the road while approaching the canal crossing from plunging into the canal • The drainage ditch on the south side of Burns Road just east of 4th Avenue is in the recovery area and near an unpaved travel area 	<ul style="list-style-type: none"> • Install barrier extending from the bridge to along the side of the canal approximately 30 feet; if this can't be done, install object markers along the side of the canal • Install delineators to delineate the drainage ditch just east of 4th Avenue
Burns Road from 12th to 14th Avenue	<ul style="list-style-type: none"> • As with the canal crossing east of 4th Avenue, there is nothing to keep vehicles that run off the road while approaching the canal crossings east of 13th and 14th Avenues from plunging into the canal • There are inadequate post connections at the 12th Avenue bridge guardrail: bolts are loose and pulling away from the concrete • The object markers along the north side of the headwall east of 13th Avenue are in the wrong location; according to the MUTCD, the edge of the object marker that is closest to the road user shall be installed in line with the closest edge of the obstruction • The westbound direction of Burns Road has a Narrow Bridge sign for the 12th Avenue bridge, but there is no sign for the eastbound direction 	<ul style="list-style-type: none"> • At the canal crossings east of 13th and 14th Avenues install curved W-Beam guardrail extending from the crossing to approximately 30 feet along the side of the canal; if this can't be done, install object markers along the side of the canal • Repair post connections at the 12th Avenue bridge • Relocate object markers at the headwall east of 13th Avenue • Install Narrow Bridge sign for westbound direction at 12th Avenue bridge
2nd Avenue at Agency Road	<ul style="list-style-type: none"> • 2nd Avenue becomes Agency Road north of Mohave Road in a horizontal curve. The Tribal planner indicated that some motorists enter this curve at excessive speeds. The northbound approach to the curve has transverse rumble strips to encourage motorists to slow down before entering the curve. The southbound approach has a curve warning sign. • Guardrail and chevrons have been installed along the curve; however, it appears that the guardrail and chevrons do not extend to the end of the curve on the south side 	<ul style="list-style-type: none"> • Extend the guardrail through the curve at the bottom of the hill • Install additional chevron(s) through the curve at the bottom of the hill • Install transverse rumble strips at the top of the hill where guardrail starts • Install northbound curve warning sign with appropriate advisory speed plaque, and add advisory speed plaque to southbound curve sign • Add reflective tabs to top of guardrail posts

POTENTIAL SAFETY ISSUE	DESCRIPTION	COUNTERMEASURES FOR CONSIDERATION
<p>4th Avenue at Indian School Road</p>	<ul style="list-style-type: none"> • This intersection is actually a sharp horizontal curve with stop signs. Field observations showed that many drivers do not stop at the unwarranted stop signs. • Wooden barricades within the clear zone on the south side of the curve are not breakaway. • Graffiti-covered large arrow signs and stop sign are difficult to see • The irrigation ditch is 6 feet from the edge of the road along the turning radius 	<ul style="list-style-type: none"> • Remove stop signs, stop ahead signs, stop lines, and wooden barricades • Install turn warning signs with appropriate advisory speed plaques • Replace and relocate large arrow signs so they are in line with approaching traffic • Install centerline markings and RPMs and edgelines through curve • Install transverse rumble strips on the curve approaches
<p>4th Avenue at Booth Road</p>	<ul style="list-style-type: none"> • 4th Avenue becomes Booth Road in a horizontal curve. Transverse rumble strips have been installed on the curve approaches. • There are multiple unpaved accesses within the curve that lead to the canal roads. A concrete barrier has been placed across one of the accesses apparently to prevent vehicles from entering; however, vehicles can maneuver around the barrier due to its location and gain access to the canal road. • Chevrons on the east side do not extend to the end of the curve • Chevron spacing through the curve is approximately 200 feet. The MUTCD recommends chevron spacing of 120 feet for curve speeds of 35 to 45 mph. 	<ul style="list-style-type: none"> • Relocate access road barrier closer to 4th Avenue to prohibit entrance • Reduce chevron spacing to 120 feet and extend chevrons through the curve east along Booth Road • Limit number of accesses to the canal roads in this curve
<p>Mohave Road Southern Section (Mileposts 0 to 9)</p>	<ul style="list-style-type: none"> • The pavement markings on the southern section of Mohave Road (mileposts 0 to 9) are faded or non-existent, and the pavement is aged • The Welcome sign at milepost 0 is faded and may not command driver attention. Gateway signing can have a traffic calming influence on motorists entering a community. 	<ul style="list-style-type: none"> • Rehabilitate the pavement with a chip seal treatment • Install centerline markings and RPMs and edgeline markings to provide 11-foot lanes and 4 foot shoulders • Install centerline and edgeline rumble strips • Install a new “Welcome to CRIT” monument sign at milepost 0

POTENTIAL SAFETY ISSUE	DESCRIPTION	COUNTERMEASURES FOR CONSIDERATION
Mohave Road at Poston Road	<ul style="list-style-type: none"> • This location has turning movements and pedestrian activity due to Woody's convenience store, post office, residences, and the Poston Memorial Monument that are in the immediate vicinity • The intersection has uncontrolled access on all 4 quadrants • Large trucks parking at Woody's create a sight obstruction • Even though there are some street lights in the area, the intersection is not well-lit at night 	<ul style="list-style-type: none"> • Install pedestrian crossing warning signs on the Mohave Road approaches • Refresh pavement markings (turn lanes, edgelines, centerlines) • Construct sidewalks/curb and gutter along the intersection legs • Upgrade street lighting
Mohave Road at Patrick Road	<ul style="list-style-type: none"> • It is difficult to see the Patrick Road intersection from the northbound approach due to the canal crossing and guardrail • The guardrail on the east side of the crossing has been damaged. The curb in front of the guardrail reduces crashworthiness of the guardrail. • There is no barrier to keep vehicles that run off the road from striking the concrete structure or falling into the canal • Chevron spacing in the curve is approximately 250 feet; the MUTCD recommends 160 foot spacing for curve speeds of 50 to 60 mph. 	<ul style="list-style-type: none"> • Extend guardrail on northbound approach to prevent errant vehicles from striking the concrete structure • Extend guardrail on southbound approach and relocate Patrick Road approach approximately 150 feet north • Repair damaged guardrail and posts • Block out guardrail to position the guardrail face flush with the curb • Reduce chevron spacing to 160 feet by installing additional chevrons • Install reflective tabs on guardrail posts
Mohave Road at Agnes Wilson Road	<ul style="list-style-type: none"> • The team observed higher speeds (55 mph speed limit), higher volumes, and more numerous turning movements at this intersection than at other intersections on Mohave Road • Commercial activity at the intersection includes the truck scales, which creates a high amount of large truck activity • The left-turn lanes on Mohave Road are approximately 180 feet long (including taper and storage length), which is too short for the current operating speeds 	<ul style="list-style-type: none"> • Reduce the speed limit to 35 mph • If the speed limit is not reduced, increase the length of the left-turn lanes • Refresh intersection pavement markings • Replace intersection warning signs for Eddy Road and 9th Avenue with Double Side Road intersection warning signs

	<ul style="list-style-type: none"> • The turn lane pavement markings are faded • There are two closely spaced intersection warning signs (both directions between Agnes Wilson Road and Patrick Road) for Eddy Road and 9th Avenue 	
Mohave Road at the Head Start School	<ul style="list-style-type: none"> • The speed limit at the Head Start School is 45 mph; however, a spot speed check conducted by the RSA team showed many vehicles traveling at speeds of 55 to 60 mph in front of the school • Even though there is a no passing zone at the school, the RSA team vehicle was passed (while traveling at the speed limit) • There is no defined access at the school, leading to vehicles pulling on and off of Mohave Road at multiple locations • Vehicles pulling onto the shoulder at the mailboxes just north of the school (southwest corner of Mohave Road/Indian School Road intersection) lead to shoulder erosion and create a potential hazard for motorists along Mohave Road 	<ul style="list-style-type: none"> • Create a reduced speed school zone and install solar powered “35 MPH When Flashing” signs • Implement photo enforcement for speeding • Relocate mailboxes to a cluster mailbox approximately 100 feet west of Mohave Road on the north side of Indian School Road • Designate a defined school entrance on Indian School Road, and close the undefined access along Mohave Road (with curb and gutter, vegetation, etc.)
Mohave Road at 2nd Avenue	<ul style="list-style-type: none"> • Tribal offices are located at this intersection, and the rodeo grounds and a park are nearby, leading to numerous turning movements and pedestrian activity • The intersection is dark at night due to lack of street lighting • The speed limit decreases from 55 to 35 mph for the northbound approach and from 45 to 35 mph for the southbound approach; the Tribe noted that excessive speeds are an issue at this location • The flashing beacon is 14.5 feet above the road surface; the MUTCD states that the bottom of the signal housing shall be at least 15 feet above the pavement. This beacon has been struck by large vehicles in the past. 	<ul style="list-style-type: none"> • Install a 45 mph speed zone between the 55 and 35 mph speed zones for the northbound approach (install 45 mph sign south of Rodeo Road) • Install solar-powered speed feedback signs on the approaches to 2nd Avenue • Elevate the flashing beacon; remove beacon if it can't be elevated • Install street lighting • Install pedestrian crossing warning signs on Mohave Road • Refresh intersection pavement markings • Install guide signing for Tribal Government Complex • Conduct pedestrian crossing evaluation to

		determine if a mid-block pedestrian crossing treatment is warranted
<p>Mohave Road at 1st Avenue</p>	<ul style="list-style-type: none"> • There are no turn lanes on Mohave Road at 1st Avenue; the Tribe indicated that there are frequent turning movements at this intersection. The intersection is at the bottom of a downgrade and just beyond a horizontal curve for westbound traffic. • The westbound Mohave Road speed limit changes from 45 to 35 mph on the downgrade and in the horizontal curve • There are redundant Speed Reduced Ahead and 35 mph Speed Zone signs for westbound Mohave Road east and west of 1st Avenue 	<ul style="list-style-type: none"> • Conduct a turn lane analysis, and if needed, construct turn lanes on Mohave Road at 1st Avenue • Relocate the 35 mph Speed Zone sign and Speed Reduced Ahead sign for westbound Mohave Road to a location east of the horizontal curve and downgrade • Remove the Speed Reduced Ahead sign west of 1st Avenue

Appendix

**ROAD SAFETY ASSESSMENT AGENDA
COLORADO RIVER INDIAN TRIBES
BIA WESTERN REGION, COLORADO RIVER AGENCY**

Wednesday, February 27, 2013

- 10:00 AM Road Safety Assessment Start-up Meeting *All*
1. Road Safety Assessments: Objectives, Procedures *RSA Team*
2. Background on Study Area *Tribe/BIA*
Overview, History, Challenges, Specific Concerns
3. Questions and Answers *All*
- *The road safety assessment team will be led by Mike Blankenship, Arizona RSA Program Manager. The RSA Team includes Gregory Fisher (CRIT), Richard Weeks (ADOT), Don Sneed (ADOT), and Tomi St. Mars (Arizona Dept. of Health Services).*
 - *For the start-up meeting, information will be provided by Gregory Fisher, CRIT Tribal Planner.*

11:30 AM Break

12:30 PM Daytime Site Visits *RSA Team*

7:15 PM Nighttime Site Visits *RSA Team*

Thursday, February 28

7:30 AM Daytime Site Visits *RSA Team*

10:00 AM Work Session/Analysis *RSA Team*

11:30 AM Break

12:30 PM Work Session/Analysis *RSA Team*

Friday, March 1

8:30 AM Presentation of Preliminary Findings *All*

- *Findings Report to owner: March 29*
- *Owner's Response to findings: May 2*

10:30 AM Adjourn

All meetings will be conducted at the Indian Health Service Colorado River Service Unit at 12033 Agency Road, Parker.

Feb. 27: Computer Training Room

Feb. 28: Meditation Room

March 1: Medical Library

Appendix B – Roads to be added to Tribal Transportation Inventory, by Area

Table 17 – Big River Roads to be added to the Tribal Transportation Inventory

Road Name	From	To	Length (Mileage)
Big River, CA			
Achitl Rd	Dapishu Rd	Rio Vista Drive	0.91
Achitl Court	Achitl Rd	road end	0.08
Aksama Ct	Achitl Rd	road end	0.11
Asti Ct	Achitl Rd	road end	0.03
Ayal Ct.	Achitl Rd	road end	0.07
Castic Way	Achitl Rd	Cahto Rd	0.22
Cahto Rd	Achitl Rd	Rio Vista Drive	0.34
Cahto Ct	Cahto Rd	road end	0.11
Dapishu Rd	Hanemo Dr	Cupeno Ct.	0.83
Elawadi Ct.	Rio Vista Drive	road end	0.1
Guatay Rd	Dapishu Rd	Rio Vista Drive	0.23
Hanemo Dr	Rio Vista Drive	Dapishu Rd	0.74
Cupeno Ct	Dapishu Rd	road end	0.03
Dado Ct.	Hanemo Dr	road end	0.02
Homoa Ct	Hanemo Dr	road end	0.04
Isli Ct	Hanemo Dr	road end	0.1
Koip Ct.	Hanemo Dr	road end	0.03
Salulu Ct	Rio vista Dr	Rio vista Dr	0.44
Salulu Ct	Rio vista Dr	road end	0.09
Kuna Ct	Rio vista Dr	road end	0.06

Road Name	From	To	Length (Mileage)
Apache Way	Labacho Dr	road end	0.14
Pathway Trail	Apache Way	Labacho Dr	0.46
Mato Ct	Labacho Dr	road end	0.06
Labacho Drive	Rio Vista Drive	road end	0.67
Olema Trail	Rio Vista Drive	Pahway Trail	0.35
Tehama Trail	Labacho Drive	Labacho Drive	0.45
Toowah Ct	Tehama Trail	road end	0.04
Chat Ct.	Tehama Trail	road end	0.07
Carob Ave	Main St.	Railroad Ave	0.05
Yucca Ave	Main St.	Railroad Ave	0.06
A St.	Main St.	Railroad Ave	0.06
Main St.	Carob Ave	Oasis Ave	0.46
Calzona Ave	5th St.	Railroad Ave	0.33
3rd St.	Calzona Ave	Oasis Ave	0.24
4th St.	Calzona Ave	Oasis Ave	0.24
5th St.	Calzona Ave	Oasis Ave	0.24
Atacama Ave	5th St.	4th St.	0.14
Oasis Ave	5th St.	Railroad Ave	0.34
Mecca Ave	5th St.	4th St.	0.14
Gobi Ave	Main St.	Rio Vista Drive	1
Bluff Rd	Rio Vista Drive	road end	0.1
Rio Vista Drive	road end	Aqueduct Rd	8.06
Bobcat Trail	Rio Vista Drive	road end	0.25
Neenah Way	Rio Vista Drive	road end	0.05

Road Name	From	To	Length (Mileage)
Big Horn Ct	Rio Vista Drive	road end	0.06
Trading Post Trail	Rio Vista Drive	Del Ray Dr	0.14
Savano Ln	Del Ray Dr	Del Ray Dr	0.17
Del Ray Dr	Rio Vista Drive	Rio Vista Drive	3.74
Atnah Rd	Rio Vista Drive	Quapaw Trail	0.16
Quapaw Trail	Atnah Rd	Creete Rd	0.72
Choco Trail	Rio Vista Drive	Wintun Trail	0.59
Tonikin Trail	Atnah Rd	Creete Rd	0.77
Muskrat Trail	Del Ray Dr	road end	0.39
Muskrat Ln	Muskrat Trail	road end	0.18
Muskrat Ct	Muskrat Trail	road end	0.03
Pauba Rd	Del Ray Dr	road end	0.31
Chocco Rd	Del Ray Dr	road end	0.66
Acoma Trail	Choco Trail	road end	0.26
Koda Way	Pauba Rd	road end	0.06
Wintun Trail	Del Ray Dr	Papago Trail	0.32
Nokomis Trail	Quapaw Trail	Papago Trail	0.89
Nokomis Way	Nokomis Trail	road end	0.05
Nokomis Ct	Nokomis Trail	road end	0.04
Inyo Ct	Nokomis Trail	road end	0.03
Concho Ct	Nokomis Trail	road end	0.03
Tule Ct	Nokomis Trail	road end	0.03
Oneida Trail	Arcata Trail	road end	0.31
Arcata Trail	Wintun Trail	Nokomis Trail	0.25

Road Name	From	To	Length (Mileage)
Guyama Trail	Chocco Rd	Del Ray Dr	0.08
Papago Trail	Rio Vista Drive	Del Ray Dr	1.05
Papago Ct	Papago Trail	road end	0.03
Snoqualmie Trail	Seneca Trail	road end	0.53
Winema trail	Papago Trail	Huasna Trail	0.25
Huasna Trail	Papago Trail	Seneca Trail	0.66
Quinnault Trail	Winema trail	Seneca Trail	0.28
Seneca Trail	Papago Trail	Huasna Trail	0.27
Ukiah Trail	Del Ray Dr	Okanogan Trail	0.24
Okanogan Trail	Del Ray Dr	road end	0.16
Pony Ct	Quapaw Trail	road end	0.03
Canoe Ct	Quapaw Trail	road end	0.04
Papoose Way	Quapaw Trail	road end	0.06
Feather Way	Quapaw Trail	road end	0.09
Haiwee Ct	Quapaw Trail	road end	0.06
Squaw Ct	Quapaw Trail	road end	0.03
Creete Rd	Rio Vista Drive	Quapaw Trail	0.15
Yakima Trail	Del Ray Dr	road end	0.57
Wenatchee Trail	Del Ray Dr	road end	0.52
Umatilla Trail	Mohawk Trail	Kaniksu Trail	0.29
Ochoco Ct	Umatilla Trail	road end	0.04
Mohawk Trail	Wenatchee Trail	Pahaska Trail	0.39
Kaniksu Trail	Mohawk Trail	Pahaska Trail	0.53
Mono Ct	Kaniksu Trail	road end	0.04

Road Name	From	To	Length (Mileage)
Shaniko Trail	Yakima Trail	Mohawk Trail	0.5
Maize Ct	Del Ray Dr	road end	0.07
Pahaska Trail	Rio Vista Drive	Del Ray Dr	0.84
Pahaska Ct	Pahaska Trail	road end	0.06
Pahaska Way	Pahaska Trail	road end	0.07
Serrano Ct	road end	road end	0.15
Lakota Ct	Pahaska Trail	road end	0.08
Tonga Ct	Pahaska Trail	road end	0.07
Umpqua Ct	Rio Vista Drive	road end	0.08
Buffalo Ave	Rio Vista Drive	Little Rock Ave	0.34
Little Rock Ave	Rio Vista Drive	Del Ray Dr	0.42
Dakota Ave	Little Rock Ave	Rio Vista Drive	0.3
Wampum Ct	Dakota Ave	road end	0.05
Forest Dr	Del Ray Dr	road end	0.07
Coronado Dr	Del Ray Dr	Pima Ct	0.07
Pima Ct	Coronado Dr	road end	0.04
De Soto Rd	Coronado Dr	Capistrano Way	0.6
Arizona Street	Del Ray Dr	Rio Mesa Dr	0.3
Capistrano Way	Del Ray Dr	Chippewa Dr	1.54
Chippewa Dr	Del Ray Dr	Capistrano Way	0.11
Rio Mesa Dr	Old Parker Rd	62	2.94
Old Parker Rd	Rio Mesa Dr	road end	0.16
Blue Water Rd	Arrowhead Ave	road end	0.72
Camarillo Ave	Rio Vista Drive	Blue Water Rd	0.23

Road Name	From	To	Length (Mileage)
Turquoise Rd	Camarillo Ave	Yuma Ave	0.97
Hopi Ln	Camarillo Ave	Del Ray Dr	0.19
Comanche Rd	De Soto Rd	Pueblo Ave	0.41
Mojave Rd	Rio Mesa Dr	Pueblo Ave	0.28
Pueblo Ave	Comanche Rd	Mojave Rd	0.08
Sycamore Ct	Capistrano Way	road end	0.07
Mustang Ct	Capistrano Way	road end	0.06
Wingfoot Ct	Capistrano Way	road end	0.04
Barranca Ave	Rio Vista Drive	Capistrano Way	0.21
Mesquite Ct	Barranca Ave	road end	0.04
Capistrano Ct	Capistrano Way	road end	0.05
Yuma Ave	Capistrano Way	Rio Vista Drive	0.13
Arcadia Pl	Capistrano Way	road end	0.06
Arrowhead Ave	Del Ray Dr	Rio Vista Drive	0.29
Tecumseh Ave	Del Ray Dr	Turquoise Rd	0.2
Marina St	Del Ray Dr	road end	0.3
Marina St	Marina St	Marina Dr	0.09
Riverview Dr	Marina St	Marina Dr	0.11
Marina Dr	Marina St	Riverview Dr	0.11
Chaves Ct	Marina St	road end	0.03
Chaves Ct	Marina Dr	Marina Dr	0.23
Tenaya Ct	Rio Vista Drive	road end	0.16
Parker Rd	Railroad Ave	Modoc Trail	0.77
Modoc Trail	Del Ray Dr	Parker Rd	0.03

Road Name	From	To	Length (Mileage)
Buckskin Dr	Kansa Trail	Pampa Drive	1.54
Osage Trail	Kansa Trail	Kansa Trail	0.58
Kansa Trail	Osage Trail	Cochise Rd	0.49
Choctaw Trail	Buckskin Dr	Modoc Ln	1.11
Modoc Ln	Choctaw Trail	road end	0.07
Klamath Trail	Choctaw Trail	road end	0.46
Modoc Ct	Choctaw Trail	road end	0.05
Cochise Rd	Creek Rd	Klamath Trail	0.56
Tomahawk Trail	Buckskin Dr	Hawk Ct	0.72
Hawk Ct	Tomahawk Trail	road end	0.02
Creek Rd	Buckskin Dr	Hawk Ct	0.58
Hogan Way	Tomahawk Trail	Wigwam Way	0.21
Pomo Ct	Hogan Way	road end	0.08
Cree Ct	Hogan Way	road end	0.03
Wigwam Way	Buckskin Dr	Moccasin trail	0.15
Moccasin Trail	Choctaw Trail	Creek Rd	0.42
Sitting Bull Trail	Tomahawk Trail	Creek Rd	0.31
Choctaw Trail	Tomahawk Trail	Creek Rd	0.24
Geronimo Trail	Tomahawk Trail	Creek Rd	0.27
Modoc Way	Mohawk Trail	road end	0.06
Deerpath Rd	road end	Alamo Rd	2.79
Greystone Dr	Modoc Trail	Alamo Rd	1.07
Little Rock Ave	Modoc Trail	Buckskin Dr	0.77
Pawnee Trail	Little Rock Ave	Deerpath Rd	0.23

Road Name	From	To	Length (Mileage)
Kiowa Ln	Little Rock Ave	road end	0.08
Deer Path Ct	Deerpath Rd	road end	0.06
Blackfoot Trail	Creek Rd	road end	0.66
Navajo Trail	Little Rock Ave	Blackfoot Trail	0.47
Seminole Trail	Little Rock Ave	Shoeshone Trail	0.5
Navajo Ct	Navajo Trail	road end	0.04
Maricopa Trail	Navajo Trail	Blackfoot Trail	0.17
El Paseo St	Deerpath Rd	Rio Mesa Dr	0.64
Sioux Trail	El Paseo St	road end	0.09
Apache Way	Apache Dr	road end	0.15
Apache Dr	El Paseo St	Rio Mesa Dr	0.55
Shoeshone Trail	Buckskin Dr	El Paseo St	0.63
Deerpath Way	Deerpath Rd	Rio Mesa Dr	0.19
Tewa Trail	road end	road end	0.12
Zuni Ct	Buckskin Dr	road end	0.04
Ute Ct	Buckskin Dr	road end	0.03
Crow Ct	Buckskin Dr	road end	0.02
Pampa Dr	Deerpath Rd	road end	0.13
Cheyenne Ct	Deerpath Rd	road end	0.06
Paiute Trail	Apache Dr	Chula Vista St	0.21
Chula Vista St	Rio Mesa Dr	El Paseo St	0.37
Yuki Ct	Chula Vista St	road end	0.05
Chumash Dr	Deerpath Rd	Alamo Rd	0.55
Shapata Ct	Chumash Dr	road end	0.03

Road Name	From	To	Length (Mileage)
Arrow Dr	Chumash Dr	Chula Vista St	0.48
Arapaho Dr	Rio Mesa Dr	Arrow Dr	0.08
Chula Vista St	Deerpath Rd	Arrow Dr	0.43
Dinket Ct	Chula Vista St	Road end	0.03
Tai Ct	Chula Vista St	Road end	0.05
Moanalla Ct	Chula Vista St	Road end	0.08
Fox Trail	El Paseo St	Badger Trail	0.88
Fox Ln	Road end	Road end	0.12
Modoc Trail	Road end	Rio Mesa Dr	0.72
Beaver Ln	Fox Trail	Road end	0.06
Otter Ln	Fox Trail	Road end	0.04
Puma Ct	Fox Trail	Road end	0.04
Wolf Way	Fox Trail	Road end	0.02
Badger Trail	Kittatas	Modoc Trail	0.18
Naches Ct	Modoc Trail	Road end	0.08
Nisqually Trail	Modoc Trail	Greystone Dr	0.25
Hidden Oak Ln	Rio Mesa Dr	Greystone Dr	0.24
Clearbrook Rd	Rio Mesa Dr	Road end	0.12
Dorado Ct	Rio Mesa Dr	Road end	0.05
Alamo Rd	Rio Mesa Dr	RR Track	1.23
Alamo Rd	RR Track	Rio Vista Drive	0.2
Del Sol Ave	Greysstone Dr	Alamo Rd	0.5
Adelante Rd	Del Sol Ave	Alamo Rd	0.39
Adelante Ct	Adelante Rd	Road end	0.05

Road Name	From	To	Length (Mileage)
Arbolito Way	Las Palmas Dr	Road end	0.27
Arbolito Ct	Arbolito Way	Road end	0.07
Alamo Ct	Alamo Rd	Road end	0.04
Sierra Vista Drive	Deerpath Rd	Alamo Rd	0.56
Las Palmas Dr	Sierra Vista Drive	Alamo Rd	0.32
Campo Verde Rd	Deerpath Rd	Alamo Rd	0.53
Hiwat Dr	Sierra Vista Drive	Campo Verde Rd	0.08
Koloko Ct	Sierra Vista Drive	Road end	0.04
Tego Ct	Sierra Vista Drive	Road end	0.06
Capay Ln	Sierra Vista Drive	Road end	0.15
Valle Verde Way	Deerpath Rd	Alamo Rd	0.44
Arriba Rd	Valle Verde Way	Alamo Rd	0.29
Alamo Way	Alamo Rd	Road end	0.04
Kecham Trail	Rio Vista Drive	Rahun Ct	0.24
Rahun Ct	Rio Vista Drive	Rio Vista Drive	0.26
Suey Ct	Kecham Trail	Road end	0.03
Anya Ct	Kecham Trail	Road end	0.04
Waukesha Trail	SR 62	Badger Trail	0.84
Kittatas Trail	SR 62	Badger Trail	0.69
Yosemite Dr	Carlsbad Ave	Rio Mesa Dr	0.09
Carlsbad Ave	Road end	Road end	0.16
TTI Eagle Rd	Rio Mesa Dr	Road end	0.08
Whitesprings Rd	Rio Mesa Dr	Road end	0.04

Road Name	From	To	Length (Mileage)
Cougar Trail	Bobcat Trail	Road end	0.05
Mink Trail	Bobcat Trail	Bobcat Trail	0.34
Sherwood Ct	Rio Vista Drive	road end	0.26
Blue Water Drive	E Riverfront Drive	Road end	0.93
E Riverfront Drive	BlueWater Drive	Road end	0.92
N Moonlight Drive	BlueWater Drive	Paradise Lane	0.56
N Stardust Lane	BlueWater Drive	Paradise Lane	0.37
N Misty Lane	BlueWater Drive	BlueWater Drive	0.23
County Street	N Misty Lane	E Riverfront Drive	0.13
Paradise Lane	BlueWater Drive	E Riverfront Drive	0.19

Table 18 – Tribal Roads within Parker Town Limit to be added to the Tribal Transportation Inventory

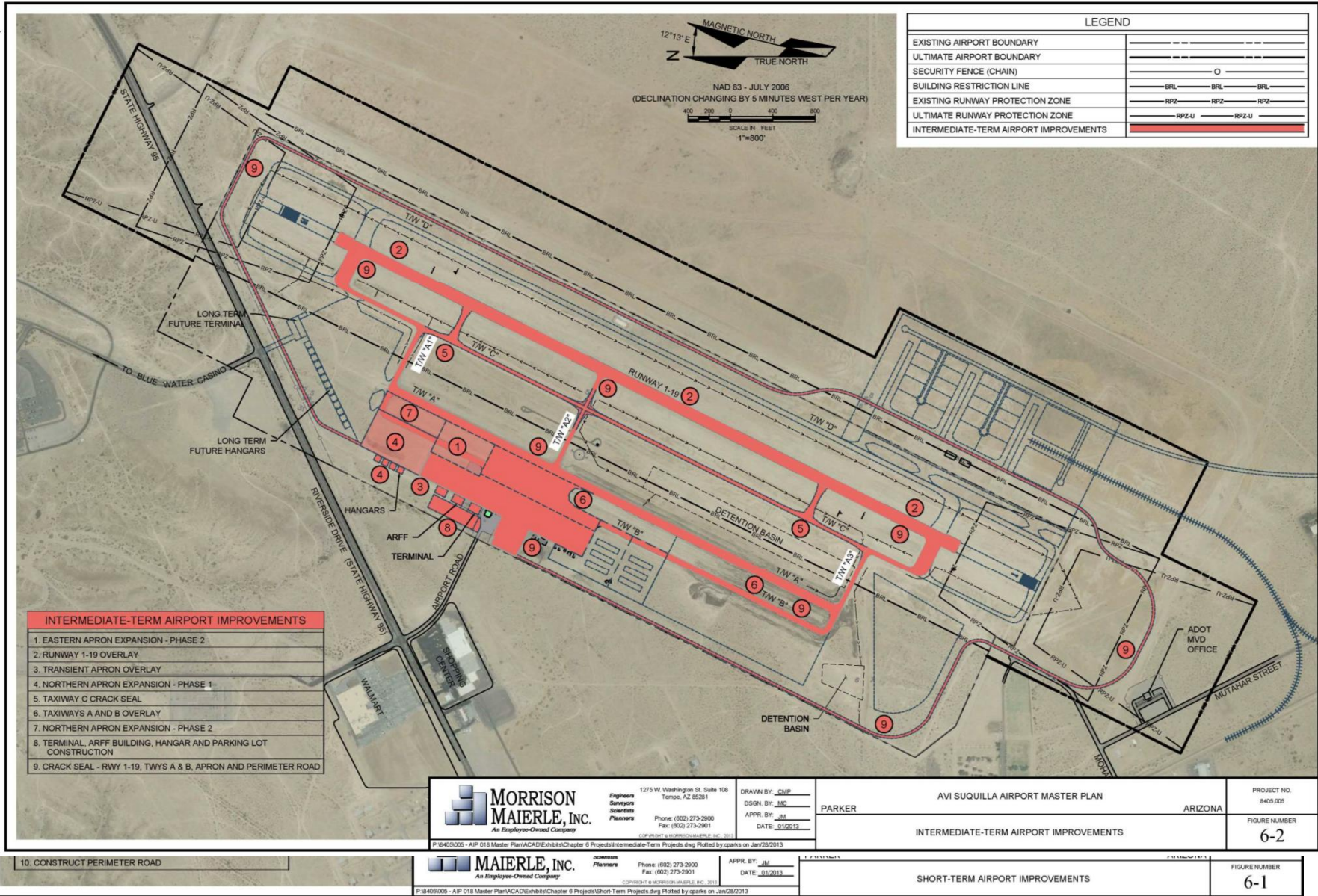
Road Name	From	To	Length (Mileage)
W 6th Street	Road end	S Chemehuevi Ave	0.45
W 7th Street	S Hopi Ave	Road end	0.54
W 8th Street	S Hopi Ave	Road end	0.54
W 9th Street	S Hopi Ave	S Desert Ave	0.31
S Hopi Ave	Agency Road	County Street	0.46
S Geronimo Ave	W 6th Street	SR 95	0.3
S Hope Ave	Road end	SR 95	0.38
S Fiesta Ave	Road end	W 8th Street	0.18
S Eagle Ave	Road end	W 8th Street	0.22
S Desert Ave	W 6th Street	W 8th Street	0.15
S Chemehuevi Ave	W 6th Street	W 9th Street	0.23
S Bronco Ave	W 7th Street	W 9th Street	0.15
W 9th Street	S Chemehuevi Ave	S Bronco Ave	0.08
County Street	W 7th Street	W 8th Street	0.26
W 4th Street	Road end	Ocotillo Ave	0.12
W 5th Street	S Quartz Ave	Ocotillo Ave	0.16
W 6th Street	S Quartz Ave	Ocotillo Ave	0.16
S Quartz Ave	W 5th Street	W 6th Street	0.1
Palo Verde Ave	Road end	W 6th Street	0.21
S Fiesta Ave	W 11th Street	W 15th Street	0.23
S Eagle Ave	Arizona Ave	W 15th Street	0.15
S Geronimo Ave	W 12th Street	W 18th Street	0.46

Road Name	From	To	Length (Mileage)
W 12th Street	S Geronimo Ave	S Fiesta Ave	0.08
Arizona Ave	S Geronimo Ave	S Eagle Ave	0.16
W 14th Street	S Geronimo Ave	S Eagle Ave	0.16
W 15th Street	S Geronimo Ave	S Eagle Ave	0.16

Table 19 – Other Roads to be added to the Tribal Transportation Inventory

Road Name	From	To	Length (Mileage)
Water Wheel			
Community Streets			1.6
Flamingo Road			
Flamingo Road	Twin Palms Drive	Laslo Lane	0.35
El Paseo Lane			
El Paseo Lane	Wind River Road	Twin Palms Drive	0.34
Levee Road			
Levee Road	Dam	Scott Rd	21.2
Levee Road	15 Ave	Bridge at Canal	9.87
Lazy D Subdivision			
Community Streets			1.69
Aha Quin Resort			
Community Streets			1.54
Shea Road			
Shea Rd	Mutahur Drive	East Reservation Boundary	3.76

Appendix C – Avi Suquilla Airport Master Plan Projects

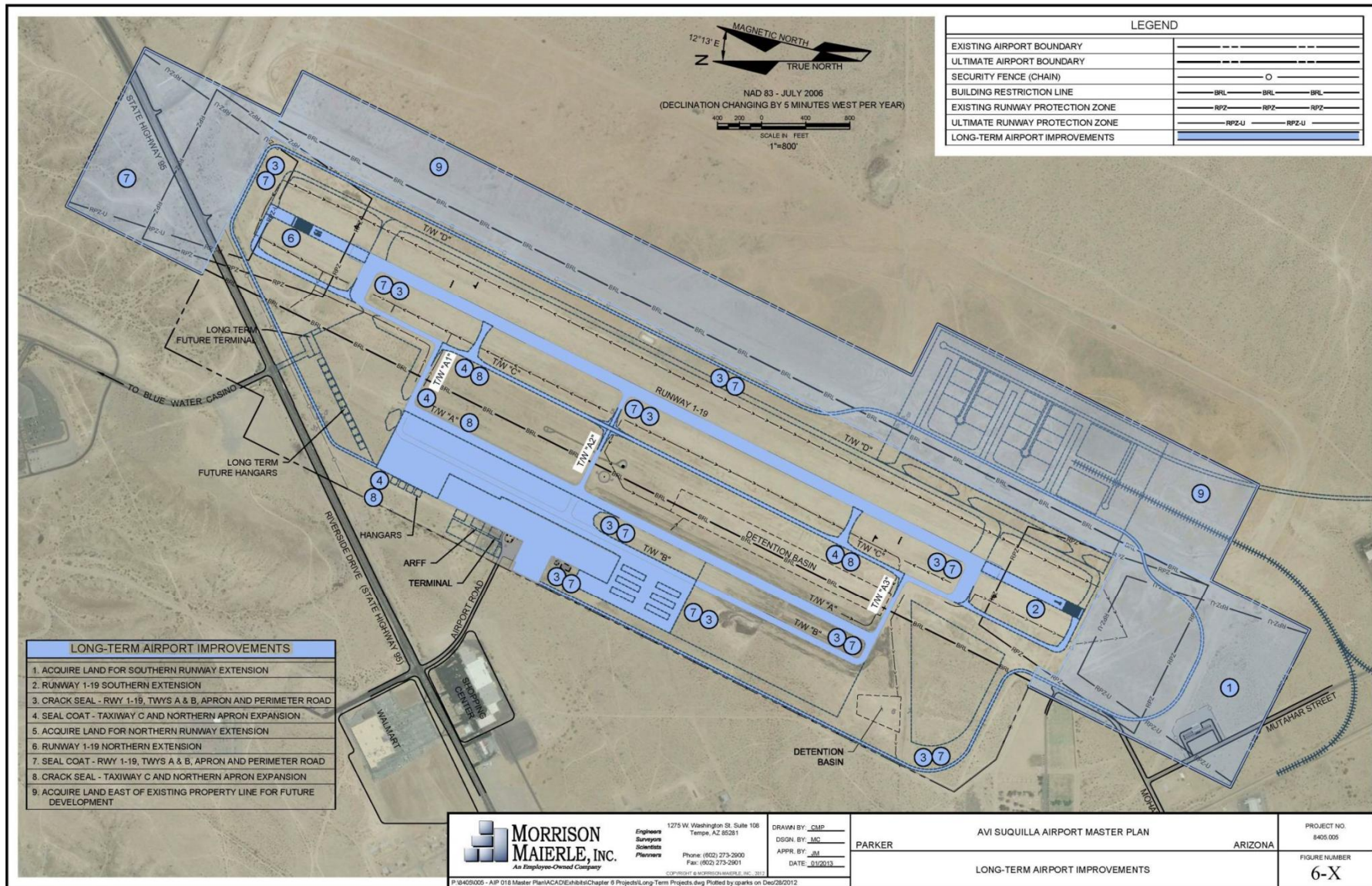


- INTERMEDIATE-TERM AIRPORT IMPROVEMENTS**
1. EASTERN APRON EXPANSION - PHASE 2
 2. RUNWAY 1-19 OVERLAY
 3. TRANSIENT APRON OVERLAY
 4. NORTHERN APRON EXPANSION - PHASE 1
 5. TAXIWAY C CRACK SEAL
 6. TAXIWAYS A AND B OVERLAY
 7. NORTHERN APRON EXPANSION - PHASE 2
 8. TERMINAL, ARFF BUILDING, HANGAR AND PARKING LOT CONSTRUCTION
 9. CRACK SEAL - RWY 1-19, TWYS A & B, APRON AND PERIMETER ROAD

LEGEND	
EXISTING AIRPORT BOUNDARY	---
ULTIMATE AIRPORT BOUNDARY	---
SECURITY FENCE (CHAIN)	○
BUILDING RESTRICTION LINE	—BRL—BRL—BRL—
EXISTING RUNWAY PROTECTION ZONE	—RPZ—RPZ—RPZ—
ULTIMATE RUNWAY PROTECTION ZONE	—RPZ-U—RPZ-U—RPZ-U—
INTERMEDIATE-TERM AIRPORT IMPROVEMENTS	—

10. CONSTRUCT PERIMETER ROAD

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	PARKER	AVI SQUILLA AIRPORT MASTER PLAN ARIZONA
<p>MAIERLE, INC. An Employee-Owned Company</p> <p>Planners</p> <p>Phone: (602) 273-2000 Fax: (602) 273-2001</p> <p><small>COPYRIGHT © MORRISON MAIERLE, INC. 2013</small></p>	APPR. BY: <u>JL</u> DATE: <u>01/20/13</u>	FIGURE NUMBER 6-1
P:\8405005 - AIP 018 Master Plan\ACADE\ehhh\Chapter 6 Projects\Short-Term Projects.dwg Plotted by oparks on Jan/26/2013		SHORT-TERM AIRPORT IMPROVEMENTS



LEGEND	
EXISTING AIRPORT BOUNDARY	---
ULTIMATE AIRPORT BOUNDARY	---
SECURITY FENCE (CHAIN)	○
BUILDING RESTRICTION LINE	BRL BRL BRL
EXISTING RUNWAY PROTECTION ZONE	RPZ RPZ RPZ
ULTIMATE RUNWAY PROTECTION ZONE	RPZ-U RPZ-U
LONG-TERM AIRPORT IMPROVEMENTS	---

LONG-TERM AIRPORT IMPROVEMENTS
1. ACQUIRE LAND FOR SOUTHERN RUNWAY EXTENSION
2. RUNWAY 1-19 SOUTHERN EXTENSION
3. CRACK SEAL - RWY 1-19, TWYS A & B, APRON AND PERIMETER ROAD
4. SEAL COAT - TAXIWAY C AND NORTHERN APRON EXPANSION
5. ACQUIRE LAND FOR NORTHERN RUNWAY EXTENSION
6. RUNWAY 1-19 NORTHERN EXTENSION
7. SEAL COAT - RWY 1-19, TWYS A & B, APRON AND PERIMETER ROAD
8. CRACK SEAL - TAXIWAY C AND NORTHERN APRON EXPANSION
9. ACQUIRE LAND EAST OF EXISTING PROPERTY LINE FOR FUTURE DEVELOPMENT

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	PARKER AVI SUQUILLA AIRPORT MASTER PLAN ARIZONA LONG-TERM AIRPORT IMPROVEMENTS		

PARKER	AVI SUQUILLA AIRPORT MASTER PLAN	ARIZONA
	LONG-TERM AIRPORT IMPROVEMENTS	

PROJECT NO. 8405.005
FIGURE NUMBER 6-X