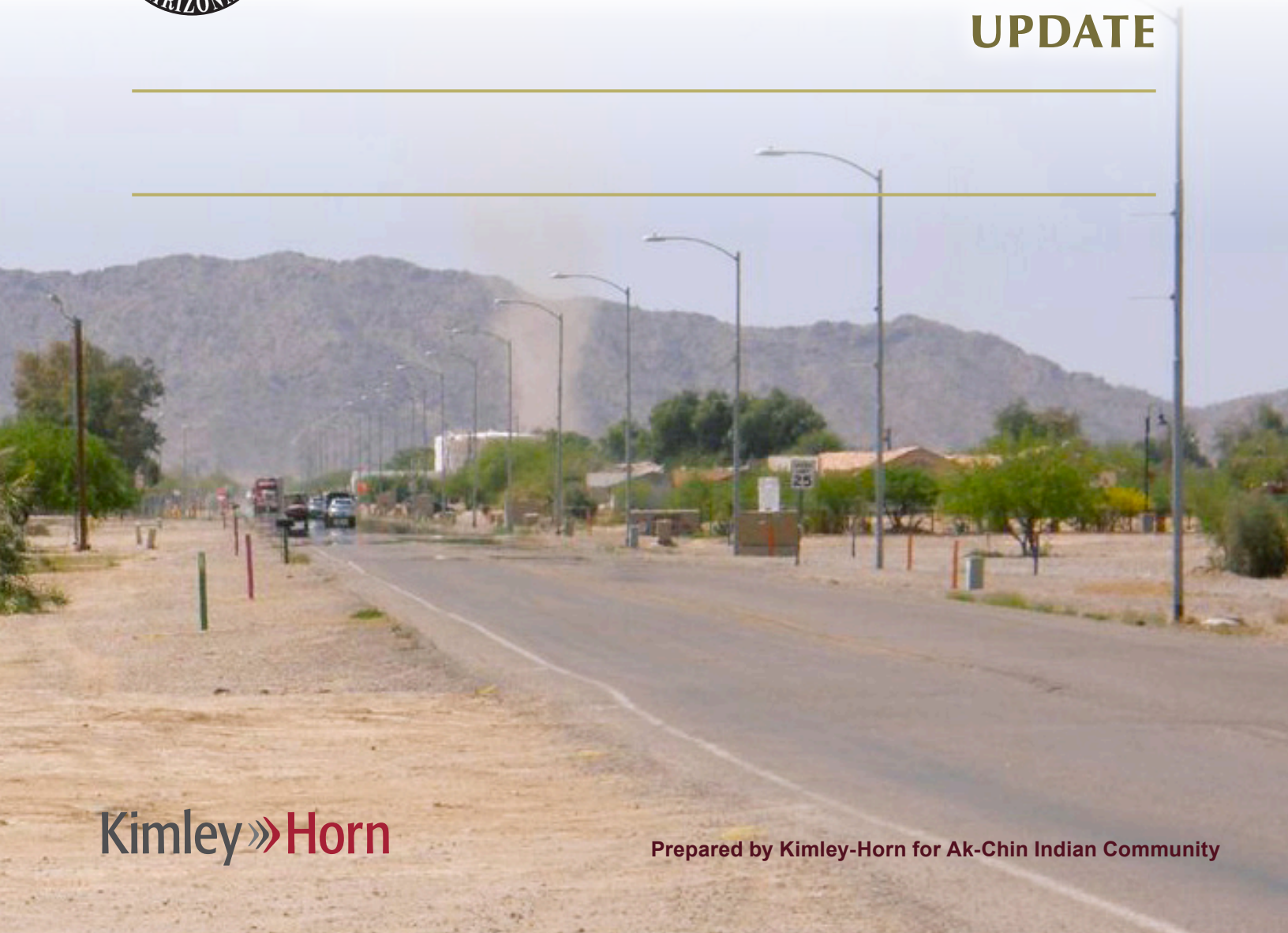




Ak-Chin Indian Community

LONG RANGE TRANSPORTATION PLAN

UPDATE



AK-CHIN INDIAN COMMUNITY LONG RANGE TRANSPORTATION PLAN UPDATE

FINAL REPORT

SEPTEMBER 2016

AK-CHIN INDIAN COMMUNITY COUNCIL

42507 W. Peters & Nall Road
Maricopa, Arizona 85138
Telephone: (520) 568-1000



Resolution No. **A-203-16**

RESOLUTION OF THE AK-CHIN INDIAN COMMUNITY COUNCIL

(A Resolution adopting Ak-Chin Indian Community's 2016 Long Range
Transportation Plan Update)

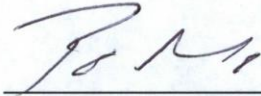
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- WHEREAS,** the Ak-Chin Indian Community ("Community") is a federally recognized Indian Tribe organized pursuant to the Indian Reorganization Act of 1934; and
- WHEREAS,** the Community is governed by the Ak-Chin Community Council ("Council") pursuant to its Constitution ("Constitution"); approved by the Secretary of the Interior on August 4, 2016; and
- WHEREAS,** the Ak-Chin Indian Community was awarded a Planning Assistance for Rural Areas (PARA) grant from the Arizona Department of Transportation (ADOT) Multimodal Planning Division to prepare a Long Range Transportation Plan Update for the Community; and
- WHEREAS,** the 2016 Long Range Transportation Plan Update ("Plan") has been performed by Kimley-Horn and Associates in accordance with the Bureau of Indian Affairs guidelines for the performance of the Plan; and
- WHEREAS,** the Plan contains short-range, mid-range, and long-range projects; and
- WHEREAS,** the Plan was developed with input from Community members, stakeholders, and the Technical Advisory Committee ("TAC"); and
- WHEREAS,** the Plan includes projects within the revised Community Tribal Transportation Improvement Program ("TTIP") Tribal Shares to be funded by 2016-2020 Tribal Shares as approved in Resolution A-166-16; and
- WHEREAS,** the Plan includes a revised inventory for the Road Inventory Field Data System ("RIFDS") for submission prior to the March 15, 2017 deadline in accordance with 25 CFR 170.444(b).

NOW THEREFORE BE IT RESOLVED, that the Ak-Chin Indian Community Council hereby adopts the Ak-Chin Indian Community 2016 Long Range Transportation Plan Update with an updated Tribal Transportation Improvement Plan and Road Inventory; and

BE IT FINALLY RESOLVED, that the Ak-Chin Indian Community Council hereby authorizes the BIA - Western Regional Office, Division of Transportation, to take the necessary action to record the Ak-Chin Indian Community's 2016 Long Range Transportation Plan Update.

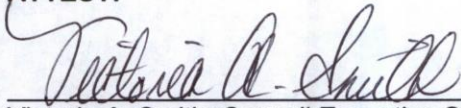
C-E-R-T-I-F-I-C-A-T-I-O-N

Pursuant to authority contained under Article IV, Sections (a), (b), (l), (m), (n) and (q) of the Constitution of the Ak-Chin Indian Community, approved by the Secretary of the Interior on August 4, 2016, by a quorum of 4 members present at a Regular Council meeting held on September 7, 2016 at the Ak-Chin Indian Community, Arizona, by a vote of 4 for, 0 against, 0 not voting, and 1 absent, the foregoing Resolution was adopted.



Robert Miguel, Chairman
Ak-Chin Indian Community

ATTEST:



Victoria A. Smith, Council Executive Secretary
Ak-Chin Indian Community

This report has been funded in part through financial assistance from the Federal Highway Administration, U.S. Department of Transportation. The contents of this report reflect the views of the authors, who are responsible for the facts and the accuracy of the data, and for the use or adaptation of previously published material, presented herein. The contents do not necessarily reflect the official views or policies of the Arizona Department of Transportation or the Federal Highway Administration, U.S. Department of Transportation. This report does not constitute a standard, specification, or regulation. Trade or manufacturers' names that may appear herein are cited only because they are considered essential to the objectives of the report. The U.S. government and the State of Arizona do not endorse products or manufacturers.

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1. INTRODUCTION

The 2016 Ak-Chin Indian Community Long Range Transportation Plan (LRTP) Update provides recommendations for transportation improvements over 5-, 10-, and 20-year periods, incorporating both roadway and multimodal needs of the Ak-Chin Indian Community (“Community”). Key focus areas of the LRTP are roadway improvements, particularly incorporating the phasing of the Ak-Chin Parkway, which will support development of the Ak-Chin Indian Community’s Public Use, Residential and Commercial area, road maintenance and safety programs, and improvement plans for bicycle, pedestrian, and transit systems. This plan also includes the identification of updates to the Tribal Transportation Road Inventory and functional classification systems, which will assist in expanding the level and types of funding available for transportation projects.

The Ak-Chin Indian Community has been extremely proactive in implementing transportation improvements and recommendations from the 2010 Long Range Transportation Plan, as a number of projects have been constructed or are in development.



Peters and Nall Road, east of SR 347, which was reconstructed in 2015

1.1. STUDY GOALS AND OBJECTIVES

The key objective for this study is to develop a Long Range Transportation Plan Update for the Community. Goals of the plan are:

- Conduct an evaluation of roadways and identify transportation deficiencies and needs.
- Identify Community road projects for the Tribal Transportation Improvement Program (short-range program) as well as mid-and long-range projects.
- Conduct traffic and turning movement counts.
- Identify safety improvements.
- Conduct a road inventory update.
- Develop roadway design standards and an access management policy.
- Develop a maintenance plan.
- Develop planning-level cost estimates.
- Identify potential funding sources for improvements.

1.2. TRANSPORTATION PLAN STUDY AREA

The study area for the Transportation Plan is the Ak-Chin Indian Community Reservation area and adjacent Community-owned land. The Community is located in the Santa Cruz Valley of southern Arizona and encompasses 22,160 acres. The Community lies 58 miles south of Phoenix in the northwestern part of Pinal County.

The Reservation Area is shown in **Figure 1-1**.

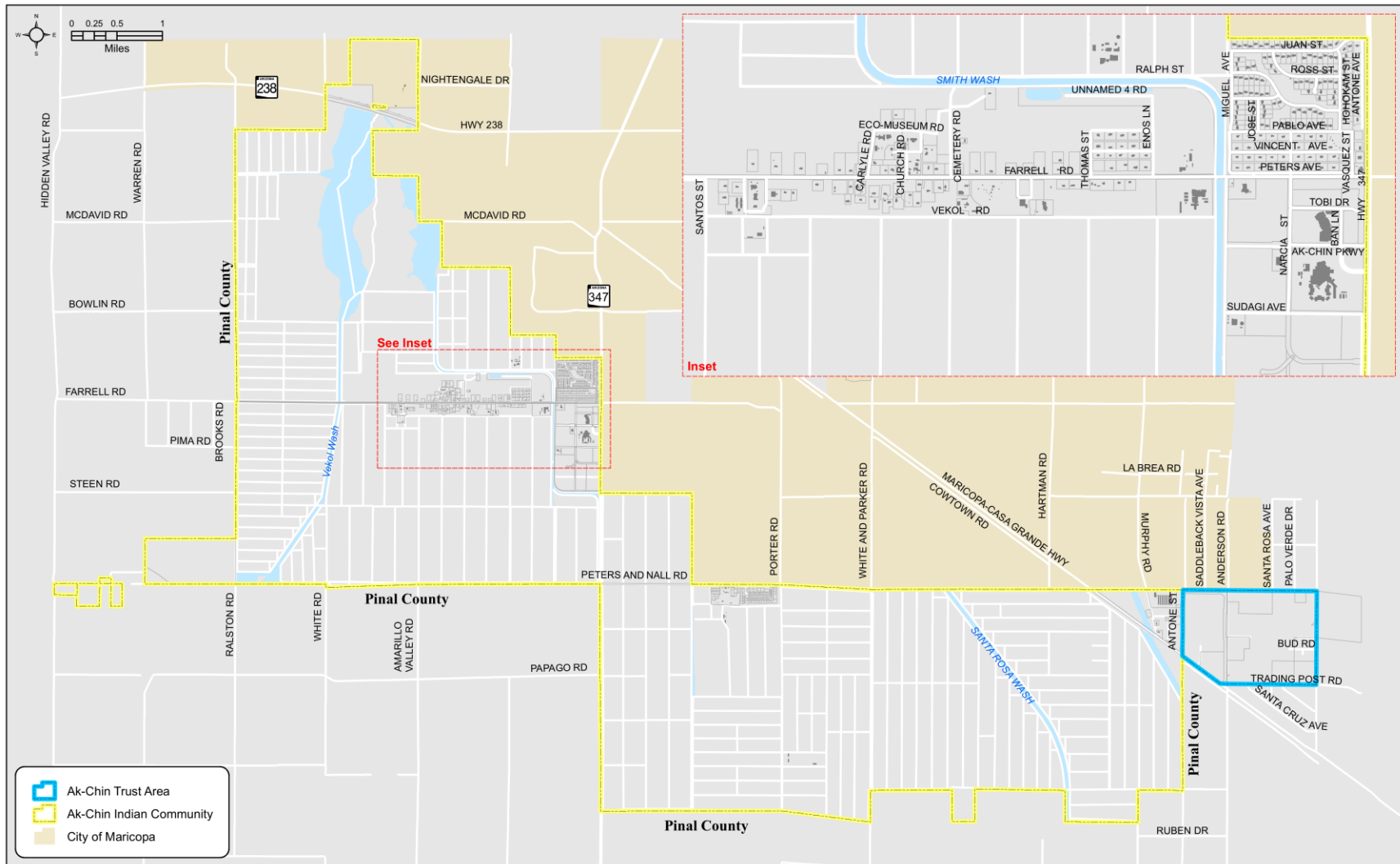
1.3. PROJECT MANAGEMENT TEAM AND TECHNICAL ADVISORY COMMITTEE

A core Project Management Team (PMT) provided project direction and input to the study. The PMT included representatives of the Ak-Chin Indian Community Planning Department, Contracts and Grants Department, Arizona Department of Transportation (ADOT), and the Kimley-Horn team. Meetings were held monthly. The meetings were an opportunity to review and discuss progress, findings, and recommendations of the study.

In addition to the PMT, a broader-based Technical Advisory Committee (TAC) was established. TAC members included representatives of the following agencies:

- Ak-Chin Indian Community Planning Department
- ADOT Multimodal Planning Division
- Ak-Chin Indian Community Contracts and Grants Department
- ADOT Southcentral Engineering District
- Bureau of Indian Affairs (BIA) Western Regional Office Planning Section
- Pinal County Public Works, Transportation Planning
- City of Maricopa Development Services
- FHWA Arizona Division Planning, Environment, Air Quality, and Realty (PEAR) Team
- Central Arizona Governments Planning and Information Services

In addition to these members, representatives of Ak-Chin Departments, the Fire and Police Departments, and Tribal Council members were invited to the TAC meetings.



1.4. PUBLIC INVOLVEMENT

Public outreach was an important element in the development of the Plan. Phase 1 of the public outreach focused on identifying transportation needs. Phase 1 public outreach activities included the following:

- Tribal Council Outreach
- Initial newspaper article about the study
- Stakeholder meetings
- Community meeting
- Elder Lunch presentation
- Community survey on transportation needs and priorities
- Follow up meetings or discussion with Community representatives from the Him-Dak Museum, Transit Department, Capital Projects Department, Farms Department, and Ak-Chin Regional Airport.

Phase 2 of the public outreach focused on presenting the recommended improvements to the public for review and comment. Public Meeting 2 was held on July 6th, 2016 from 4 p.m. to 6:30 p.m. at the Ak-Chin Indian Community Service Center at 48227 W. Farrell Rd, Maricopa, Arizona. The focus of the public meeting was to present recommended transportation improvement projects for review and comment. Sixteen persons attended the public meeting.

In addition, the LRTP draft final report was available for public review at the Ak-Chin Indian Community Library. Details about the public involvement for this LRTP are provided in the Appendix (under separate cover).

1.5. EXISTING STUDIES USED IN THE PREPARATION OF THIS REPORT

Several plans and studies that address transportation issues were reviewed as part of this study. The documents are listed in **Table 1-1** in chronological order. These documents are discussed further within the report as they relate to topic areas.

Table 1-1: Plans and Studies Reviewed for the Long Range Transportation Plan Update

Report Name	Author	Date
Ak-Chin Indian Community Long Range Transportation Plan and Road Inventory	Wilson & Company	July 2010
Ak-Chin Indian Community Transit and Non-Motorized Transportation Study	HDR, Inc.	January 2011
Ak-Chin Indian Community SR 347 Road Safety Assessment	ADOT	April 2011
Ak-Chin Indian Community Economic Impact Analysis	ESI Corporation	May 2011
Ak-Chin Indian Community Public Use and Commercial Area Master Plan	Bahozhoni Development, PLAN-et and Worth Group Architects	September 2013
Maricopa Association of Governments 2035 Regional Transportation Plan	Maricopa Association of Governments	January 2014
Central Arizona Governments Regional Transportation Plan	Wilson & Company	March 2015
Ak-Chin Indian Community Airport Master Plan Final Report	Armstrong Consultants	April 2015

Report Name	Author	Date
ADOT 2016-2020 Five-Year Transportation Facilities Construction Program	ADOT	June 2015
City of Maricopa Area Transportation Plan Final Report	Wilson & Company	November 2015
Central Arizona Governments Strategic Transportation Safety Plan	Cambridge Systematics with Wilson & Company and Gordley Group	December 2015
Pinal County's East-West Corridor Study Final Design Concept Report	Jacobs Engineering	December 2015
ADOT Tentative 2017-2021 Five-Year Transportation Facilities Construction Program	ADOT	March 2016
Ak-Chin Casino Master Traffic Impact Analysis	CivTech	June 2016

Source: Kimley-Horn and Associates

1.6. DOCUMENTATION OF BUREAU OF INDIAN AFFAIRS TRIBAL TRANSPORTATION PLANNING REQUIREMENTS

Early in the study process, the project team met with the BIA Western Region Office representative to review BIA requirements for updating the Long Range Transportation Plan Update and the Indian Reservation Road (IRR) Inventory. Requirements for the Long Range Transportation Plan are contained in the Code of Federal Regulation, Title 25, Part 170 – Indian Reservation Roads Program. Requirements for the IRR Inventory are provided in **Table 1-2**. A brief overview of BIA requirements for long range transportation plans is summarized in **Table 1-3**.

Table 1-2: BIA Requirements for the IRR Inventory

Section Number	Topic	Summary
§ 170.442	What is the IRR Inventory?	<p>(a) The IRR Inventory is a comprehensive database of all transportation facilities eligible for IRR Program funding by tribe, reservation, BIA agency and region, Congressional district, State, and county. Other information collected and maintained under the IRR Program includes classification, route number, bridge number, current and future traffic volumes, maintenance responsibility, and ownership.</p> <p>(b) Elements of the inventory are used in the Relative Need Distribution Factor. BIA or tribes can also use the inventory to assist in transportation and project planning, justify expenditures, identify transportation needs, maintain existing IRR transportation facilities, and develop management systems.</p>
§ 170.443	How can a tribe list a proposed transportation facility in the IRR Inventory?	<p>A proposed IRR transportation facility is any transportation facility, including a highway bridge, that will serve public transportation needs, is eligible for construction under the IRR Program and does not currently exist. To be included in the IRR inventory, a proposed transportation facility must:</p> <p>(a) Be supported by a tribal resolution or other official tribal authorization;</p> <p>(b) Address documented transportation needs as developed by and identified in tribal transportation planning efforts, such as the long-range transportation plan;</p> <p>(c) Be eligible for IRR Program funding; and</p> <p>(d) Be open to the public when built.</p>

Section Number	Topic	Summary
§ 170.444	How is the IRR Inventory updated?	<p>The IRR Inventory data for a tribe is updated on an annual basis as follows:</p> <ul style="list-style-type: none"> (a) Each BIA Regional Office provides the tribes in its region copies of the IRR Inventory by November 1st of each year; (b) The tribe reviews the data and submits changes (together with a strip map of each change) to the BIA Regional Office along with authorizing resolutions or similar official authorization by March 15; (c) The BIA Regional Office reviews each tribe's submission for errors or omissions and provides the tribe with its revised inventory by May 15; (d) The tribe must correct any errors or omissions by June 15; (e) Each BIA Regional Office certifies its data and enters the data into the IRR Inventory by July 15; (f) BIA provides each tribe with copies of the Relative Need Distribution Factor distribution percentages by August 15; and (g) BIADOT approves submissions from BIA Regional Offices before they are included in the National IRR Inventory.
§ 170.445	What is a strip map?	<p>A strip map is a graphic representation of a section of road or other transportation facility being added to or modified in the IRR Inventory. Each strip map submitted with an IRR Inventory change must:</p> <ul style="list-style-type: none"> (a) Define the facility's location with respect to State, county, tribal, and congressional boundaries; (b) Define the overall dimensions of the facility and the accompanying inventory data; (c) Include a table that provides the IRR Inventory information about the transportation facility.

Source: U.S. Government Publishing Office, 25 CFR 170 – Indian Reservation Roads Program <https://www.gpo.gov/fdsys/pkg/CFR-2012-title25-vol1/pdf/CFR-2012-title25-vol1-part170.pdf>, referenced May 11, 2016.

Table 1-3: BIA Requirements for Long Range Transportation Plans

Section Number	Topic	Summary
§170.411	What may a long-range transportation plan include?	<p>A long range transportation Plan may include:</p> <ul style="list-style-type: none"> a. An evaluation of a full range of transportation modes and connections between modes such as highway, rail, air, and water, to meet transportation needs; b. Trip generation studies, including determination of traffic generators due to land use; c. Social and economic development planning to identify transportation improvements or needs to accommodate existing and proposed land use in a safe and economical fashion; d. Measures that address health and safety concerns relating to transportation improvements; e. A review of the existing and proposed transportation system to identify the relationships between transportation and the environment; f. Cultural preservation planning to identify important issues and develop a transportation plan that is sensitive to tribal cultural preservation; g. Scenic byway and tourism plans; h. Measures that address energy conservation considerations; i. A prioritized list of short and long-term transportation needs; and j. An analysis of funding alternatives to implement plan recommendations.

Section Number	Topic	Summary
§170.412	How is the Tribal IRR long-range transportation plan developed and approved?	<ul style="list-style-type: none"> a. The Tribal IRR long-range transportation plan is developed by: <ul style="list-style-type: none"> 1. A tribe working through a self-determination contract or self-governance agreement or other funding sources; or 2. BIA upon request of, and in consultation with, a tribe. b. During the development of the IRR long-range transportation plan, the tribe and BIA should jointly conduct a midpoint review. c. The public reviews a draft IRR long-range transportation plan as required by § 170.413. The plan is further refined to address any issues identified during the public review process. The tribe then approves the IRR long-range transportation plan.
§170.413	What is the public role in developing the long-range transportation plan?	<p>BIA or the tribe must solicit public involvement. If there are no tribal policies regarding public involvement, a tribe must use the procedures shown below. Public involvement begins at the same time long-range transportation planning begins and covers the range of users, from stakeholders and private citizens to major public and private entities. Public involvement may be handled in either of the following two ways:</p> <ul style="list-style-type: none"> a. For public meetings, BIA or a tribe must: <ul style="list-style-type: none"> 1. Advertise each public meeting in local public newspapers at least 15 days before the meeting date. In the absence of local public newspapers, BIA or the tribe may post notices under local acceptable practices; 2. Provide at the meeting copies of the draft long-range transportation plan; 3. Provide information on funding and the planning process; and 4. Provide the public the opportunity to comment, either orally or in writing. b. For public notices, BIA or a tribe must: <ul style="list-style-type: none"> 1. Publish a notice in the local and tribal newspapers when the draft long-range transportation plan is complete. In the absence of local public newspapers, BIA or the tribe may post notices under local acceptable practices; and 2. (2) State in the notice that the long-range transportation plan is available for review, where a copy can be obtained, whom to contact for questions, where comments may be submitted, and the deadline for submitting comments (normally 30 days).
§ 170.414	How is the tribal long-range transportation plan used and updated?	<p>The tribal government uses its IRR long-range transportation plan in its development of a tribal priority list or TTIP. To be consistent with State and MPO planning practices, the tribe or BIA (for direct service tribes) should:</p> <ul style="list-style-type: none"> a. Review the IRR long-range transportation plan annually; and b. Update the plan every 5 years.
§ 170.415	What is pre-project planning?	<ul style="list-style-type: none"> a. Pre-project planning is part of overall transportation planning and includes the activities conducted before final project approval on the IRR Transportation Improvement Program (IRRTIP). These activities include; <ul style="list-style-type: none"> 1. Preliminary project cost estimates; 2. Certification of public involvement; 3. Consultation and coordination with States and/or MPO's for regionally significant projects; 4. Preliminary needs assessments; and 5. Preliminary environmental and archeological reviews.

Section Number	Topic	Summary
		<ul style="list-style-type: none"> b. The BIA regional office must work cooperatively with tribal, state, regional, and metropolitan transportation planning organizations concerning the leveraging of funds from non-IRR Program sources and identification of other funding sources to expedite the planning, design, and construction of projects on the IRR TIP.

Source: Legal Information Institute, <https://www.law.cornell.edu/cfr/text/25/part-170/subpart-D>, referenced 3/14/2016

2. PROJECT AREA DESCRIPTION

This chapter provides information on current and planned land uses within the Ak-Chin Indian Community, socioeconomic and demographic data, and an environmental overview.

2.1. CURRENT LAND USES AND ACTIVITY CENTERS

Existing land use information was obtained from the Ak-Chin Indian Community GIS Department, the Ak-Chin Indian Community Planning Department, and visual inspection. Land uses are described in the following areas:

- Tribal Government Departments and Administration
- Schools and Educational Facilities
- Residential Subdivisions
- Hospitals and Health-related Facilities
- Community Facilities and Recreation Areas
- Commercial and Industrial Businesses

An activity center map (**Figure 2-1**) shows the location of many of the facilities mentioned in this section.

Tribal Government Departments and Administration

Tribal government offices are located primarily on Farrell Road and Peters and Nall Road. Office locations are summarized in **Table 2-1**.



Ak-Chin Justice Center

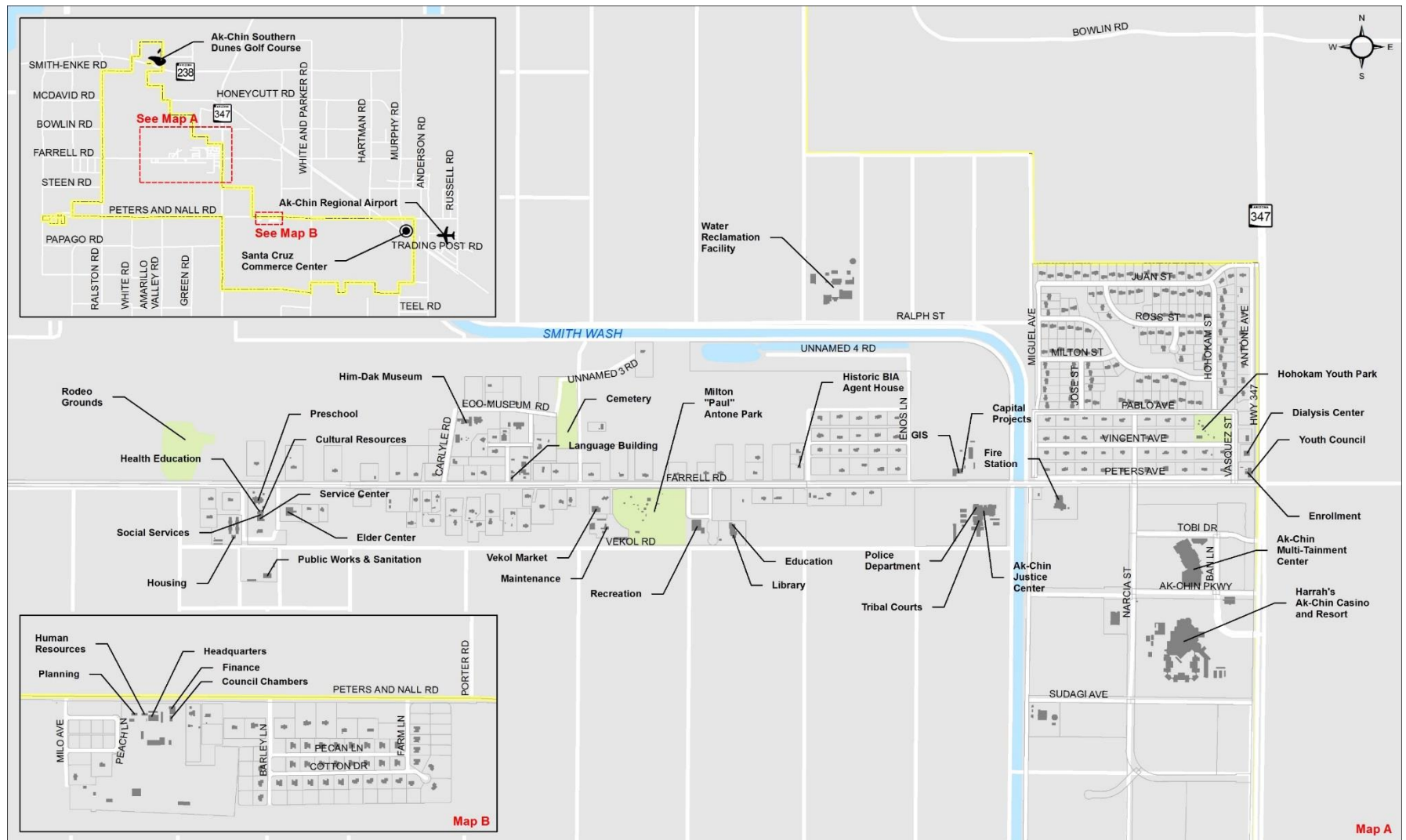


Figure 2-1: Activity Center Map

Table 2-1: Ak-Chin Tribal Government Offices

Name	Address
Tribal Council Chambers and Headquarters	42507 W. Peters & Nall Rd.
Capital Projects Department	45710 W. Farrell Rd.
Cultural Resources	48227 W. Farrell Rd.
Education Department	46521 W. Farrell Rd.
Enrollment Department	16472N. Maricopa Rd.
Environmental Protection Department	46200 W. Ralph St.
Farm Department	42507 W. Peters & Nall Rd.
Finance Department	42507 W. Peters & Nall Rd.
Contract and Grants Department	42507 W. Peters & Nall Rd.
Health Education Department	48227 W. Farrell Rd.
Housing Department	48277 W. Farrell Rd.
Human Resources	42507 W. Peters & Nall Rd.
Information Systems Department	45710 W. Farrell Rd.
Justice Center (includes Tribal Court, Detention Center, Police Department, Prosecutor's Office, Public Defender's Office, Court Administration, Probation Department)	45525 W. Farrell Rd.
Maintenance Department	46953 W. Farrell Rd.
Planning and Development Department	42507 W. Peters & Nall Rd.
Parks and Recreation Department	46753 W. Farrell Rd.
Ak-Chin O'odham Runner Newspaper	16600 N. Maricopa Rd.
Sanitation and Public Works Department	48141 W. Vekol Rd.
Security Department	15960 N. Narcia Rd.
Service Center	48227 W. Farrell Rd.
Health and Human Services	48227 W. Farrell Rd.
Ak-Chin Regional Airport	32514 W Bud Rd.
Fire Department	45401 W Farrell Rd.
Library	46521 W Farrell Rd.
Community Safety Office	15960 Narcia St.

Schools and Educational Facilities

The Ak-Chin Indian Community has a Preschool within the Reservation, and K through 12 students typically attend Maricopa Unified School District (MUSD) schools. Examples of schools that Community residents most commonly attend are Maricopa Elementary School, Saddleback Elementary School, Maricopa Wells Middle School, and Maricopa High School.

The Community has an Education Department, as well as an active Youth Council. Locations of Community facilities and departments in the area are provided in **Table 2-2**.

Table 2-2: Educational Facilities in the Study Area

Name	Address
Education Department	46521 W. Farrell Rd.
Preschool	48251 W. Farrell Rd.

Hospitals and Health-Related Services

The Ak-Chin Clinic is a primary care facility located on Farrell Road. It is a satellite facility of Gila River Health Care, which has its main hospital, the Hu Hu Kam Memorial Hospital, in Sacaton, Arizona. The Fresenius Dialysis Center is a privately run facility located within the Community at 16536 N. Maricopa Road. The Phoenix Indian Medical Center also provides health services and is located at 4212 North 16th Street in Phoenix, Arizona. The distance to major health care facilities is an issue that could potentially be addressed by the new transit service.

Other health facilities in Maricopa include the Banner Health Center at 17900 N. Porter Road in Maricopa, and Dignity Health Urgent Care Facility at 20750 N. John Wayne Parkway. Hospitals and health-related services in or near the Community are listed in **Table 2-3**.

Table 2-3: Hospitals and Health-Related Facilities

Name	Address
Ak Chin Clinic - Gila River Health Care	48203 W Farrell Rd, Maricopa, AZ 85139
Hu Hu Kam Memorial Hospital - Gila River Health Care	483 W Seed Farm Rd, Sacaton, AZ 85147
Fresenius Dialysis Center	16536 N. Maricopa Rd.
Phoenix Indian Medical Center	4212 North 16th St, Phoenix
Banner Health Center	17900 N. Porter Rd, Maricopa
Dignity Health Urgent Care Facility	20750 N. John Wayne Parkway
Banner Casa Grande Hospital	1800 E. Florence Blvd, Casa Grande

Community Facilities and Recreation Areas

Community facilities are summarized in **Table 2-4**. The Community has a wide variety of recreational activities and parks.



Milton "Paul" Antone Memorial Park

Table 2-4: Community Facilities

Name	Address
Ak-Chin Indian Community Library	46521 W. Farrell Road
Elder Center	46200 W. Farrell Rd.
Him-Dak Museum and Archives	47685 N. Eco-Museum Rd.
Ak-Chin Parks and Recreation Center	46753 W. Farrell Rd.
Ak-Chin Southern Dunes Golf Course	48456 AZ-238, Maricopa, AZ
Hohokam Park	44950 W. Vincent Ave.
Milton "Paul" Antone Memorial Park	46851 W. Farrell Rd.
UltraStar Multi-tainment Center	16000 N. Maricopa Rd.
Rodeo Grounds	48468 W. Farrell Rd.
Vaila Site	47701 W. Farrell Rd.

Emergency Services

The Ak-Chin Indian Community Police and Fire Departments are both located on Farrell Road. The Community also has a Safety Department that works on Community initiatives for occupational safety and health. In some cases, this includes traffic-related activities, such as seat belt awareness campaigns, working with Police Department on speeding issues, and other safety-related activities. Emergency services are summarized in **Table 2-5**.

Table 2-5: Emergency Services

Name	Address
Ak-Chin Indian Community Fire Department	45401 W. Farrell Rd.
Ak-Chin Indian Community Police Department	45525 W. Farrell Rd.
Ak-Chin Indian Community Safety Office	15960 Narcia St.
Ak-Chin Indian Community Security Office	45525 W Farrell Rd.

Commercial, Industrial, and Community Enterprises

Commercial, Industrial, and Community enterprises include:

- Harrah's Ak-Chin Casino and Resort – The resort includes a 300-room hotel, and the casino has several restaurants as well as gaming options.
- UltraStar Multi-tainment Center – This multi-faceted center includes event spaces, bowling, arcade, laser tag, facilities for group events and shows, a movie theater, and several restaurants.
- The Ak-Chin Southern Dunes Golf Club – This premier golf property, which was purchased by the Community includes a Troon Golf managed facility, restaurant, and miniDunes (a 6-hole short course).
- Ak-Chin Farms – This enterprise is a major employer and harvests over 15,000 acres of land. Cotton is the principal crop; however, barley, potatoes, alfalfa, and corn are also grown.
- Santa Cruz Commerce Center – The Santa Cruz Commerce Center (also known as the Industrial Park) is located near the intersection of Murphy Road and the Maricopa Casa Grande Highway. The Center has several tenants, including Hickman's Egg Farm, Tillers Equipment and Tool Rentals, and M & S Equipment. The property has office and warehouse space, as well as lots that are available to be developed. The property is within 5 minutes of the Ak-Chin Regional Airport.



Farming is a major industry within the Ak-Chin Indian Community

The Ak-Chin Industrial Park Board was established by the Ak-Chin Community Council to develop, operate and manage the Community's industrial properties. It is responsible for the marketing, development, and management of Santa Cruz Commerce Center, the property surrounding the Ak-Chin Regional Airport, and a property known as the Bunker Property, which includes the Adobe Office Suites.

Residential Subdivisions

Residential areas include the following subdivisions, which are shown in **Figure 2-2**.

North of Farrell Road

- Firehouse Subdivision
- Greasewood Subdivision
- Mesquite Subdivision

South of Peters and Nall Road

- Farms Subdivision
- Pecan Subdivision (under construction)

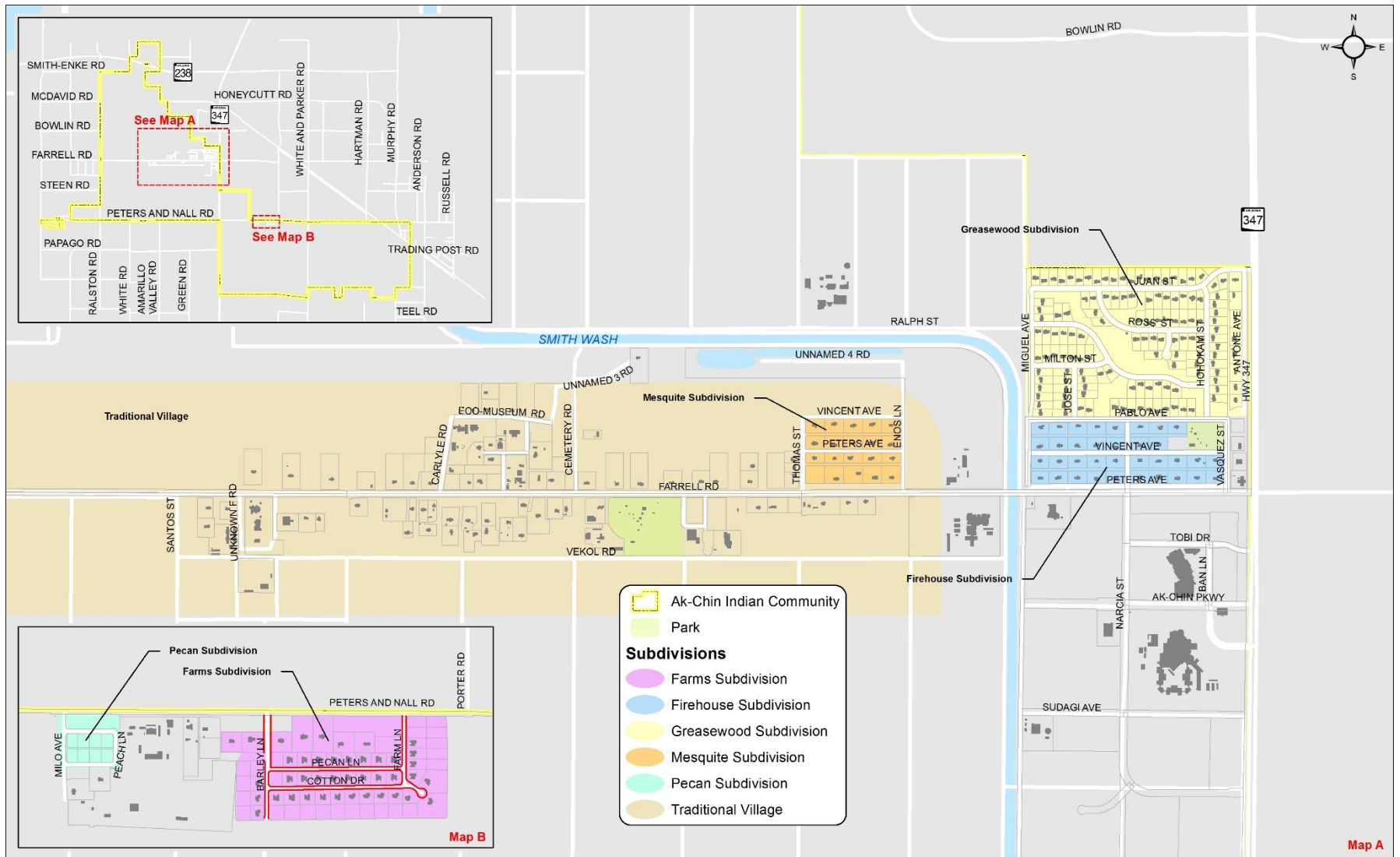


Figure 2-2: Subdivision Areas

2.2. ZONING

A zoning map of the Community is provided in **Figure 2-3**. Large areas of the Reservation are zoned for agriculture. A transportation consideration in these areas is that agricultural equipment would be using roads in the agriculturally zoned areas, suggesting the possible need for wider shoulders that the equipment could use to minimize traffic safety issues.

The location of residentially zoned properties is important in the transportation analysis, because travel patterns of residents to activity centers such as the Public Use area, commercially zoned property, and Industrially zoned property is input to determine the location of transit routes, pedestrian crossing locations, and traffic control, among other considerations.

Areas zoned as Preserve are located primarily on the northern area of the Reservation, north of Farrell Road. These are areas that would not be considered for transportation improvements because they are pristine areas and could potentially contain culturally significant resources.

2.3. FUTURE LAND USE AND DEVELOPMENT

Ak-Chin Indian Community Public Use and Commercial Area Master Plan

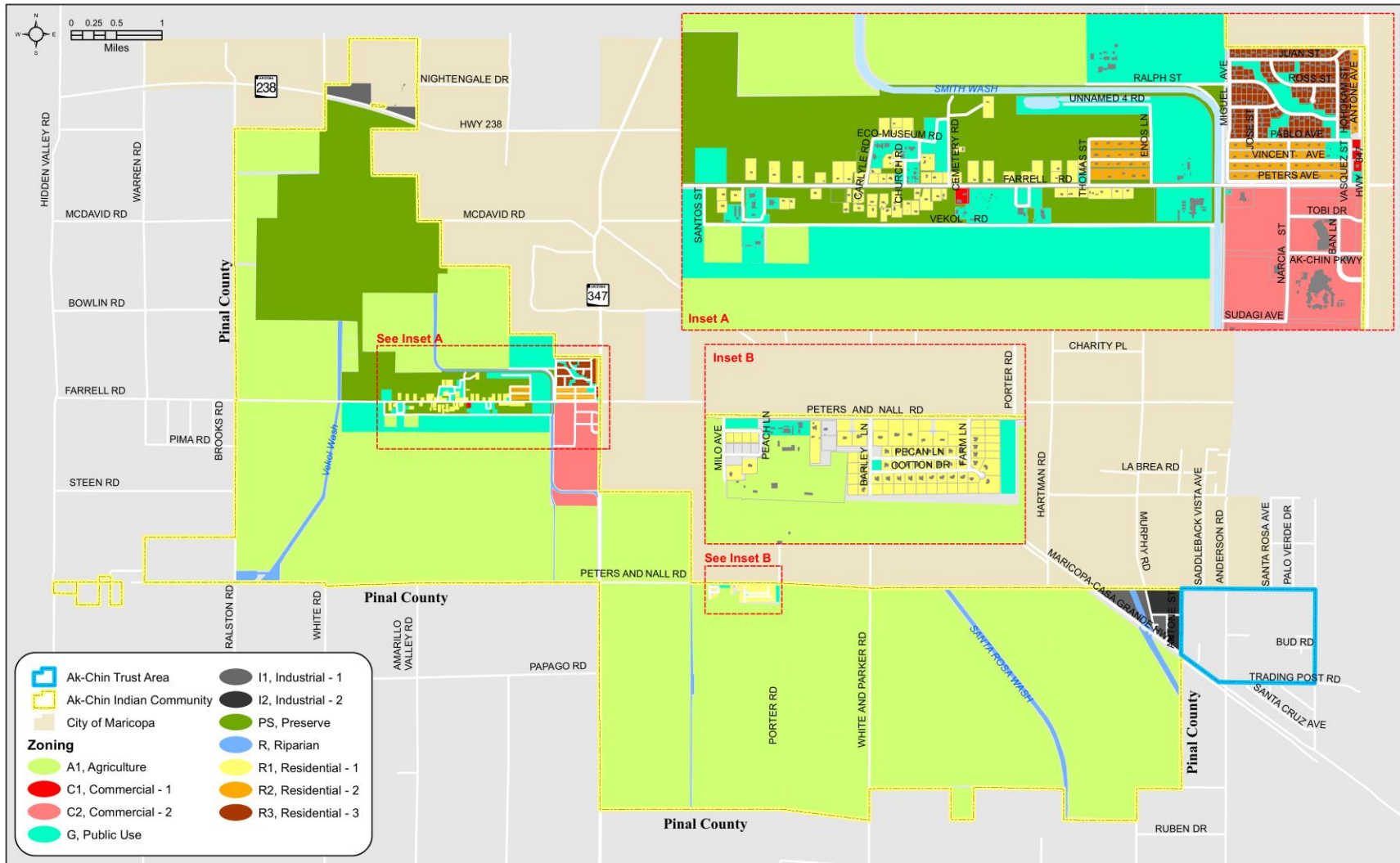
The *Ak-Chin Indian Community Public Use and Commercial Area Master Plan (2013)* identifies future land uses and provides design guidelines for the Ak-Chin Commercial Area, known as Ak-Chin Circle, surrounding Harrah's Ak-Chin Casino Resort and Public Use Area that is generally located 1/4 mile south of Farrell Road and west of Smith Wash.

The Commercial Area portion of the Master Plan focuses on enhancing existing tribal enterprises. The Public Use Area portion of the Master Plan provides locations for development of new tribal facilities, housing, education, and recreation facilities.

The Public Use and Commercial Area Master Plan is shown in **Figure 2-4**. The Ak-Chin Parkway is planned to be the key spine road through the area.

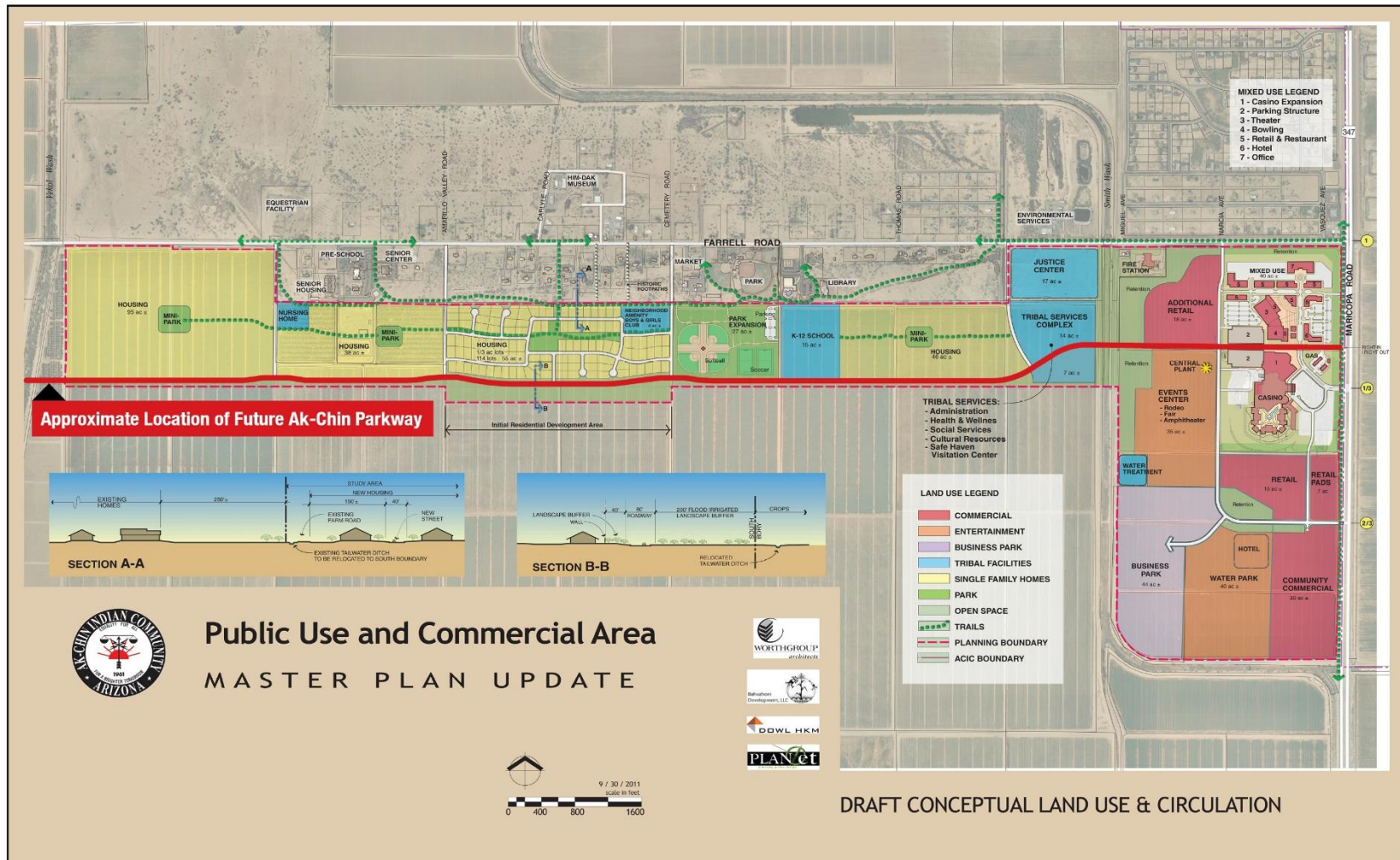
Harrah's Ak-Chin Casino and Hotel Expansion

Harrah's Ak-Chin Casino and Resort is in the process of an expansion. The expansion will be constructed over the next two years. The expansion will provide garage parking for guests, provide a new hotel tower with 230 rooms, replace the old existing Bingo Hall with new larger facilities in the expanded main casino building, provide new meeting banquet space, replace the meeting/banquet space with new facilities, provide new food and beverage venues, and upgrade existing venues.



Source: Ak-Chin Indian Community GIS Department

Figure 2-3: Zoning Map



Source: Ak-Chin Indian Community Public Use and Commercial Area Master Plan Update

Figure 2-4: Public Use and Commercial Area Plan

Housing

In addition to the housing development (100-150 homes) planned in the Public Use area of the Community, which is anticipated within the next five years, nine homes are currently in the process of being constructed in the Pecan Subdivision, which is located south of Peters and Nall Road. Discussion with the Housing Department indicated the exact number of new home sites in the Public Use area is not available, because the subdivisions have not been designed yet.

Industrial Park and Ak-Chin Regional Airport Area

The Community is making strong efforts to expand the Industrial Park area through a leasing program. Advantages include:

- The Ak-Chin Industrial Park Board acts as a central clearinghouse to streamline lease processes and accelerate solutions. The Ak-Chin Community Council approves the Board's recommendations similarly to any municipality's City Council.
- Competitive lease rates and utility savings, and potential tax savings.

Businesses in the Industrial Park area are expected to continue to grow in the future. The timeframe for expansion is dependent on the leasing activity that occurs.

Other Planned Developments

Three gas stations are in preliminary planning stages in the Community. Tentative general locations are:

- Vicinity of the Ak-Chin Southern Dunes Golf Club
- Vicinity of the Industrial Park / Ak-Chin Regional Airport area
- Vicinity of the Harrah's Ak-Chin Casino and Resort area

2.4. POPULATION

The 2014 estimated population for the Ak-Chin Indian Community was 1,195 persons. Population and compound annual growth rates are shown in **Table 2-6**.

Table 2-6: Population Data and Growth Rates

Year	Ak-Chin Indian Reservation	Pinal County	State of Arizona
2000	669	179,727	5,130,632
2010	903	375,770	6,392,017
2014 (estimate)	1,195*	406,468**	6,758,251**
Compound Annual Growth Rate, between 2000 and 2010	3.04%	7.7%	2.22%

*Source: **2010-2014 American Community Survey (ACS)

**Source: Office of Employment & Population Statistics, Arizona Department of Administration, <https://population.az.gov/sites/default/files/documents/files/pop-estimates2015-04pla.pdf>

2.5. TRIBAL ENROLLMENT

The Community has a Tribal enrollment of 1,053 Tribal members, as of August 17, 2016, which includes 406 persons 17 years of age and younger, 540 persons aged 18 to 54, and 107 persons 55 years or older. The enrollment includes persons living both on and off the Reservation area.

2.6. HOUSING

Information from the Ak-Chin Housing Department indicated there are 326 housing units in the Community. Currently, construction is underway for nine housing units in the Pecan Subdivision, south of Peters and Nall Road, and future housing is planned in the Public Use area in the range of 100-150 dwelling units.

2.7. TITLE VI AND ENVIRONMENTAL JUSTICE

Title VI of the Civil Rights Act of 1964 and related statutes ensure individuals are not subjected to discrimination on the basis of race, color, national origin, age, sex, or disability. In February 1994, President Clinton signed Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.” The purpose of the order was to focus attention on the “environmental and human health conditions in minority communities and low income communities with the goal of achieving environmental justice.” The Order does not supersede existing laws or regulations; rather, it requires consideration and inclusion of these targeted populations as mandated in previous legislation including:

- Title VI of the Civil Rights Act of 1964;
- National Environmental Policy Act of 1969 (NEPA);
- Section 309 of the Clean Air Act; and
- Freedom of Information Act.

The U.S. Department of Transportation issued its final order to implement the provisions of Executive Order 12898 on April 15, 1997. This final order requires that information be obtained concerning the race, color, or national origin, and income level of populations served or affected by proposed programs, policies, and activities. It further requires that steps be taken to avoid disproportionately high and adverse impacts on these populations. One of the first steps in ensuring environmental justice is the identification of those populations specifically targeted by the Order – minority and low-income populations.

This chapter identifies disadvantaged populations within the Ak-Chin Indian Community Reservation area. The provision of improved transportation services and improvements to these areas will be a benefit. Public outreach was conducted through meetings, news articles in the Ak-Chin O’odham Runner Newspaper, surveys, and small group meetings. More details about how projects will impact the Community is provided in the Appendix (under separate cover).

Total Minority, Elderly, Below Poverty Level, Disabled, and Female Head of Household Definitions and Populations

Minority populations identified within the Title VI Related Statutes include individuals classified as elderly, disabled, female head-of-household, and persons living below poverty level. Also identified is total minority population. These minority population groups are defined in **Table 2-7**.

Table 2-7: Environmental Justice and Title VI Population Group Definitions

Environmental Justice and Title VI Population Groups	Definition
Elderly	An individual 60 years of age or over
Disabled	A non-institutionalized person that has reported a disability and is between 18 and 64 years old.
Female head-of-household	Household in which female is primary income provider and no husband is present.
Below Poverty Level	An individual of low-income is defined as a person whose median annual household income is at or below the US Department of Health and Human Services (HHS) poverty guidelines. 2010 HHS poverty thresholds for a four-person family are currently set at \$22,050.
Total Minority	This category is composed of all people who consider themselves non-White racially plus those who consider themselves White Hispanic.

Census data on Total Minority, Age 60 Years and Over, Below Poverty Level, Disabled, and Female Head of Household populations are summarized in **Table 2-8**. Trends in the data are summarized as follows:

- **Total Minority Population:** Since the Native American population is considered a minority population for the purposes of the U.S. Census, this percentage is higher than Pinal County and the state of Arizona.
- **Elderly Population:** The percentage of persons 60 years of age and older is much lower than Pinal County or the state of Arizona. The Ak-Chin Indian Community has a generally much younger population.
- **Disabled Population:** The disabled population percent is somewhat lower than Pinal County or the State of Arizona
- **Below Poverty Level Population:** The below poverty level population percentage is about three times higher than Pinal County and the state of Arizona.
- **Female Head of Household:** The percentage of female head of households is lower than Pinal County and higher than the State of Arizona

Table 2-8: 2010 Total Minority, Age 60 Years and Older, Disabled, Below Poverty Level, and Female Head of Household

Area	Total Population	Total Minority	Age 60 years and Older	Disabled Population	Below Poverty Level	Female Head of Household
		Percent	Percent	Percent	Percent	Percent
Ak-Chin Indian Community	1,195	92.4	7.1	7.7	49.6	12.7
Pinal County	375,770	27.6	19.7	12.8	15.6	16.4
State of Arizona	6,392,017	42.2	20.0	9.7	17.9	7.3

Disclaimer – This does not include enrolled members living off reservation.

Source: 2010-2014 American Community Survey (ACS)

2.8. ENVIRONMENTAL OVERVIEW

The original ancestors of the Ak-Chin O'odham (People) came from a small village near Kaka on the Tohono O'odham Nation. These villagers would travel northward along the Vekol Wash for seasonal farming. The Ak-Chin area was a prime location for flood irrigation and, over time, the seasonal farming became an ongoing endeavor. Hence, the Ak-Chin farming area became a permanent farming village. The word Ak-Chin translates as "where the wash loses itself." The essence of the Ak-Chin O'odham Him-Dak Way of Life is a strong, balanced individual and people through cultural philosophy, values, and practices. Ak-Chin is an O'odham word translated to mean "mouth of the wash" or "place where the wash loses itself in the sand or ground." The term refers to a type of farming that relies on washes – seasonal flood-plains created by winter snows and summer rains.¹

The tribe's government was formally organized in 1961, under the Indian Reorganization Act of 1934. The Ak-Chin Indian Community is governed by a five-member Tribal Council, which oversees the governmental operations and departments that service the Community of Ak-Chin. A new Tribal Constitution was voted on and approved July 23, 2016. The membership will now vote for the Chairman and Vice-Chairman.

Ak-Chin Indian Community also houses the Ak-Chin Him-Dak Eco-Museum, which focuses on presenting displays about the history and traditions of the Ak-Chin Community. The Him-Dak Eco Museum hosts two yearly celebrations: the annual Him-Dak Celebration held in April and the Native American Recognition Day Celebration held in September.

Other Community celebrations include Masik Tas, which is a celebration held in December that commemorates the day in which the Ak-Chin Indian Community was formally organized as a Community.

2.9. TOPOGRAPHY

The Ak-Chin Indian Community is in the Santa Cruz valley at an elevation of approximately 1,200 feet.

2.10. CULTURAL RESOURCES

The Ak-Chin Indian Community has a Cultural Resources Department that monitors construction projects that require earth movement within the Community to ensure cultural resources impacts are avoided or mitigated.

2.11. BIOLOGICAL RESOURCES

The Community is in the Sonoran Desert. The 8 inches of annual precipitation occur in the summer and winter. The Sonoran Desert also has an abundance of wildlife including 60 mammal species, 350 bird species, 20 amphibian species, 100+ reptile species, and 30 native fish species².

The dominant trees are the Little-leaf Palo Verde, Ironwood, Catclaw, and Saguaro. Mesquites, Cottonwoods, and Willows can be found along riparian corridors. The majority of the reservation is in the Saltbush vegetative community with small portions in the Creosote-Bursage vegetative community in the west and east. Creosote and bursage are the two most drought-tolerant plants in North America.

The saguaro is of special importance to the Southwest Native American tribes. The Sonoran Desert is the only place in the world the saguaro will grow wild. The saguaro produces a fruit at the top of the cactus that is

¹ Ak-Chin Indian Community website, <http://www.ak-chin.nsn.us/fee.html>, referenced 3/1/2016.

² Sonoran Desert, https://en.wikipedia.org/wiki/Sonoran_Desert, referenced April 2016.

harvested by Native Arizonan tribes. The fruit is harvested when it is ripe, typically starting in late June, for the Nawait I'i (Rain Ceremony) that occurs during the monsoon season. The fruit is then made into saguaro wine, jams, and jellies.

2.12. VISUAL RESOURCES

The Ak-Chin Indian Community is surrounded by and offers views of the Sierra Estrella Mountains to the northwest, and Sacaton Mountains to the east.

2.13. DRAINAGE AND WASHES

Four drainages bisect the Community – the Santa Rosa, Santa Cruz, Smith, and Vekol washes. Flow patterns are generally from the south-southeast to north.

The Vekol Wash is located west of SR 347, travels through Southern Dunes, and is the only wash with significant riparian areas remaining. Vekol Wash is a tributary to the Santa Cruz River and joins it approximately 8 miles north of the Union Pacific Railroad. A significant drainage issue is the flooding that periodically occurs within Vekol Wash across Farrell Road.

The Smith Wash runs west of SR 347 between commercial and residential areas, crosses the Maricopa-Casa Highway north of Steen Road, and runs south along Smith Road. As part of the Peters and Nall Road reconstruction, the existing box culvert was extended at the wash location and minor local drainage improvements were made, such as adding a detention basin.

The Santa Cruz Wash crosses the Maricopa-Casa Grande Highway west of Murphy Road, and the Santa Rosa Wash crosses Peters and Nall Road east of White and Parker Road. Because the Community is predominantly agricultural, most storm runoff is conveyed in constructed channels which include the Santa Rosa and Santa Cruz washes.

The plan will consider culturally and environmental sensitive areas under protection, such as riparian habitats and wetland area. The Community has historic water ways no longer used; however, these historic water ways are still within the village and the plan should consider these locations near roadways.

3. ROADWAY CONDITIONS

This chapter presents data on current and future roadway conditions to identify needs of the transportation system.

3.1. OVERVIEW OF STREET SYSTEM, TRAFFIC CONTROL, AND STREET LIGHTING

The Ak-Chin Indian Community is served by a system of roadways that include two state routes, SR 347 and SR 238 (Maricopa-Casa Grande Highway). The SR 347 corridor is a regional highway that connects the Community to Maricopa and the Phoenix metropolitan area to the north, and Interstate 8 to the south. SR 347 is a 4-lane divided highway within the Community. SR 238 runs north of the Community and provides west/east connections, including Casa Grande to the southeast.

Most roadways in the Community are two lane roadways, with one through lane in each direction. This includes Farrell Road, Peters and Nall Road, Ralston Road, and White and Parker Road. Farrell Road is a two-lane east-west collector running through the Community. The intersection of Farrell Road and SR 347 is signalized, as well as SR 347 and Harrah's Ak-Chin Casino Entrance. Stop sign control is the most common traffic control device used in the Community. It is the choice of Community to maintain a rural ambiance with regard to Farrell Road and Peters and Nall Road.

Figure 3-1 illustrates the configuration and traffic control at key intersections in the Community.

Street lighting in the Community is shown in **Figure 3-2**. This figure also denotes street lighting fixtures that are existing, but were not observed to be operating during a field review conducted in early May 2016. Improvements to replace these lighting fixtures is done under contract on a regular basis. In general, the Community is adequately lit and as new subdivisions are constructed, these include street lighting. The Community has a vendor that has provided maintenance for street lights.

3.2. CURRENT PLANNED AND PROGRAMMED PROJECTS

This section describes transportation projects contained in planning documents and programs that are located on or near the Community. Documents reviewed include the following:

- Ak-Chin Indian Community Tribal Transportation Program
- ADOT 2016-2020 Five Year Transportation Facilities Construction Program
- ADOT 2017-2021 Five Year Transportation Facilities Construction Program
- Central Arizona Governments Regional Transportation Plan
- City of Maricopa Area Transportation Plan

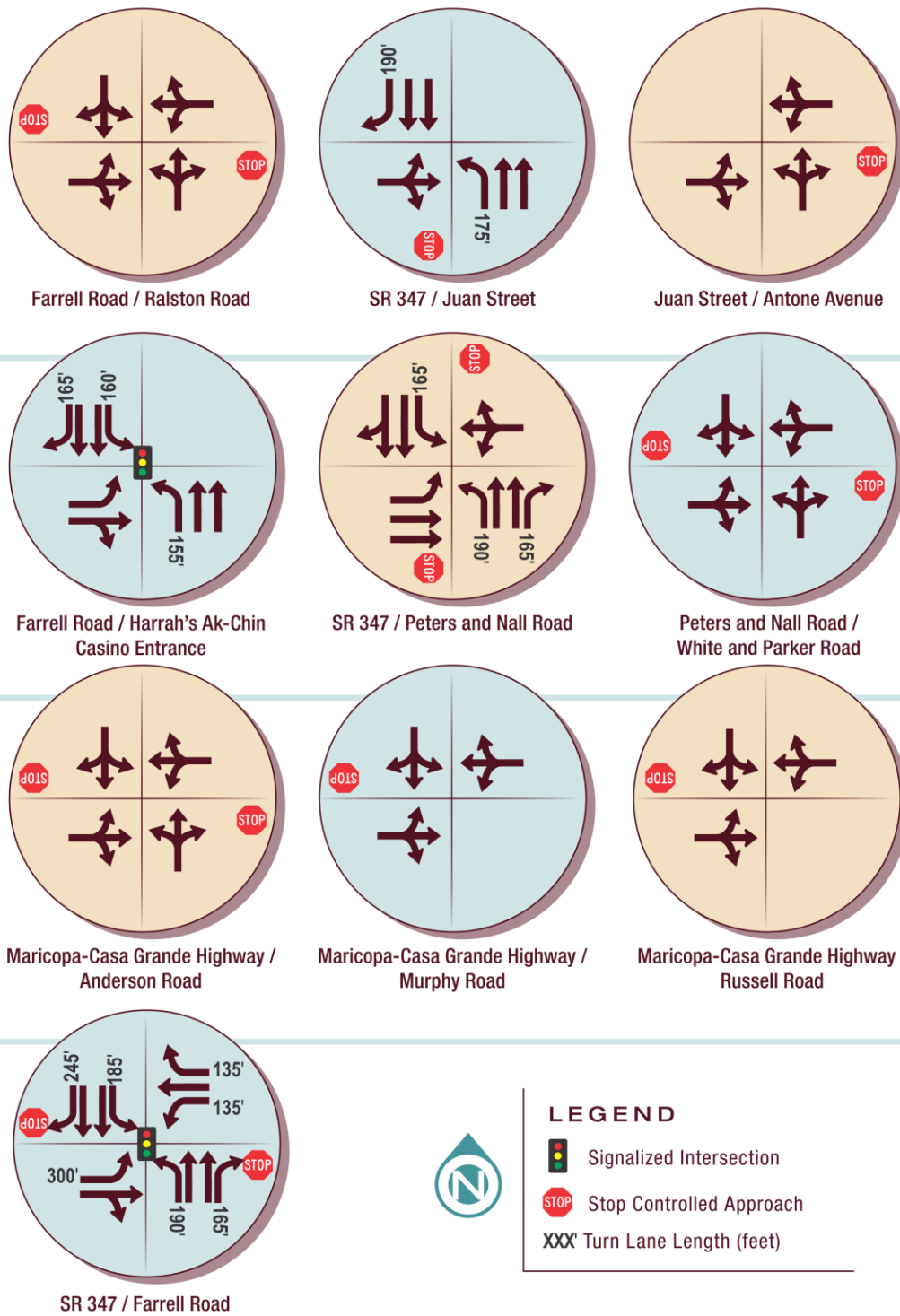


Figure 3-1: Intersection Configurations

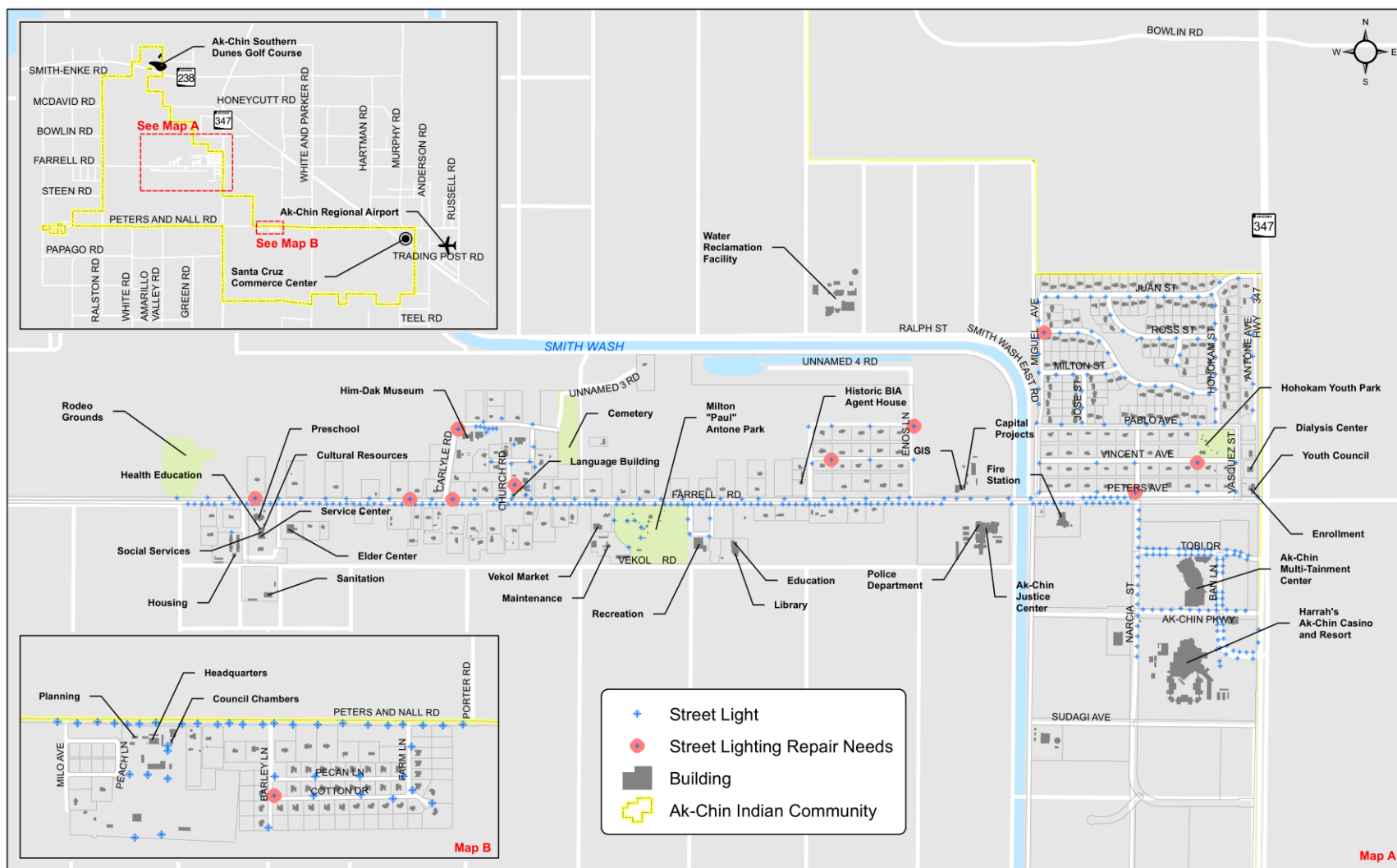


Figure 3-2: Existing Street Lighting and Lighting Needs

Ak-Chin Indian Community Tribal Transportation Improvement Program

The Central Federal Lands Highway Division and the Bureau of Indian Affairs, Division of Transportation work in a joint agreement to administer this program. Projects on the Ak-Chin Indian Community Tribal Transportation Program for the period FY 2016 – FY 2020 are summarized in **Table 3-1**.

Table 3-1: Projects on Ak-Chin Tribal Transportation Improvement Program, FY 2016-FY 2020

Project Name	Project Description	Construction Cost (\$)					
		FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	Total
MAIR 14 (2) Vekol Bridge	Develop PS & E and construct a box culvert and approaches at existing Dip Section		\$222,056	\$376,668	\$377,208	\$377,677	\$1,353,609
MAIR 25 (1) Antone Ave. and Pedestrian Pathway Improvement	Develop PS & E and reconstruct 0.3 mi of Antone Ave. with parallel crushed granite pedestrian walkway	\$375,473	\$154,027	0	0	0	\$529,500
Totals		\$375,473	\$376,083	\$376,668	\$377,208	\$377,677	\$1,883,109

Source: ACIC Resolution A-166-16

ADOT FY 2016-2020 Five Year Transportation Facilities Construction Program and FY 2017-2021 Five Year Transportation Facilities Construction Program

The *ADOT 2016-2020 and 2017-2021 Five Year Transportation Facilities Construction Programs* list one roadway improvement project near the Ak-Chin Indian Community, which involves construction of an overpass on SR 347 at the Union Pacific Railroad crossing at Milepost 173, which is located on SR 347 between Edwards Avenue and the Maricopa-Casa Grande Highway, north of Farrell Road. This project is programmed for construction in 2020. One potential impact of this project on the Community that will need to be considered during design is that traffic may divert to Farrell Road during construction.

Airport projects are also listed in the *ADOT 2016-2020 Five Year Transportation Facilities Construction Program*. Two runway pavement preservation projects are listed in the program to be constructed in 2017.

City of Maricopa Area Transportation Plan (2015)

The City of Maricopa Area Transportation Plan (December, 2015) developed a plan of improvements for target years of 2020, 2030, and 2040. The study area for the Transportation Master Plan included the City of Maricopa, the City's Municipal Planning Area, and the Ak-Chin Indian Community. A summary of recommended roadway improvements projects is provided in **Table 3-2**.

Table 3-2: City of Maricopa Roadway Project Recommendations

Project	Description
2020 PROJECTS	
SR 347, Cobblestone Farm Dr. (south) to Cobblestone Farm Dr. (north)/Lakeview Dr.	Widen to provide 3 lanes in northbound direction (6 lanes total)
Intersection of SR 347 and Smith-Enke Rd.	Upgrade the intersection at SR 347/ Smith-Enke Rd
SR 347, Edison Rd. to Lakeview Dr.	Conduct Corridor Study to determine the feasibility of upgrading to a 6-lane Urban Arizona Parkway
SR 347, Lakeview Dr. to I-10	Conduct Corridor Study to determine the feasibility of upgrading to a 6-lane Arizona Parkway with associated improvements at Riggs Rd, Old Maricopa Rd, and I-10 Traffic Interchange
Multiple roadway paving projects	Upgrade all unpaved roads forecast to carry 500 vehicles per day or more in Year 2020
2030 PROJECTS	
Honeycutt Rd., White & Parker Rd.to Hartman Rd.	Widen to 4-lane Arterial including half span of all-weather crossing of Santa Cruz Wash
SR 347, Lakeview Dr. to I-10	Implement capacity improvements/upgrades as determined by Corridor Study
SR 347, Edison Rd. to Lakeview Dr.	Implement capacity improvements/upgrades as determined by Corridor Study
White & Parker Rd., Steen Rd. to Maricopa-Casa Grande Hwy.	Widen to 4-lane Collector with improved at-grade railroad crossing and all-weather crossing of the Santa Rosa Wash
Anderson Rd., Steen Rd. to ~ ½ mile south	Pave roadway connection
Bowlin Rd., White & Parker Rd. to Anthony Blvd.	Construct 4-lane Arterial with all-weather crossing of Santa Cruz Wash
2040 PROJECTS	
Maricopa-Casa Grande Hwy., White & Parker Rd. to Russell Rd.	Reconstruct as a 4-lane Arizona Parkway with all-weather crossing of Santa Cruz Wash
Maricopa-Casa Grande Hwy., Plainview St. Extension to White & Parker Rd.	Widen to 4-lane Arterial with all-weather crossing of Santa Rosa Wash
Porter Rd., Santa Rosa Dr. to Farrell Rd.	Widen to 4-lane Collector with all-weather crossing of Santa Rosa Wash
SR 238, Ralston Rd. to SR 347	Widen to 4-lane Arterial
Papago Rd., White Rd.to SR 347	Widen to 2 lanes with a center-turn lane (Arterial)

Source: City of Maricopa Area Transportation Plan, December 2015, Table 11-2

State Transportation Improvement Program

All highway and transit projects in the state that are federally funded must be included in a federally approved State Transportation Improvement Program (STIP). Projects in the STIP must be consistent with the statewide long-range transportation plan and metropolitan transportation improvement programs (TIPs). The STIP also includes projects from the Tribal Transportation Improvement Program, which is described earlier in this chapter.

3.3. STREET INVENTORY – TRIBAL TRANSPORTATION INVENTORY

The BIA Road Inventory is a comprehensive database of all transportation facilities eligible for Tribal Transportation Program (TTP) funding by tribe, reservation, BIA agency and region, Congressional district, State, and county. Other information collected and maintained under the TTP Program includes classification, route number, bridge number, current and future traffic volumes, maintenance responsibility, and ownership. An overview of the current BIA Road inventory is summarized in **Table 3-3**.

Discussion with the BIA Western Region representative has indicated that the Community's TTP funding is based in part on the 2012 BIA Road Inventory. All proposed roads must be included in the Long Range Transportation Plan. For these reasons, this plan includes proposed inputs for the 2017 Road Inventory submittal to ensure that all proposed roads that will be in the 2017 Road Inventory update are included in the Plan.

In February 2016, a field review and traffic counts were conducted to update the BIA Road Inventory. The main updates to the Inventory were:

- New traffic counts on main roads within the Reservation area
- New truck percentages on roads within the Reservation area
- Updated wearing surface ratings
- Updates to reflect construction work that has been done since the previous Inventory update in 2010.

Table 3-3 shows the updates that are being made to the previous approved BIA Road Inventory values. The numbers in red indicate suggested changes to update the Inventory, based on a field review and traffic counts conducted in 2016. On Farrell Road, the road sections were redefined to better reflect the new roadway conditions as result of the pathways project that was completed in 2016.

In addition to the updates to existing roads, proposed roads are suggested to be added to the Inventory. These additions are summarized in **Table 3-4**. Parking areas are also eligible to be included in the BIA Road Inventory, if they are open to the public and link to a road that is in the BIA Road Inventory. Parking areas that are proposed to be included in the Road Inventory are summarized in **Table 3-5**.

A summary of edits made to the Inventory as well as the complete Inventory listing is provided in the Appendix, under separate cover.

Table 3-3: BIA Road Inventory Summary for Selected Characteristics (updates shown in Red, green shading indicates a bridge section)

Field 6	Field 4	Field 5	Field 10	Field 12	Field 13	Field 14	Field 15	Field 16	Field 17	Field 18	Field 21	Field 22	Field 23	Field 24		
Road Name	Route No.	Section Number	<u>Functional Class Code</u> 1=Major arterial road 2=Rural Minor arterial road 3=Streets serving residential areas 4=rural major collector 5=rural local road 6=city minor arterial 7=City collector 8=pathways and trails 9=other transportation facilities such as parking lots 10=airstrips	<u>Construction Need Code</u> 0=road improved to acceptable standard or proposed to receive construction funds on an IRR TIP 1=existing BIA road needing improvement 2=Construction need other than BIA road needing improvement 3=substandard or other roads for which no improvements are planned (maintenance only) 4=Proposed roads	<u>Surface Type Code</u> 0=Proposed road 1=Earth Road 3=Gravel 4=Bituminous material < 2”thick 5= Bituminous material > 2”thick	<u>Shoulder Type Code</u> 1=Earth shoulder 2=Stabilized shoulder 3=Paved shoulder 4=Curb	<u>Section Length, Miles</u>	<u>Surface Width, Feet</u>	<u>Shoulder Width, Feet</u>	<u>Bridge Number</u>	<u>Average Daily Traffic Count Year</u>	<u>Average Daily Traffic Count, Vehicles per Day</u>	<u>% Trucks</u>	<u>Surface Condition Index</u> (Value between 0 and 5)	<u>Roadbed Condition Code</u> 0=Proposed road 1=Primitive Trail 2=Bladed unimproved road 3=Minimum built up roadbed 4=a designed and constructed roadway with some drainage and alignment improvements required 5=A roadbed constructed to adequate standards with good horizontal and vertical alignment and proper drainage 6=a roadbed constructed to adequate standards-curb and gutter on one side 7= A roadbed constructed to adequate standards- curb and gutter on both sides	<u>Right-Of-Way Width, Feet</u>
Farrell Rd	14	10	4	1	5	3	1.1	24	3		2009 (2016)	543 (1383)	4 (13.3)	2.1 (1.8)	5	80
Farrell Rd	14	20	4	4						160H				N/A		
Farrell Rd	14	30	4	1(0)	5		2.4(0.49)	23	6		2009	2,714	4	3.2 (2.8)	5	80
Farrell Rd	14	35	4	0	5	3	2.1				2016	(2,210)	16.4			
Farrell Rd	14	40	4	0						H154						
Farrell Rd	14	50	4	1(0)	5	3	0.5(0.3)	24	4		2009 (2016)	2,079 (2,775)	4 (11.8)		5	80
Antone Ave	25	10	3	1	5		0.3	28	0					1.8 (1.0)	5	50
Bunger Rd	27	10	3	2						H580						
Bunger Rd	27	20	3	2	4		0.1	56	0					2.4 (2.0)	4	60
Bunger Rd	27	30	3	2	4		0.1	19	0					2.2(2.2)	4	60
White & Parker Rd	33	810	4	2	5	3	5.8	24	2		2005	4,200	8		5	0
White & Parker Rd	33	820	4	2	5	3	2.6	24	2		2009 (2016)	1,392 (1,492)	23 (29.2)		5	0
Murphy Rd	93	10	5	1	5	3	0.5	38	4		2009	1,060	9		7	60
Carlyle St.	100	10	3	1	5	4	0.3	37	4					4.2 (3.4)	5	0
Miguel St.	100	20	3	1	5		0.3	37	4					4.2 (3.4)	7	0
Antone Rd	100	30	5	1	5		0.4	18	2					4.3 (3.6)	6	0
Antone St	100	40	5	1	5		0.2	14	0					0(0)	2	0
Elder Rd	101	10	3	1	5	4	0.1	21	4					4.0 (3.5)	7	0
Elder Rd.	101	20	3	1	5	4	0.1	21	0					4.0 (3.5)	7	0
Elder Rd	101	30	3	1	5	4	0.1	21	4						7	0
Elder Loop	101	40	3	1	5	4	0.1	23	4					3.9(3.2)	7	0
Elder Loop	101	50	3	1	5	4	0.1	21	4					3.3(3.0)	7	0

Field 6	Field 4	Field 5	Field 10	Field 12	Field 13	Field 14	Field 15	Field 16	Field 17	Field 18	Field 21	Field 22	Field 23	Field 24		
Road Name	Route No.	Section Number	Functional Class Code 1=Major arterial road 2=Rural Minor arterial road 3=Streets serving residential areas 4=rural major collector 5=rural local road 6=city minor arterial 7=City collector 8=pathways and trails 9=other transportation facilities such as parking lots 10=airstrips	Construction Need Code 0=road improved to acceptable standard or proposed to receive construction funds on an IRR TIP 1=existing BIA road needing improvement 2=Construction need other than BIA road needing improvement 3=substandard or other roads for which no improvements are planned (maintenance only) 4=Proposed roads	Surface Type Code 0=Proposed road 1=Earth Road 3=Gravel 4=Bituminous material < 2”thick 5= Bituminous material > 2”thick	Shoulder Type Code 1=Earth shoulder 2=Stabilized shoulder 3=Paved shoulder 4=Curb	Section Length, Miles	Surface Width, Feet	Shoulder Width, Feet	Bridge Number	Average Daily Traffic Count Year	Average Daily Traffic Count, Vehicles per Day	% Trucks	Surface Condition Index (Value between 0 and 5)	Roadbed Condition Code 0=Proposed road 1=Primitive Trail 2=Bladed unimproved road 3=Minimum built up roadbed 4=a designed and constructed roadway with some drainage and alignment improvements required 5=A roadbed constructed to adequate standards with good horizontal and vertical alignment and proper drainage 6=a roadbed constructed to adequate standards-curb and gutter on one side 7= A roadbed constructed to adequate standards- curb and gutter on both sides	Right-Of-Way Width, Feet
Carlyle Rd	103	10	3	1	5		0.2	22	0					3.0(2.7)	5	0
Eco-museum Rd	103	20	3	1(0)	3 (5)		0.3	24	0					0(4.2)	3	0
Church Rd	103	30	3	1 (0)	3		0.1	27	0					2.2(4.0)	3	0
Church Rd	103	35	3	4(0)			0.1							N/A (4.0)		
No Name Rd.(West Peters Ave)	103	40	3	1(0)	3		0.1	24	0					2.5(4.0)	3	0
Cemetery Rd	103	50	3	1	5		0.1	15	0					1.5(1.0)	4	0
Cemetery Rd	103	60	3	1	1		0.1	24	0					2.4(1.8)	2	0
Cemetery Rd	103	90	3	4			0.1									0
Cemetery Rd	103	100	3	4			0.4									0
Beehive Ln	104	10	3	2	5		0.3	28	4					4.2(3.0)	7	50
Farm Ln	104	20	3	2	5		0.2	28	4					4.2(3.0)	7	50
Pecan Ln	104	30	3	2	5		0.3	28	4					4.2(3.0)	7	50
Barley Ln	104	40	3	2	5		0.2	28	4					4.2(3.0)	7	50
Unnamed(Proposed)	104	50	3	4			0.1									
Unnamed(Proposed)	104	60	3	4			0.1									
Unnamed (Proposed)	104	70	3	4			0.5									
Unnamed(Proposed)	104	80	3	4			0.2									
Miguel Ave	107	10	3	2	5	4	0.3	28	4					3.3(2.8)	7	50
Jose St.	107	20	3	2	5	4	0.1	29	4					3.1(2.7)	7	50
Vasilio St	107	30	3	2	5	4	0.1	29	4					3.9(1.5)	7	50
Hohokam St	107	40	3	2	5	4	0.3	29	4					2.9(2.5)	7	50
Milton St	107	50	3	2	5	4	0.2	29	4					3.1(2.8)	7	50
Ralph St	107	60	3	2	5	4	0.4	29	4		2016	200	15.6	3.1(2.3)	7	50
Ross St	107	70	3	2	5	4	0.3	29	4					3.2(2.4)	7	50
Juan St	107	80	3	2	5	4	0.5	30	4					2.0(1.5)	7	50

Field 6	Field 4	Field 5	Field 10	Field 12	Field 13	Field 14	Field 15	Field 16	Field 17	Field 18	Field 21	Field 22	Field 23	Field 24		
Road Name	Route No.	Section Number	Functional Class Code 1=Major arterial road 2=Rural Minor arterial road 3=Streets serving residential areas 4=rural major collector 5=rural local road 6=city minor arterial 7=City collector 8=pathways and trails 9=other transportation facilities such as parking lots 10=airstrips	Construction Need Code 0=road improved to acceptable standard or proposed to receive construction funds on an IRR TIP 1=existing BIA road needing improvement 2=Construction need other than BIA road needing improvement 3=substandard or other roads for which no improvements are planned (maintenance only) 4=Proposed roads	Surface Type Code 0=Proposed road 1=Earth Road 3=Gravel 4=Bituminous material < 2”thick 5= Bituminous material > 2”thick	Shoulder Type Code 1=Earth shoulder 2=Stabilized shoulder 3=Paved shoulder 4=Curb	Section Length, Miles	Surface Width, Feet	Shoulder Width, Feet	Bridge Number	Average Daily Traffic Count Year	Average Daily Traffic Count, Vehicles per Day	% Trucks	Surface Condition Index (Value between 0 and 5)	Roadbed Condition Code 0=Proposed road 1=Primitive Trail 2=Bladed unimproved road 3=Minimum built up roadbed 4=a designed and constructed roadway with some drainage and alignment improvements required 5=A roadbed constructed to adequate standards with good horizontal and vertical alignment and proper drainage 6=a roadbed constructed to adequate standards-curb and gutter on one side 7= A roadbed constructed to adequate standards- curb and gutter on both sides	Right-Of-Way Width, Feet
Thomas St	108	10	3	2	5	4	0.2	24	4					3.2(2.7)	7	50
Enos St	108	20	3	2	5	4	0.2	24	4					3.9(3.4)	6	50
Peters Ave	108	30	3	2	5	4	0.2	24	4					3.3(2.5)	7	50
Vincent Ave	108	40	3	2	5	4	0.2	25	4					3.3(2.8)	6	50
Miguel Ave	109	10	3	1	5	4	0.2	28	4					2.9(1.1)	7	60
Narcia St	109	20	3	1	5	4	0.2	29	4					3.9(3.1)	7	60
Vasquez St	109	30	3	1	5	4	0.2	29	4					2.9(2.6)	7	60
Peters Ave	109	40	3	1	5	4	0.4	29	4					3.9(3.2)	7	60
Vincent Ave	109	50	3	1	5	4	0.4	29	4					3.9(2.8)	7	60
Pablo Ave	109	60	3	1	5	4	0.4	29	4					3.4(2.9)	7	60
Library Access Rd	111	10	3	2	5	4	0.2	29	4					4.6 (3.4)	7	50
Library Access Rd	111	20	3	2	5	4	0.1	29	4					4.6(3.2)	7	50
Ball Field Access Rd	113	10	3	2	5	2	0.1	30	6					3.5(3.2)	5	50
Santos St	117	10	3	2	5		0.1	21	0					3.9(3.3)	5	60
Casino Main Access Rd	118	10	9	2	5		0.1	44			2009	4,226	1	4.3(4.0)		60
Casino Rear Access Rd	119	10	5	2	3	1	0.2	30	0					3.0(2.9)	3	60
Vekol Rd	120	10	3	2	5		0.1	20	0					3.2(3.0)	5	60
Vekol Rd	120	20	5	2	1		1.5	22	0					0(0)	2	60
Home Rd 1	121	10	3	2	1		0.1	19	0					0(0)	2	50
Home Rd 2	121	20	3	2	1		0.1	21	0					0(0)	2	50
Home Rd 2	121	30	3	2	1		0.1	16	0					0(0)	2	50
Maricopa Casa Grande Hwy	375	10	2	2	5	3	1.2	24	2		2005	10,900	8		5	66
	375	10		2	4		1.1		0						5	
Peters & Nall Rd	9016	10	5	2 (0)	5		1	30	0		2008	1,103	0	1.9(5.0)	5	60
Peters & Nall Rd.	9016	20	5	2 (0)						H150						

Field 6	Field 4	Field 5	Field 10	Field 12	Field 13	Field 14	Field 15	Field 16	Field 17	Field 18	Field 21	Field 22	Field 23	Field 24		
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Peters & Nall Rd	9016	30	5	2(0)	5		1	30	0		2008 (2016)	1,103 (797)	27.6	1.9(5.0)	5	60
Peters & Nall Rd	9016	40	5	2(0)	5	3	1	24	2					2.3(5.0)	5	60
Peters & Nall Rd	9016	50	5	2	1		1	33	0					0(0)	3	60
Peters & Nall Rd	9016	60	5	4						161H						
Peters & Nall Rd	9016	70	5	2	1		1.4	33	0					0(0)	3	60
Peters & Nall Rd	9016	80	5	2	1		0.4	20	0					0(0)	3	60
Ralston Rd	9030	810	4	2	5	3	0.6	26	12		2005	1,000	8		5	66
Ralston Rd	9030	820	4	2	5	3	0.1	24	15						5	66
Ralston Rd	9030	830	4	2	5	3	0.4	24	12						5	66
Ralston Rd	9030	840	4	2	5		1.5	27	0					3.6(3.0)	5	66
Ralston Rd	9030	850	4	2	5	3	0.5	23	3		2005 (2016)	500 (1,466)	10.7	2.2(2.2)	5	66
Ralston Rd	9030	860	4	2	5	3	3	24	4		2005 (2016)	1,792	40.1	3.9(3.5)	5	66
Peters & Nall Rd	C016	810	5	2	5		1	18	0					3.5(3.0)	5	
Peters & Nall Rd	C016	820	5	2	4		0.5	37	0					3.0(3.0)	5	
West Trading Post Rd	C040	810	5	2	5		1	24	0						5	
Anderson Rd	C045	810	5	2						C211						
Anderson Rd	C045	820	5	2	1		1.1	27	0		2016	935	44.8		2	
Russell Rd	C049	810	5	2	5		1	24	0		2016	533	18.7		5	
Maricopa Casa Grande Hwy	C375	810	2	2	5	3	0.6	25	2		2005	9,400	0		5	150
Maricopa Casa Grande Hwy	C375	820	2	2	5	3	1.2	25	2		2005	9,900	0		5	150
Maricopa Casa Grande Hwy	C375	830	2	2	5	3	0.6	25	2		2005	8,600	0		5	150

Field 6	Field 4	Field 5	Field 10	Field 12	Field 13	Field 14	Field 15	Field 16	Field 17	Field 18	Field 21	Field 22	Field 23	Field 24		
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Maricopa Casa Grande Hwy	C375	840	2	2	5	3	0.1	25	2						5	150
Maricopa Casa Grande Hwy	C375	850	2	0						9073						
Maricopa Casa Grande Hwy	C375	860	2	2	5	3	0.4	25	2						5	150
Maricopa Casa Grande Hwy	C375	870	2	0						9072						
Maricopa Casa Grande Hwy	C375	880	2	2	5	3	0.1	25	2						5	150
Maricopa Casa Grande Hwy	C375	890	2	2						9071						
Maricopa Casa Grande Hwy	C375	900	2	2	5	3	0.1	25	2						5	150
Maricopa Casa Grande Hwy	C375	910	2	2						9070						
Maricopa Casa Grande Hwy	C375	920	2	2	5	3	0.5	26	2						5	150
SR 238	S238	810	2	2	5	3	1	25	1		2007	5,731	0	2.8 (3.9)	5	
SR 238	S238	820	2	2	5	3	1	24	2		2007	5,731	0	2.4 (3.9)	5	
SR 238	S238	830	2	2	5	3	1.6	24	2		2007 (2016)	8,325 (5,384)	0	2.4 (3.9)	5	
SR 238	S238	840	2	2	5	3	0.3	35	10		2007 (2011)	8,325 (9,593)	0	2.8 (3.9)	5	
SR 238	S238	850	1	2	5	3	0.4	57	10		2008	10,919	0	3.0 (3.9)	5	
SR 347	S347	810	2	2	5	3	0.4	24	16						5	60
SR 347	S347	820	2	2	5	3	5.7	48	20		2008 (2016)	3,398 (3370)	0	3.6 (4.0)	5	150
SR 347	S347	830	2	2	5	3	3.5	48	22		2008 (2014)	6,596 (11,746)	0	2.5 (4.0)	5	150
SR 347	S347	840	2	2						60908						

Field 6	Field 4	Field 5	Field 10	Field 12	Field 13	Field 14	Field 15	Field 16	Field 17	Field 18	Field 21	Field 22	Field 23	Field 24		
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SR 347	S347	850	1	2	5	3	1.5	48	22		2008 (2016)	10,528 (13,650)	0 (6.3)	2.5 (4.0)	5	150
SR 347	S347	860	1	2	5	4	2	60	12		2008 (2016)	33,549 (30,456)	0	4.0 (4.0)	6	150
SR 347	S347	870	1	2	5	4	0.5	72	8		2006 (2016)	30,440 (30,145)	0	4.0 (4.0)	7	150
White & Parker Rd	U033	810	4	2	5	3	1.1	24	4		2008	2,999	0		5	
White & Parker Rd	U033	820	4	2						XXXD						
White & Parker Rd	U033	830	4	2	5	3	0.5	24	6		2008	2,999	0		5	
Russell Rd	U049	810	5	2						C212						
Russell Rd	U049	820	5	2	5	3	0.7	27	12		2009	454	10	3.5 (3.0)	5	
Maricopa Casa Grande Hwy	U375	810	2	2	5	3	1.2	30	2		2006 (2016)	7042 (15,079)	0		5	150
Maricopa Casa Grande Hwy	U375	820	4	2						10269						
Maricopa Casa Grande Hwy	U375	830	2	2	5	3	0.4	30	2		2006	7276	0		5	150
Maricopa Casa Grande Hwy	U375	840	2	2	5	3	0.8	30	4		2006	7509	0		5	150
Maricopa Casa Grande Hwy	U375	850	1	2	5	3	4.5	24	2		2006	10200	0		5	150
Maricopa Casa Grande Hwy	U375	860	2	2	5	3	2.5	25	2		2005	8500	0		5	150
Maricopa Casa Grande Hwy	U375	870	2	2	5	3	0.2	25	2		2005	9000	0		5	150
Maricopa Casa Grande Hwy	U375	880	4	2						9069						
Maricopa Casa Grande Hwy	U375	890	2	2	5	3	0.4	25	2		2005	9000	0		5	150
Maricopa Casa Grande Hwy	U375	900	4	2						9068						

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Maricopa Casa Grande Hwy	U375	910	1	2	5	3	2.5	25	2		2005	10,700	0		5	150
Maricopa Casa Grande Hwy	U375	920	2	2	5	3	0.8	24	2						5	150
Maricopa Casa Grande Hwy	U375	930	2	2	5	4	2.5	60	4						7	150
Ralston Road	U903	810	4	2	5	3	0.5	24	4		2005	800	0		5	66

Note: Updated (2016) traffic counts conducted by Kimley-Horn / Field Data Services

Table 3-4: Suggested Proposed or New Roads to be added to the BIA Road Inventory

Street Name / BIA Route Number	From	To	Project Length (miles)	BIA Road Functional Classification*	Existing Roadway or Site Conditions	Proposed Improvement	Existing and/or Proposed Development Served by Road	Proposed Construction Date
Proposed New Roads for Public Use Area								
Justice Center Drive – Tribal Road	Farrell Road	0.379 miles south of Farrell Road	0.38	4	New roadway	Construct new roadway with two 12- foot wide travel lanes, six-foot bike lanes, curb and gutter, and a six- foot wide path on both sides of the roadway. The new ROW varies between 70 and 82- feet.	This road will support a Public Use area, providing access to several Community facilities.	2016-2017
Ak-Chin Parkway	Cemetery Road extension	Smith Wash	0.95	4	New roadway	Ultimate construction is for a new roadway with four 14-ft. wide travel lanes, six-foot bike lanes, a 14-ft.-wide median, curb and gutter, and a six-foot path on both sides of the roadway. The new ROW is 110-ft. Initially the road will be constructed as a two-lane facility with two-11- ft. travel lanes, six-foot bike lanes, and a 6-ft. wide path on one side of the road.	This road will support a Public Use area, providing access to several Tribal facilities. This road is a major spine road that will connect to a new traffic signal at SR 347 and will eventually link to a Commercial Area, as well as providing access to new north-south roadways, including Justice Center Drive, Cemetery Road extension, and Alternate D Roadway.	2016 – 2017 (initial phase)
Cemetery Road extension	Farrell Road	East-West Road	0.38	4	New roadway – this is an extension of an existing roadway south of Farrell Road	Construct new roadway with two 12-foot wide travel lanes, six-foot bike lanes, curb and gutter, and a six-foot path on both sides of the roadway. The new ROW is 82-feet wide.	This road will support a Public Use area, providing access to a number of Community facilities.	

Street Name / BIA Route Number	From	To	Project Length (miles)	BIA Road Functional Classification*	Existing Roadway or Site Conditions	Proposed Improvement	Existing and/or Proposed Development Served by Road	Proposed Construction Date
Unnamed North-South Road (currently referred to as "Alternate D")	Farrell Road	East-West Road	0.38	4	New roadway	Two-12' travel lanes, six-foot shoulders, curb and gutter, and a six-foot wide path on both sides of the roadway. The new ROW is 82-feet wide.	This will serve Antone Park, and the Recreation Center and will connect to a new East-West Roadway serving multiple Community facilities	2016- 2017
Proposed Ak-Chin Circle Roads								
Ak-Chin Parkway	Smith Wash	SR 347	TBD	4	New roadway	Construct new roadway with two 12- foot wide travel lanes, six-foot bike lanes, curb and gutter, and a six- foot wide path on both sides of the roadway.	This road will support a Public Use area, providing access to several Tribal facilities. It will be constructed in two phases- the first phase will be SR 347 to Narcia Street. A later phase will be from Narcia Street to just west of the Smith Wash.	

Street Name / BIA Route Number	From	To	Project Length (miles)	BIA Road Functional Classification*	Existing Roadway or Site Conditions	Proposed Improvement	Existing and/or Proposed Development Served by Road	Proposed Construction Date
Narcia Street	Ak-Chin Parkway	W. Komkcud Avenue	TBD	4	New roadway	Two-12' travel lanes, six-foot shoulders, curb and gutter, and a six-foot wide path on both sides of the roadway.	This route will serve the Public Use and Commercial area and will provide access to SR 347 and Farrell Road. Note: Narcia Street is in the inventory between Farrell Road and the Casino boundary and is listed as Casino Rear Access Drive (Route 0119, Section 10)	
Narcia Circle	Narcia Street	Cul-de-sac end	TBD	3	New roadway	Two-lane roadway	Ak-Chin Circle area development	
W. Komkcud Avenue	Narcia Street	SR 347	TBD	4	New roadway	Two-lane roadway	Ak-Chin Circle area development	
Sudagi Avenue	Smith Wash	SR 347	TBD	3	New roadway	Two-lane roadway	Ak-Chin Circle area development	
W. Tobi Drive	Narcia Street	SR 347	TBD	3	New roadway	Two-lane roadway	Ak-Chin Circle area development	
N. Ban Lane	Ak-Chin Parkway	Tobi Drive	TBD	3	New roadway	Two-lane roadway	Ak-Chin Circle area development	
Proposed New Roads for Pecan Subdivision								
West Pecan Lane	North Milo Avenue	North Peach Lane	0.10	3	New roadway	Two-14' travel lanes, with a rolled curb and gutter and 6' sidewalk on both sides of the street.	This will serve a new residential subdivision area.	2016

Street Name / BIA Route Number	From	To	Project Length (miles)	BIA Road Functional Classification*	Existing Roadway or Site Conditions	Proposed Improvement	Existing and/or Proposed Development Served by Road	Proposed Construction Date
West Cotton Drive	North Milo Avenue	North Peach Lane	0.10	3	New roadway	Two-14' travel lanes, with a rolled curb and gutter and 6' sidewalk on both sides of the street.	This will serve a new residential subdivision area.	2016
North Milo Avenue	Peters and Nall Road	0.16 miles south of Peters and Nall Road	0.16	4	New roadway	Two-14' travel lanes, with a rolled curb and gutter on the east side of the street, a ribbon curb on the west side of the street, and a 6' sidewalk on the east side of the street.	This will serve a new residential subdivision area.	2016
North Peach Lane	West Cotton Drive	West Pecan Lane	0.06	3	New roadway	Two-14' travel lanes, with a rolled curb and gutter and 6' sidewalk on both sides of the street.	This will serve a new residential subdivision area.	2016

TBD=To Be Determined

Table 3-5: Parking Lots Recommended to be included in the BIA Road Inventory

Location	Address
Ak-Chin Indian Community Headquarters and Planning Department	42507 W. Peters and Nall Road
Ak-Chin Indian Community Enrollment Office	W. Farrell Road
Ak-Chin Indian Community Fire Department	45401 Farrell Rd
Ak-Chin Indian Community Justice Center	45525 W. Farrell Road
Ak-Chin Indian Community Capital Projects Department	W. Farrell Road
Historic BIA Agent House	Thomas Street
Ak-Chin Indian Community Library	46521 W. Farrell Road
Ak-Chin Education Department	46521 W. Farrell Road
Ak-Chin Recreation Department	48141 W. Farrell Road
Milton “Paul” Antone Park	46751 W. Farrell Road
Maintenance and Motor Pool	Farrell Road
Ak-Chin Language Building	Farrell Road
Him-Dak Eco Museum	47685 W. Eco Museum Road
Ak-Chin Social Services	Farrell Road
Ak-Chin Service Center	Farrell Road
Ak-Chin Health Education and Preschool	48227 W. Farrell Road
Ak-Chin Housing	Farrell Road
Ak-Chin Public Works and Sanitation Department	Farrell Road

3.4. FUNCTIONAL CLASSIFICATION

This section of the report discusses the functional classification of roadways within the Community and discusses potential functional classification upgrades.

Functional classification is the grouping of highways, roads, and streets by the character of the service they provide. One functional class differs from another according to the degree of access and mobility. Collector and local streets provide land access, carry local traffic to the neighborhoods, and distribute traffic to the arterials. Arterial streets provide mobility over long distances with reduced access to adjoining properties.

Functional Classification is used in planning and designing and to allocate federal funding

Tribal Transportation Inventory Functional Classifications

There are currently eight BIA roadway functional classifications in the Tribal Transportation Program Inventory, which are summarized in **Table 3-6**. The table also shows the classification of Ak-Chin Indian Community roadways. Presently, there is no direct correlation between BIA functional classifications and FHWA functional classifications, which are used to determine if a road is eligible for funding through functional classification based federal highway programs other than the Tribal Transportation Program. Thus, one of the objectives of this study was to review current BIA functionally classified tribal roadways to determine if there are BIA Class 2, 4 and 5 roadways that meet the criteria for FHWA functional classifications and eligibility for this added federal highway program funding. A few of the tribal roads on the reservation have already been assigned FHWA functional classifications and are discussed in the next section.

FHWA Functional Classifications

Federal legislation uses functional classification to determine eligibility for several funding categories under the Federal-aid program. Federal funding is available for collector roads and higher. Federal funding programs assign a substantial share of resources to the Principal Arterial system, in comparison to lower functional classifications. Federal functional classification categories are:

- Interstates
- Other Freeways and Expressways
- Other Principal Arterials
- Minor Arterials
- Major and Minor Collectors
- Local Roads

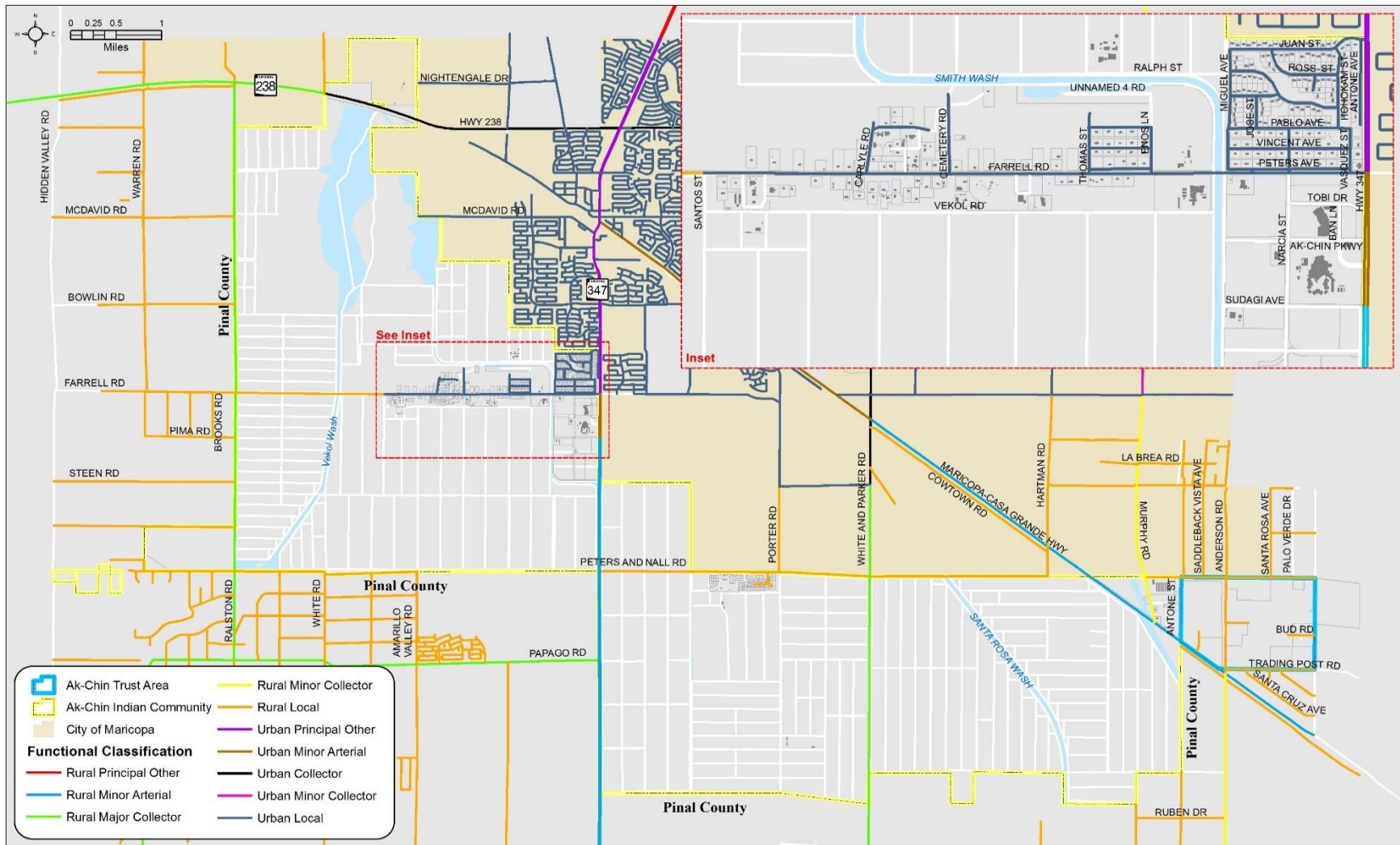
The federally functionally classified roads within the Community are shown below and in **Figure 3-3**.

- **Rural minor arterial roads** – SR 347 and the Maricopa-Casa Grande Highway
- **Rural major collector roads** – Ralston Road, White and Parker Road, and Smith Enke Road
- **Rural minor collector roads** – Murphy Road (north of Maricopa-Casa Grande Highway, Anderson Road (south of Maricopa-Casa Grande Highway)

A review of the study area roads indicated that Peters and Nall Road and Farrell Road may potentially qualify to be federally functionally classified as collector roads, as shown in **Table 3-7**.

Table 3-6: BIA Road Classifications

Class	Description	Roads that are in this class
1	Major arterial roads providing an integrated network with characteristics for serving traffic between large population centers, generally without stub connections and having average daily traffic volumes of 10 000 vehicles per day or more with more than two lanes of traffic	SR 347, sections of Maricopa–Casa Grande Highway
2	Rural minor arterial roads providing an integrated network having the characteristics for serving traffic between large population centers, generally without stub connections. May also link smaller towns and communities to major resort areas that attract travel over long distances and generally provide for relatively high overall travel speeds with minimum interference to through traffic movement. Generally provide for at least inter-county or interstate service and are spaced at intervals consistent with population density. This class of road will have less than 10,000 vehicles per day.	Maricopa – Casa Grande Highway, SR 238
3	Streets that are located within communities serving residential areas.	Antone Ave, Bungler Rd, Carlyle St, Miguel St, Elder Rd, Carlyle Rd, Ecomuseum Rd, Church Rd, No Name Rd, Cemetery Rd, Beehive Ln, Farm Ln, Pecan Ln, Barley Ln, Unnamed Rd, Miguel Ave, Jose St, Vasilio St, Hohokam St, Milton St, Ralph St, Ross St, Juan St, Thomas St, Enos St, Peters Ave, Vincent Ave, Miguel Ave, Marcia St, Vasquez St, Pablo Ave, Library Access Rd, Ball Field Access Rd, Santos St, Vekol Rd, Home Rd 1, Home Rd 2
4	Rural major collector road is collector to rural local roads.	Farrell Rd, White and Parker Rd, Ralston Rd
5	Rural local road that is either a section line and/or stub type roads, make connections within the grid of the IRR system. This class of road may serve areas around villages, into farming areas, to schools, tourist attractions, or various small enterprises. Also included are roads and motorized trails for administration of forests, grazing, mining, oil, recreation, or other use purposes.	Murphy Rd, Peters and Nall Rd, Antone Rd, Casino Rear Access Drive, Anderson Rd, Russell Rd
6	City minor arterial streets that are located within communities, and serve as access to major arterials.	None Currently
7	City collector streets that are located within communities and serve as collectors to the city local streets.	None Currently
8	This class encompasses all non—road projects such as paths, trails, walkways, or other designated types of routes for public use by foot traffic, bicycles, trail bikes, snowmobiles, all-terrain vehicles, or other uses to provide for the general access of non-vehicular traffic.	None Currently



Source: ADOT GIS

Figure 3-3: Federal Highway Administration Functional Classifications

Table 3-7: Federal Functional Classification Potential Upgrades

Road Name	Segment	Current Federal Functional Classification	Proposed Change	Justification	2016 Average Daily Traffic Volume (vehicles per day)*
Peters and Nall Road	SR 347 to White and Parker Road	Rural Local	Minor Collector	This road serves as a collector road and provides access to several residential subdivisions as well as Ak-Chin Tribal Headquarters, Ak-Chin Planning and Development Department, Tribal Council Chambers, and several other Tribal Departments.	800
Farrell Road	Ralston Road to SR 347	Rural Local	Minor Collector	This road serves as a collector road and provides access to several residential subdivisions as well as numerous Tribal Departments, and services, as well as the Police and Fire Departments.	1,400-2,800

*rounded to the nearest hundred vehicles per day

Source: ADOT GIS

Process to Change Federal Functional Classification

The process to change the Federal functional classification is excerpted from the ADOT, MPO, and COG *Guidelines and Procedures Manual* (<http://www.azdot.gov/planning/transportation-planning/adot-mpo-and-cog-guidelines-and-procedures-manual/>), as follows.

1. The public agency (city or county) requesting a modification to Arizona's approved Urban Area Boundary System or Functional Classification System must send a written request to the regional planning body (MPO, or COG). Modifications to an urban boundary must include maps showing current and proposed boundaries. Requests for changes in functional classification must identify the following:
 - a) Any and all routes to be added and/or deleted from the approved Functional Classification System;
 - b) the reasons and purpose for the modification of the routes to be added or deleted;
 - c) All pertinent data regarding the transportation uses of the routes: Route name, termini, mileage, and average daily traffic (ADT) must be included.
2. The regional planning body should consider the request and decide whether or not to support it. Because there are statewide mileage limitations and percentage restrictions on the statewide Functional Classification System, especially on Principal Arterials, the regional planning body should address how mileage increases can be offset by mileage decreases within that planning region to maintain its mileage limitations.
3. If the regional planning body supports the requested modifications it sends the approval in one of the following forms: (a) an adopted resolution passed by the regional planning body; or (b) an approved motion shown in the minutes from an official meeting of the regional planning body.
4. If the regional planning body does not support the requested modification the requester may still send the proposed modification to ADOT for consideration (although its probability of final approval will be greatly lessened).

5. *The Multimodal Planning Division of ADOT will assess the impacts of proposed urban area or functional classification modifications to the following:*
 - a) *the statewide Functional Classification System;*
 - b) *National Highway System (NHS);*
 - c) *the Highway Performance Monitoring System (HPMS);*
 - d) *level of development (LOD);*
 - e) *the statewide transportation plan;*
 - f) *the State and Local 5-Year Construction Programs;*
 - g) *future highway development corridors;*
 - h) *Other transportation planning criteria on a case-by-case basis. The Transportation Planning Division will normally take into account the opinions and views of local officials, regional planning bodies, and ADOT District Engineers when deciding whether or not to support a request.*
6. *If the Multimodal Planning Division supports a request for modification(s) to the Urban Area Boundary System or Functional Classification System, it will transmit that request to the Division Office of the Federal Highway Administration along with a complete discussion of the rationale for ADOT's support of the modification.*
7. *If the Multimodal Planning Division does not support a request, a copy of the rationale for denial will be sent to the regional planning body and to the original requester.*

3.5. TRAFFIC VOLUMES

Current Traffic Volumes

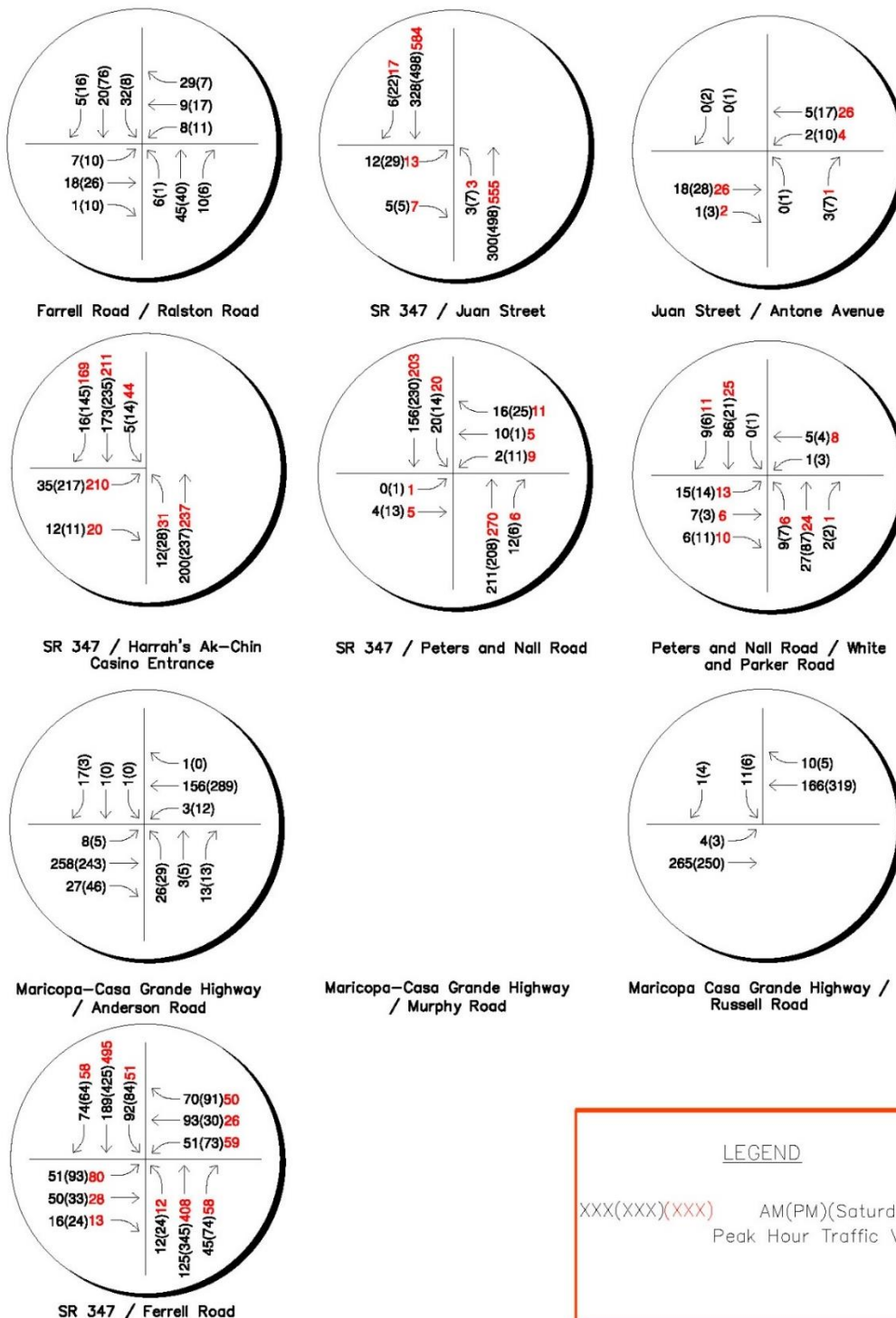
Traffic volumes on the major streets and intersection turning movement counts in the Ak-Chin Indian Community were collected in January 2016 during a typical weekday (Thursday) and with selected locations during the weekend (Saturday). Weekend data collection were performed to measure the impact of the casino's entertainment attraction. **Figure 3-4** shows the count locations and traffic counts.

In total, ten intersection turning movement counts were collected for both the AM/PM peak periods and during the PM period for weekend traffic. In addition, 24-hour daily traffic counts were performed at fifteen locations. Vehicle classification distribution and average travel speeds were collected. Seasonal increase/decrease in traffic was taken into account with urban seasonal adjustment factors provided by ADOT. The urban seasonal adjustment was used because the Ak-Chin Community is within the vicinity of the City of Maricopa. A summary of the daily weekday traffic volumes is shown in **Table 3-8** and weekend traffic volumes are shown in **Table 3-9**. The collected intersection turning movement data is illustrated in **Figure 3-5**.

Table 3-8: Existing Weekday Daily Traffic Volumes Summary

Location	Date Collected	Day Collected	Collected Volumes	Adjustment Factor (Jan, Thursday)	AADT	Truck %
Ralston Road, North of Farrell Road	21-Jan-16	Thursday	1,846	0.971	1,792	40.1
Ralston Road, South of Farrell Road	21-Jan-16	Thursday	1,510	0.971	1,466	10.7
Farrell Road, East of Ralston Road	21-Jan-16	Thursday	1,424	0.971	1,383	13.3
Ralph Street, West of Hohokam Street	21-Jan-16	Thursday	206	0.971	200	15.6
Peters and Nall Road West of Barley Road	21-Jan-16	Thursday	821	0.971	797	27.6
White and Parker Road, South of Peters and Nall Road	21-Jan-16	Thursday	1,537	0.971	1,492	29.2
Anderson Road, South of Maricopa - Casa Grande Highway	21-Jan-16	Thursday	963	0.971	935	44.8
Russell Road, South of Bud Road	21-Jan-16	Thursday	549	0.971	533	18.7
SR-347, South of Peters and Nall Road	25-Feb-16	Thursday	5,956	0.911	5,425	18.1
SR 347, North of Farrell Road*	2015	-	13,650	-	13,650	6.3
SR 347, South of Casino Driveway	25-Feb-16	Thursday	6,690	0.911	6,094	13.3
Farrell Road, East of Cemetery Road	25-Feb-16	Thursday	2,426	0.911	2,210	16.4
Farrell Road, West of SR 347	25-Feb-16	Thursday	3,046	0.911	2,775	11.8

*Note: SR 347 traffic count north of Farrell Road is from Arizona Department of Transportation permanent traffic count station.



Peak-Hour Turning Movement Counts

Figure 3-5: Intersection Turning Movement Volumes

Table 3-9: Existing Weekend Daily Traffic Volume Summary

Location	Date Collected	Day Collected	Collected Volumes	Adjustment Factor (Jan, Thursday)	AADT	Truck %
Farrell Road, East of Cemetery Road	27-Feb-16	Saturday	1,570	1.051	1,650	10.2
Ralph Street, West of Hohokam Street	23-Jan-16	Saturday	134	1.151	154	7.4
Peters and Nall Road, West of Barley Road	23-Jan-16	Saturday	658	1.151	757	29.1
SR 347, South of Peters and Nall Road	27-Feb-16	Saturday	5,953	1.051	6,257	16.5
SR 347, South of Casino Driveway	27-Feb-16	Saturday	6,395	1.051	6,721	9.7
White and Parker Road, South of Peters and Nall Road	23-Jan-16	Saturday	729	1.151	840	21.9
Farrell Road, West of SR-347	27-Feb-16	Saturday	2,435	1.051	2,560	6.9

Source: Kimley-Horn and Field Data Services

Based on the traffic data collected, the following was observed:

- The signalized intersection of Farrell Road / SR 347 experienced the highest intersection traffic volumes in the Ak-Chin Community where traffic volumes were collected.
- Weekend traffic volumes show that SR 347 experienced higher PM peak hour traffic volumes compared to the weekday. This occurs at intersections in the vicinity of the Harrah's Ak-Chin Casino Entrance.
- Vehicle classification data shows that Anderson Road and Ralston Road can have up to 40 percent of trucks.
- A majority of the traffic heading towards the Harrah's Ak-Chin Casino comes from north of the Community.

License Plate Study of Pass-through Traffic on Farrell Road

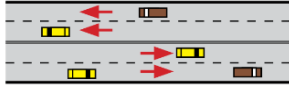
A license plate study was conducted on May 4, 2016 on Farrell Road during the a.m. and p.m. peak periods. The study was conducted to determine vehicles that were "passing through" on Farrell Road en route to another destination. License plate data (the last 4 digits of the license plate) were collected on Farrell Road, east of Ralston Road, and on Farrell Road, west of SR 347, and matching license plate numbers were identified.

During the a.m. peak period, 7.44 percent of traffic (16 vehicles) was pass-through traffic in the westbound direction and 9.27 percent of traffic (14 vehicles) was pass-through traffic in the eastbound direction. During the p.m. peak period 5.97 percent of traffic (8 vehicles) was pass-through traffic in the westbound direction, and 4.94 percent of traffic (13 vehicles) comprised pass-through traffic in the eastbound direction.

Current Levels of Service

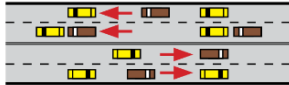
Level of Service – Highway

A



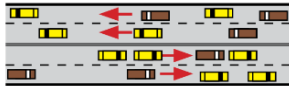
Free flow, low traffic density.

B



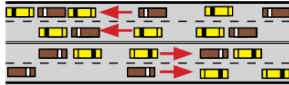
Minimum delay, stable traffic flow.

C



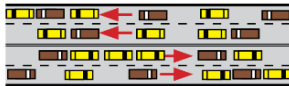
Stable condition, movements somewhat restricted due to higher volumes, but not objectionable for motorists.

D



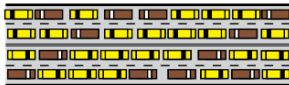
Movements more restricted, queues and delays may occur during short peaks, but lower demands occur often enough to permit clearing, preventing backups.

E



Actual capacity of the roadway involves delay to all motorists due to congestion.

F



Forced flow with demand volumes greater than capacity resulting in congestion.

Current traffic congestion levels were analyzed using Level of Service (LOS), a measure which rates the performance of the roadway network in terms of the degree of congestion, using the Letters A through F with A being the best, and F being the worst (as depicted at left). LOS is defined by the Highway Capacity Manual (HCM) and is described below:

- **LOS A:** Free flow. Traffic flows freely at the posted speed limit. Incidents or vehicle breakdowns have minimal impact on others. LOS A generally occurs late at night in urban areas and frequently in rural areas.
- **LOS B:** Reasonably free flow. LOS A speeds are maintained, maneuverability within the traffic stream is slightly restricted. Motorists have a high level of physical and psychological comfort.
- **LOS C:** Stable flow, at or near free flow. Motorists' ability to maneuver between lanes is noticeably restricted and require more driver awareness. Roads remain uncongested but are approaching capacity. Minor incidents begin to lead to traffic delays behind the incident. This is the target LOS for most rural highways.
- **LOS D:** Approaching unstable flow. Speeds are decreased and motorist freedom to maneuver is more limited. Examples are a busy shopping corridor in the middle of a weekday, or a major arterial during commuting hours. This is the target LOS for most urban streets, as attaining LOS C would be cost-prohibitive.
- **LOS E:** Unstable flow, operating at capacity. Flow becomes irregular and speed varies rapidly as traffic's ability to maneuver diminishes. Vehicles rarely reach the speed limit. Any incident or disruption to traffic flow, such as crashes or merging ramp traffic or lane changes, leads to congestion.
- **LOS F:** Every vehicle moves in lockstep with the vehicle in front of it, with frequent slowing required. Travel time cannot be predicted, with generally more demand than capacity. This represents a traffic jam.

A capacity analysis was performed on the key intersections utilizing the turning movement count data collected for the AM/PM peak periods. Synchro 9 was used to evaluate the LOS based on the existing lane approach configurations and traffic control. Based on the results, summarized in **Table 3-10** for weekday conditions and **Table 3-11** for weekend conditions, all key intersection approaches and overall intersection performance result in a satisfactory LOS A-C for existing conditions.

Source: Colorado Department of Transportation, FHWA

Table 3-10: Weekday Intersection LOS

	EB			WB			NB			SB			Traffic Control
	L	T	R	L	T	R	L	T	R	L	T	R	
Farrell Road & Ralston Road													
Approach Delay (sec)	2 (1.6)			1.3 (2.3)			9.7 (9.8)			9.7 (10.1)			Unsignalized
Approach LOS	-			-			A (A)			A (B)			
Intersection Delay (sec)	6.6 (7.1)												
Intersection LOS	A (A)												
SR 347 & Juan Street													
Approach Delay (sec)	11.8 (17)			-			0.1 (0.1)			0.0 (0.0)			Unsignalized
Approach LOS	B (C)			-			-			-			
Intersection Delay (sec)	0.4 (0.6)												
Intersection LOS	A (A)												
Peters & Nall Road & White & Parker Road													
Approach Delay (sec)	9.6 (9.2)			9.9 (9.7)			1.8 (0.5)			0.0 (0.3)			Unsignalized
Approach LOS	A (A)			A (A)			-			-			
Intersection Delay (sec)	2.4 (2.4)												
Intersection LOS	A (A)												
Maricopa Casa-Grand Highway & Anderson Road													
Approach Delay (sec)	0.2 (0.1)			0.1 (0.3)			12.5 (14.2)			9.6 (10)			Unsignalized
Approach LOS	-			-			B (B)			A (B)			
Intersection Delay (sec)	1.5 (1.3)												
Intersection LOS	A (A)												
Maricopa Casa-Grande Highway & Russell Road													
Approach Delay (sec)	0.1 (0.1)			0.0 (0.0)			-			11.6 (12.1)			Unsignalized
Approach LOS	-			-			-			B (B)			
Intersection Delay (sec)	0.4 (0.2)												
Intersection LOS	A (A)												
SR 347 & Peters and Nall Road													
Approach Delay (sec)	12.3 (12.9)			10.5 (10.2)			0.0 (0.0)			0.9 (0.4)			Unsignalized
Approach LOS	B (B)			B (B)			-			-			
Intersection Delay (sec)	1.2 (1.3)												
Intersection LOS	A (A)												
Maricopa-Casa Grande highway & Murphy Road													
Approach Delay (sec)													Unsignalized
Approach LOS													
Intersection Delay (sec)													
Intersection LOS													
SR 347 & Farrell Road													
Approach Delay (sec)	7.3 (7.7)			6.6 (5.8)			6.7 (7.7)			7.3 (8.5)			Signalized
Approach LOS	A (A)			A (A)			A (A)			A (A)			
Intersection Delay (sec)	7.0 (7.8)												
Intersection LOS	A (A)												
Antone Avenue & Juan Street													
Approach Delay (sec)	0.0 (0.0)			2.1 (2.7)			8.4 (8.5)			-			Unsignalized
Approach LOS	-			-			A (A)			-			
Intersection Delay (sec)	1.4 (2.1)												
Intersection LOS	A (A)												
SR 347 & Harrah's Entrance													
Approach Delay (sec)	6.9 (9.5)			8.0 (8.2)			-			7.7 (6.1)			Signalized
Approach LOS	A (A)			A (A)			-			A (A)			
Intersection Delay (sec)	7.8 (7.7)												
Intersection LOS	A (A)												

Table 3-11: Weekend Intersection LOS

Intersections	EB			WB			NB			SB			Traffic Control
	L	T	R	L	T	R	L	T	R	L	T	R	
SR 347 & Juan Street													
Approach Delay (sec)	16.6			-			0.0			0.0			Unsignalized
Approach LOS	C			-			-			-			
Intersection Delay (sec)	0.3												
Intersection LOS	A												
SR 347 & Harrah's Entrance													
Approach Delay (sec)	9.3			-			8.1			8.6			Signalized
Approach LOS	A			-			A			A			
Intersection Delay (sec)	8.6												
Intersection LOS	A												
SR 347 & Peters and Nail Road													
Approach Delay (sec)	13.3			11.5			0.0			0.7			Unsignalized
Approach LOS	B			B			-			-			
Intersection Delay (sec)	1.0												
Intersection LOS	A												
Peters and Nail Road & White and Parker Road													
Approach Delay (sec)	9.0			9.5			1.4			0.0			Unsignalized
Approach LOS	A			A			-			-			
Intersection Delay (sec)	3.7												
Intersection LOS	A												
Antone Avenue & Juan Street													
Approach Delay (sec)	0.0			1.0			8.5			-			Unsignalized
Approach LOS	-			-			A			-			
Intersection Delay (sec)	1.3												
Intersection LOS	A												

Future Traffic Volumes

Forecasted traffic volumes for the years 2020, 2030, and 2040 were derived from the Maricopa Association of Governments (MAG) travel demand model. Traffic analysis zones (TAZs) are the basic geographic unit for inventorying demographic data and land use within a study area, and the Ak-Chin Indian Community is divided into five TAZs for the purpose of travel demand modeling. A summary of the socioeconomic data assumed for the Ak-Chin Indian Community for the forecast years is shown in **Table 3-12**. The forecast travel demand data, shown in **Figure 3-13**, appeared reasonable for the level of development planned in the Community.

It should be noted that uncertain developments under consideration like I-11, East-West Corridor, and expanded Union Pacific Railroad facilities could have an impact on future traffic volumes. Coordination with regional planning studies is discussed in more detail in **Chapter 11**.

Table 3-12: Socioeconomic Data Used in the MAG Travel Demand Model

2020			2030			2040		
Population	Employment	Dwelling Units	Population	Employment	Dwelling Units	Population	Employment	Dwelling Units
1019	916	485	1087	1159	598	1172	2069	668

Table 3-13: Forecasted Traffic Volumes

Location	Existing AADT	2020	2030	2040
Ralston Road, North of Farrell Road	1,792	1,827	1,915	2,005
Ralston Road, South of Farrell Road	1,466	1,505	2,163	3,460
Farrell Road, East of Ralston Road	1383	2,998	3,489	6,451
Peters and Nall Road West of Barley Road	797	822	2,216	4,359
White and Parker Road, South of Peters and Nall Road	1,492	2,402	4,644	7,434
Anderson Road, South of Maricopa-Casa Grande Highway	935	1,208	2,459	6,879
Russell Road, South of Bud Road	533	734	1,071	5,031
SR 347, North of Farrell Road	13,650	12,654	16,503	28,390
Farrell Road, East of Cemetery	2,210	3,398	4,403	6,748
Farrell Road, West of SR 347	2,775	3,398	4,403	6,748
SR 347, Casino Entrance	6,094	7,988	10,805	22,394
SR 347, South of Peters and Nall Road	5,425	7,966	11,708	24,649

Future Levels of Service

The future LOS resulting from the forecasted traffic assignment was calculated as a volume to capacity ratio (v/c). The segment's capacity is derived from the MAG travel demand model's link calculated capacity.

Figures 3-6, 3-7, and 3-8 illustrate the LOS for years 2020, 2030 and 2040 respectively. Within the Ak-Chin Community, roadway segments are anticipated to perform at a LOS A-B. Highway segments such as SR 347, just north of the Community, are anticipated to operate at LOS C in 2040.

Impact of Ak-Chin Parkway on Traffic Flows in the Community

An analysis was performed that includes the traffic impact of the Ak-Chin Parkway. The Ak-Chin Parkway was coded at complete build-out conditions into the 2040 MAG Travel Demand Model. Based on the MAG model's TAZ structure, interim extensions of the parkway were not coded into the 2020 and 2030 models as the results would be considered unreliable. The resulting 2040 assignment output shows that the parkway would attract a significant amount of traffic from Farrell Road. Farrell Road may experience a 53.8% decrease in traffic volumes. The Ak-Chin Parkway would attract 48% more traffic, having an approximate ADT of 7,300 vehicles per day in 2040 conditions. Based on the traffic volumes and capacity associated with the parkway facility, the facility would perform well, at LOS C or better.

A preliminary traffic signal warrant analysis from the Manual on Uniform Traffic Control Devices (MUTCD) shows that a traffic signal may be required at the Ak-Chin Parkway terminus at Ralston Road. The signal would interrupt north/south traffic flows on Ralston Road. It is recommended to perform an in-depth evaluation of the intersection as the full extension of the Parkway is designed.

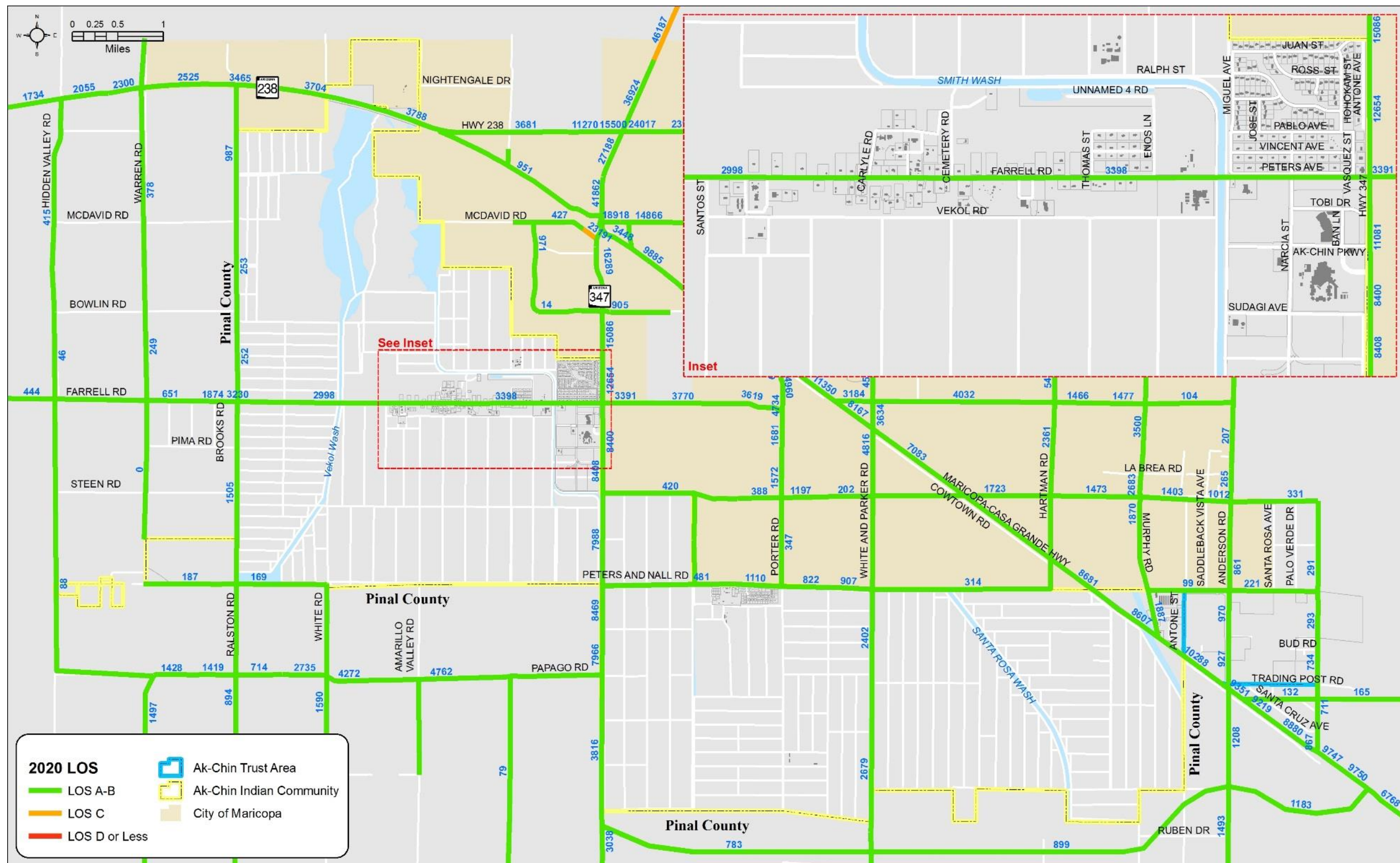


Figure 3-6: 2020 Average Daily Traffic Volumes and Levels of Service

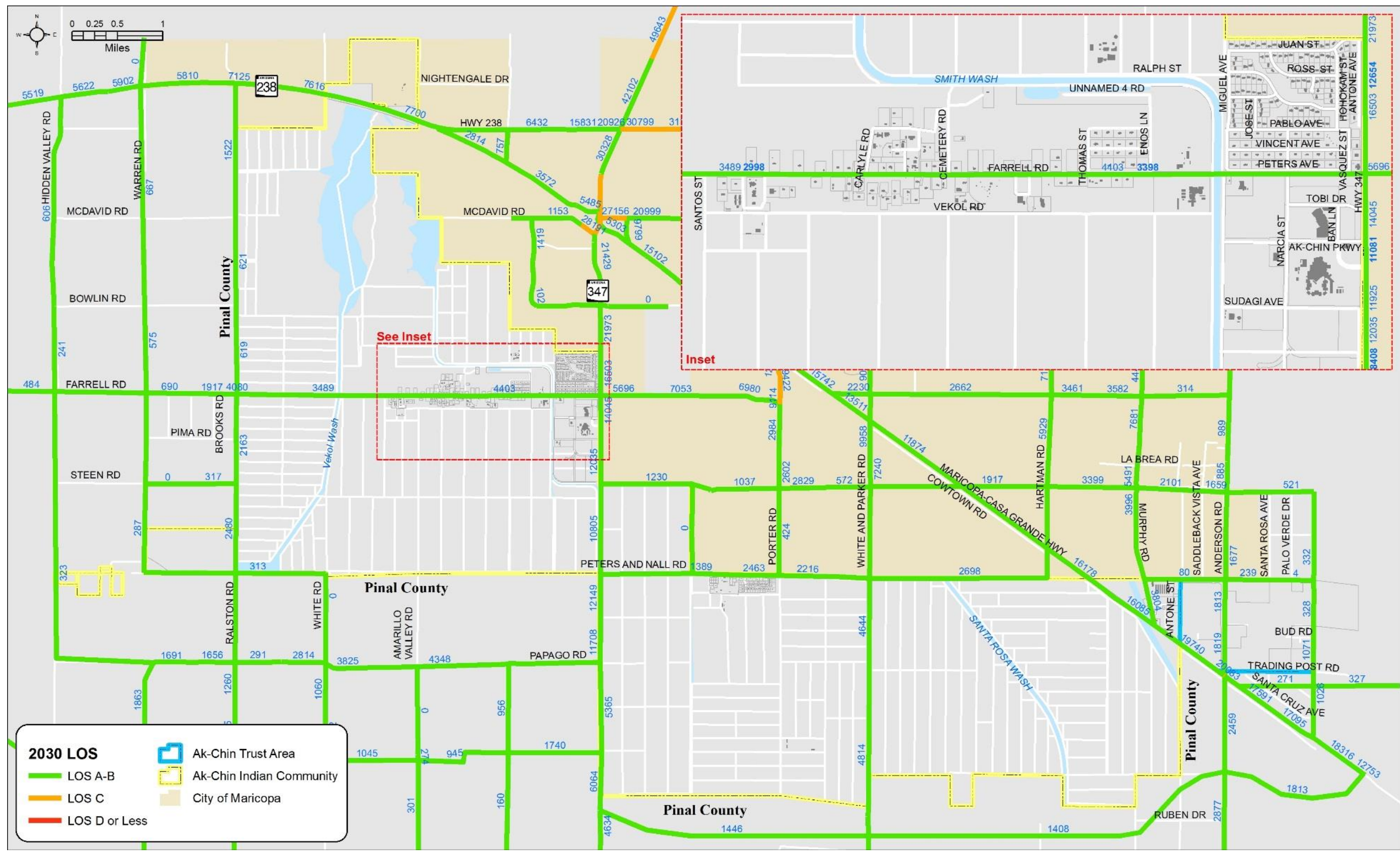


Figure 3-7: 2030 Traffic Volumes and Levels of Service

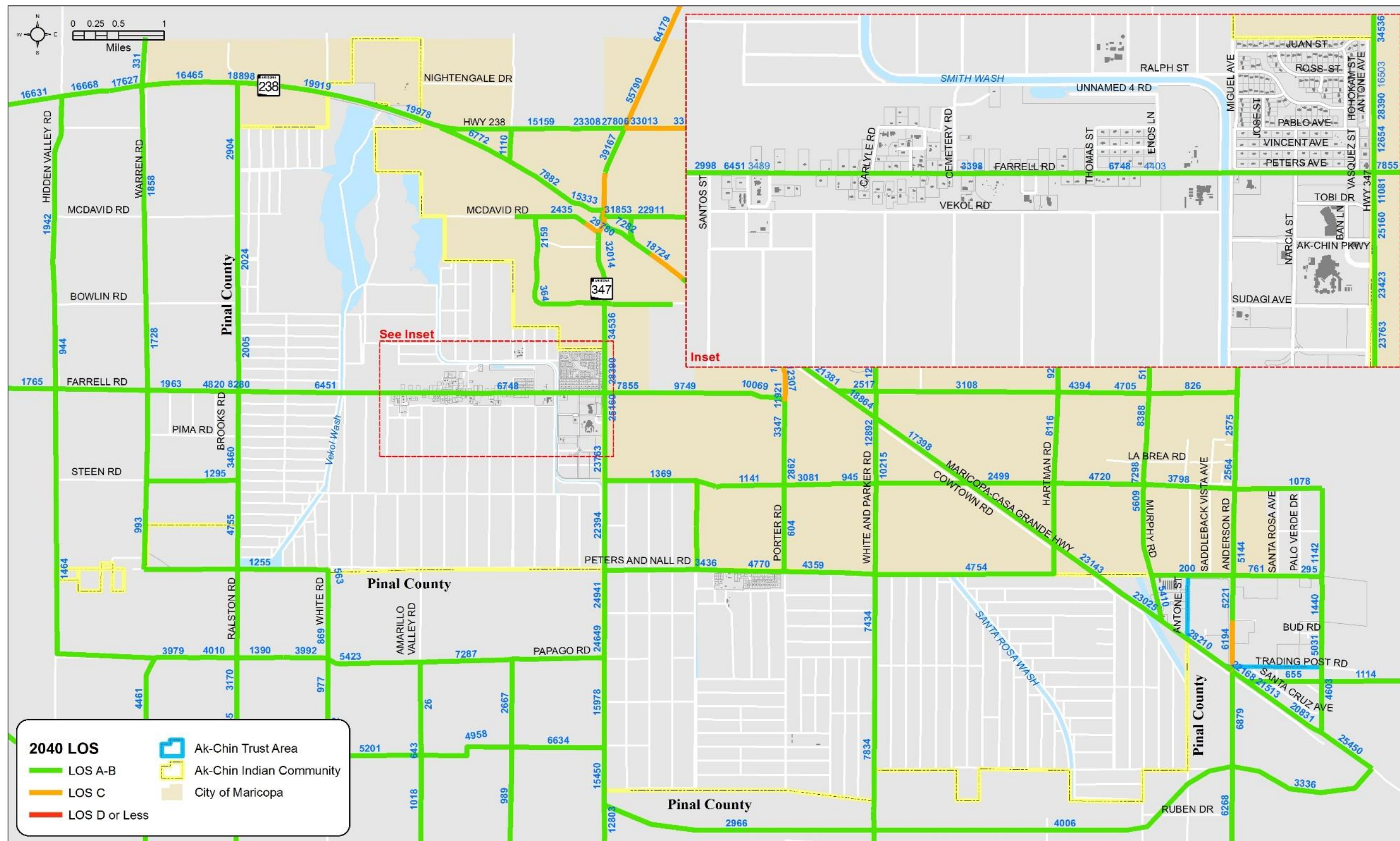


Figure 3-8: 2040 Traffic Volumes and Levels of Service

3.6. SAFETY ISSUES AND MOTOR VEHICLE CRASHES

Crash Data and Trends – Ak-Chin Police Department Data

Crash data compiled by the Ak-Chin Indian Community Police Department was reviewed to determine whether there are any conditions within the Community road system that may be corrected by a transportation improvement project. **Table 3-14** summarizes key characteristics of crashes reported by the Community Police Department for the years 2005-2015. **Figure 3-9** shows the number of crashes by year. Crashes have increased from the period 2012 onwards. Almost half of the total crashes occur at the Harrah's Ak-Chin Casino and Resort and are minor crashes. Many of the crashes were reported to be due to "Driver Inattention."

Table 3-15 shows the location of intersection crashes over the 10-year period. The most common locations of intersection crashes occurred at the Maricopa-Casa Grande Highway and Murphy Road, and on SR 347 at Farrell Road and at the Harrah's Ak-Chin Casino entrance.

Table 3-14: Crash Characteristics: 2005-2015

Year	Number of Crashes
2005	42
2006	35
2007	27
2008	24
2009	29
2010	29
2011	23
2012	55
2013	47
2014	54
2015	52
Total	417
Type of Crash	
Non-Injury	275
Injury	51
Property Damage	39
Hit and Run	42
Rollover	0
Hit Pedestrian	1
Fatality	4
Total*	412
Cause of Crash	
Animal Collision	1
Backing	2
Driver Inattention	233
DUI	14
Excessive speed	17

Failure to Yield the Right-of-way	16
Failure to stop for signal	3
Rear end	1
Reckless Driving	4
Sideswipe/ Backing	1
Unknown or not listed	125
Total	417
Location of crashes on road segments (does not include intersection crashes)	
Harrah's Ak-Chin Casino and Resort	200
Farrell Road	49
Peters and Nall Road	16
SR 347	14
UltraStar	8
Ralston Road	5
Maricopa-Casa Grande Highway	4
SR 238	2
Intersections	54
Other Locations	65

*Note: Not all crashes had a type of crash listed.

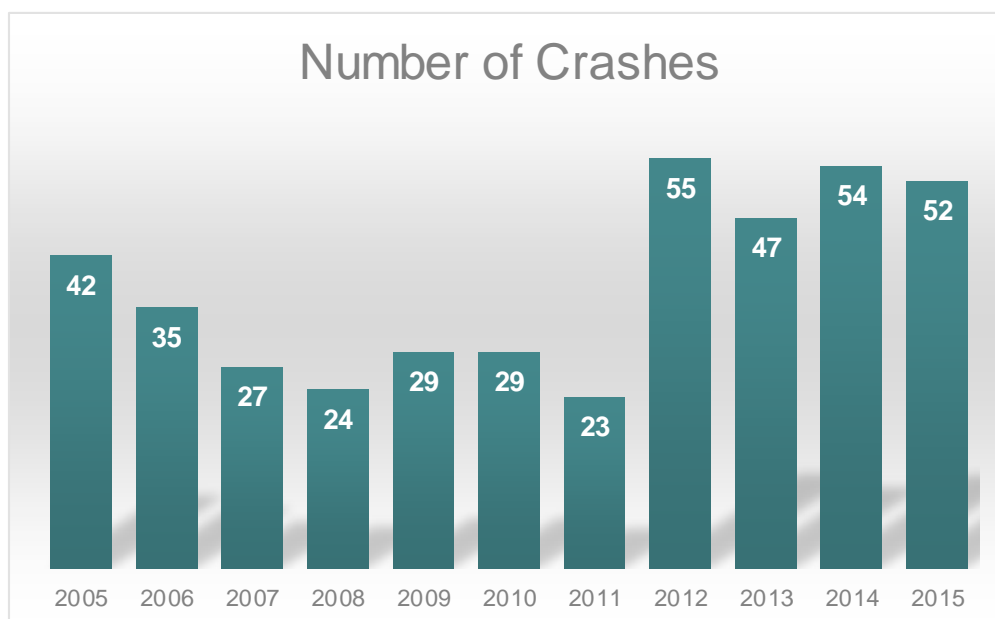


Figure 3-9: Number of Crashes per Year

Table 3-15: Intersection Crashes, 2005-2015

Offense	Date of Offense	Location of Offense
Failure to Control a Vehicle to Avoid Collision/No Insurance	12/21/2014	Porter Rd/Teel Rd
DUI/Criminal Damage/Escape/Public Intoxication/Endangerment	1/1/2010	Beehive Rd/Cotton St
None noted	10/27/2009	Enos Rd/Farrell Rd
Failing to Maintain Speed/No Driver's License/Failing to Yield	7/31/2005	Farrell Rd/Enos St
Following to Close	5/19/2013	Farrell Rd/Narcia Rd
None noted	4/5/2013	Farrell Rd/Ralston Rd
None noted	3/10/2009	Hartman Rd/Peters and Nall Rd
None noted	12/28/2012	Jose Rd/Milton St
Stop Sign Violation	11/20/2013	MCG Hwy/Murphy Rd
Following to Close/Failure to Provide Insurance	9/9/2014	MCG Hwy/Murphy Rd
Failure to Control Vehicle to Avoid Collision	2/6/2014	MCG Hwy/Murphy Rd
Speeding/Failure to Avoid a Collision	4/9/2010	MCG Hwy/Murphy Rd
None noted	11/11/2009	MCG Hwy/Murphy Rd
Failure to Control an Accident	7/19/2005	MCG Hwy/Murphy Rd
None noted	11/28/2005	MCG Hwy/Murphy Rd
None noted	11/13/2008	Miguel St/Peters Ave
None noted	9/2/2007	Miguel St/Peters Rd
None noted	1/8/2010	Peters and Nall Rd/Porter Rd
None noted	4/4/2012	Peters and Nall Rd/White and Parker Rd
None noted	7/14/2014	Porter Rd/Farrell Rd
None noted	9/20/2013	Ralston Rd/Peters and Nall Rd
None noted	11/17/2006	Smith Enke Rd / Porter Rd
None noted	11/10/2012	SR 347/Papago Rd
Failure to Yield Right-of-Way	6/25/2013	SR 347/Peters and Nall Rd
Failure to Control Vehicle to Avoid Collision/No Mandatory Insurance/No Driver's License/Display Mandatory Insurance Suspended License Plate	7/26/2014	SR 347/Farrell Rd
Failure to Yield at an Intersection	4/23/2012	SR-347/Farrell Rd
Failure to Yield	4/9/2010	SR-347/Farrell Rd
Speeding/Failure to Control to Avoid a Collision	7/29/2011	SR-347/Farrell Rd
Failure to Avoid a Collision	6/19/2009	SR 347/Harrah's Ak-Chin Casino
None noted	3/3/2010	SR 347/Harrah's Ak-Chin Casino
Failure to Stop	2/19/2010	SR-347/Harrah's Ak-Chin Casino
None noted	6/19/2008	SR-347/Harrah's Ak-Chin Casino

Offense	Date of Offense	Location of Offense
Failure to Avoid a Collision	3/10/2009	SR-347/Maricopa Rd
no details	No date	SR-347/Maricopa Rd
Failure to Control Vehicle to Avoid Collision	11/15/2013	SR-347/Peters and Nall Rd
None noted	2/22/2010	White and Parker Rd/MCG Hwy
Criminal Trespassing/Failure to Control Speed to Avoid a Collision	4/3/2010	White and Parker Rd/Peters and Nall Rd
None noted	11/4/2012	White and Parker Rd/Teel Rd

Source: Ak-Chin Police Department

Fatal crashes were recorded at the following locations over the ten-year period:

- Airport (2/23/2014)
- Ralston/Peters and Nall (9/20/2013)
- SR 347 (7/2/2011)
- 48251 W. Farrell Road (10/4/2008)

Road Safety Assessment and Status of Recommendations

A Road Safety Assessment was conducted in 2011 for three areas:

1. SR 347 from Juan Street to Harrah's Ak-Chin Casino Entrance;
2. Maricopa-Casa Grande Highway from Peters and Nall Road to Antone Road; and
3. Peters and Nall Road, from SR 347 to Smith Road.

The request related to growth of the surrounding area and increased traffic volumes on SR 347 and Maricopa-Casa Grande Highway, flooding on the Maricopa-Casa Grande Highway, and pavement conditions on Peters and Nall Road.

Table 3-16 summarizes potential safety issues, recommended safety countermeasures and the status of implementing the countermeasures. Many of the recommendations have been addressed, or are underway.

Safety issues on Peters and Nall Road have been addressed through the reconstruction of Peters and Nall Road between SR 347 and White and Parker Road in 2015.

Flooding at the Santa Cruz Wash and the dip section issues were addressed by the Santa Cruz Wash Crossing Improvement project that was completed in 2016. The purpose of this project was to replace the existing paved dip section along the highway with an all-weather bridged crossing.

Safety issues with respect to the traffic signal at the SR 347/Harrah's Ak-Chin Casino entrance will be addressed through planned improvements that will shift the traffic signal one-quarter mile further north.

Table 3-16: Status of Recommendations from 2011 Road Safety Assessment

Potential Safety Issue	Description	Countermeasures for Consideration	Current (2016) Status
STATE ROUTE 347			
Signing	Sign inconsistencies on SR 347, (Stop sign heights, use of Wrong Way/Do Not Enter/One Way signs, and use of a One-Direction Large Arrow sign on far side of Papago Road intersection).	Install signing consistent with ADOT standards and MUTCD guidelines. Fix/replace One-Way sign at Casino Entrance. Remove One-Direction Large Arrow sign at SR 347/Papago Road intersection	A review of Google Earth mapping indicates the One-Direction Arrow sign is still in place at the SR 347/Papago Road intersection.
	A One Way sign at the Casino Entrance intersection is bent.	Replace sign	This sign was not observed.
	The Stop sign on eastbound Farrell Road approach was not as bright and visible as the Reverse Curve warning sign on far side of intersection. This Reverse Curve sign is not the appropriate sign to use for the road alignment change.	Upgrade Stop signs installed four or more years ago to ADOT's current sign sheeting specifications. Replace Reverse Curve sign on Farrell Road just east of SR 347 with delineators.	Reverse curve sign appears to be in place. The SR 347/ Farrell Road intersection is signalized.
	The SR 347 approaches to the intersections with Juan Street and Peters and Nall Road do not have advance street name signs, and the advance street name signs for the Papago Road intersection have small lettering and are too close to the intersection.	Install advance street name signs at the SR 347 intersections with Juan Street, Peters and Nall Road, and Papago Road.	Advance street name signs are now installed for Juan Street, Peters and Nall Road (sign reads "Ak-Chin Government Center 1.5 miles" with an arrow pointing to Peters and Nall Road). The advance street name signs at Papago Road are still too close to the intersection (at the beginning of the turn lanes in both directions).
Casino Entrance	Non-breakaway street light poles are located within the clear zone along SR 347 at the Casino.	In the short term, delineate non-breakaway light poles with object markers. Long term, the need for these street lights should be evaluated, with consideration given to removing the poles, or replacing the poles with breakaway poles and grading around the bases.	This traffic signal is scheduled to be relocated one-quarter mile north of its present location.

Potential Safety Issue	Description	Countermeasures for Consideration	Current (2016) Status
	Some signal backplates have been bent by oversize loads	Check signal mounting heights and rectify, as necessary. Consideration could be given to rotating the signal heads to place the plumbizer between the bottom lens and center lens.	This traffic signal is scheduled to be relocated one-quarter mile north of its present location.
	The overhead left-turn signal has a "Left Turn Signal" sign, while the far side left-turn signal has a "Left On Green Arrow Only" sign.	Replace "Left Turn Signal" sign with a "Left on Green Arrow Only" sign.	This traffic signal is scheduled to be relocated one-quarter mile north of its present location.
	There is an exposed cable between the traffic signal pole and pullbox on the southwest corner.	Address the exposed cable between the signal pole and pullbox on southwest corner.	This traffic signal is scheduled to be relocated one-quarter mile north of its present location.
	There is also an exposed traffic signal loop detector on the Casino entrance approach to SR 347.	Address exposed signal loop detector on Casino entrance to SR 347.	This traffic signal is scheduled to be relocated one-quarter mile north of its present location.
	There were metal tubes/stakes, used for holding banners/flags that pose a potential pedestrian tripping hazard.	Remove or relocate metal tubes/stakes used for holding banners.	Not determined if these are still in place.
Median at Fire Station	Approximately 130 feet of raised median has been removed along SR 347 near the Farrell Road intersection to accommodate emergency vehicles entering and exiting the fire station on the northwest corner of the intersection.	With the relocation of the fire station, the raised median on SR 347 should be reconstructed and extended to its original location.	The median has been extended.
Pedestrian / Bicyclist Accommodations	There are no sidewalks along SR 347 south of Cowpath Road (milepost 173). The RSA team observed school children walking along the gravel roadside slope and bicyclists using SR 347.	A multi-use path could be constructed along SR 347 to better accommodate pedestrians and recreational bicyclists.	In process-there is a planned pathway along Antone Avenue (parallel to SR 347), between Juan Street and Farrell Road. In early 2016 a new sidewalk was constructed on SR 347 between Bowlin Road and Juan Street.

Potential Safety Issue	Description	Countermeasures for Consideration	Current (2016) Status
Juan Street Intersection	The RSA team observed numerous vehicles making U-turns from the southbound SR 347 high-speed through lane at the Juan Street intersection.	Could install “No U-turn” sign on the SR 347 southbound approach to Juan Street.	A “No U-turn” sign has been installed and a review of turning movement counts during peak periods did not show U-turn activity.
	The stop bar on Juan Street is faded and is located 23 feet from the edge of the SR 347, which impacts intersection crossing distance and sight distance.	Relocate the Juan Street stop bar closer to the SR 347 edge line and extend the Juan Street centerline markings to this relocated stop bar location.	A review of aerial mapping indicates the stop bar could be refreshed and relocated further.
	Stop bars at other cross street intersections are also faded.	Refresh stop bars at other SR 347 intersections (Farrell Road and Papago Road).	Stop bars and striping appear to be refreshed at these locations.
Dust-Related Crashes	Three of the crash reports mentioned poor visibility due to dust from farming activities.	Conduct an educational campaign aimed at local farmers, requesting that they curtail farming activities during high winds.	Based on discussion with the Ak-Chin Safety Director, there is an extensive watering program to keep dust down and dust does not appear to be an issue.
MARICOPA-CASA GRANDE HIGHWAY			
Flooding at Santa Cruz Wash	Several crashes involved vehicles entering the flooded Santa Cruz Wash crossing, just west of Murphy Road.	Short term, install a Depth Gauge sign with a Road May Flood sign. Long term, construct a bridge or culvert to address the flooding concern at this location.	Construction work was completed at this location, in conjunction with the Santa Cruz Wash improvement project.
Pavement Markings	The existing pavement markings are not very bright at night, especially in comparison to the section within the City of Maricopa’s jurisdiction, which also has RPMs.	Upgrade pavement markings to thermoplastic, and consider installing RPMs along the centerline.	Construction work was completed at this location, in conjunction with the Santa Cruz Wash improvement project.
Dips	Dips in the road can “hide” vehicles for a split second.	Install Use Headlights Day and Night signs along Maricopa-Casa Grande Highway.	The dip section near Murphy Road is being addressed through the Santa Cruz Wash improvement project.
Murphy Road Intersection	The Murphy Road approach is extremely wide, which can create vehicle positioning concerns for drivers. The skewed intersection impedes turning maneuvers of large vehicles.	Relocate the centerline on the Murphy Road approach closer to the west edge of pavement to provide additional turning space for large	Construction work was completed at this location, in conjunction with the Santa Cruz Wash improvement project.

Potential Safety Issue	Description	Countermeasures for Consideration	Current (2016) Status
		vehicles turning from Maricopa-Casa Grande Highway.	
	The horizontal curve on Murphy Road just before the Maricopa-Casa Grande Highway intersection is not delineated and is difficult to see at night.	Extend the centerline through the horizontal curve on Murphy Road to provide additional guidance.	Construction work was completed at this location, in conjunction with the Santa Cruz Wash improvement project.
	Several sight distance restrictions occur at or near the Maricopa-Casa Grande Highway/Murphy Road intersection.	Install a destination sign on the far side of the intersection.	Construction work was completed at this location, in conjunction with the Santa Cruz Wash improvement project.
	A tree on the northeast corner of the intersection restricts sight distance. A tree obscures the Stop Ahead sign on. A dirt pile on the northwest corner of the intersection restricts sight distance.	Trim and maintain, or remove, the tree on the northeast corner of the intersection. Trim and maintain, or remove, the tree obscuring the Stop Ahead sign on Murphy Road. Remove the dirt pile on the northwest corner of the intersection.	These are ongoing maintenance activities.
PETERS AND NALL ROAD			
Pavement Condition	The rough condition of pavement, including the hump near the SR 347 intersection, creates driver control issues and increases emergency response time.	Short term, spot grind the hump near SR347 or install Bump signs.	Peters and Nall Road was reconstructed in 2015
	The pavement edge drop-offs can also impact driver control when a vehicle inadvertently leaves the pavement.	Request the millings generated from the SR 347 pavement preservation project to build up shoulders and address drop-offs.	Peters and Nall Road was reconstructed in 2015
Pavement Markings	There are no visible centerline or edge line pavement markings.	Install pavement markings (if possible, given the current pavement condition) and/or RPMs.	Peters and Nall Road was reconstructed in 2015
Smith Road Drainage Structure	A culvert headwall is six feet from the edge of pavement, where Peters and Nall Road crosses over the Smith Road alignment.	Short term, object markers should be installed at the ends of the culvert headwalls. If clogging of the culvert is an issue, conduct a drainage analysis to evaluate potential long term drainage improvements.	Peters and Nall Road was reconstructed in 2015

Potential Safety Issue	Description	Countermeasures for Consideration	Current (2016) Status
Stop Ahead Sign	The Stop Ahead sign on the approach to SR 347 has been knocked down.	Re-install the Stop Ahead sign on the approach to SR 347.	Peters and Nall Road was reconstructed in 2015
GENERAL ISSUES			
Crash Data	Tribal data indicates that the actual number of crashes is three times higher than ADOT's data shows. Crash information is used for determining locations of crash concerns, identifying appropriate countermeasures to mitigate these crashes, and for securing funding for implementing countermeasures.	Provide crash reports and crash data for all crashes to ADOT.	Consider using a crash data system compatible with the ADOT system. ADOT is trying to encourage tribes on a statewide basis to use the TraCS crash data program, that is compatible with the ADOT crash database. An advantage of using this system is that when applying for Highway Safety Improvement Program funds, tribes can more easily access the data and query the forms.

Other Safety Considerations

Measures to Increase Seatbelt Usage

Discussions with stakeholders (See Chapter 9) indicated that seatbelt usage within the Community is a concern. The Community has been proactive in addressing this concern, and is currently in the process of developing signage to remind residents and visitors to wear seatbelts. The Community is also purchasing highly visible seat belt covers for use in Community vehicles. The seat belt covers will show, at a glance, whether an employee driving a Community vehicle is wearing a seatbelt.

Seatbelt laws are divided into two categories: primary and secondary. Primary seatbelt laws allow law enforcement officials to ticket a driver or passenger for not wearing a seatbelt, without any other traffic offense taking place. Secondary seatbelt laws state that law enforcement officers may issue a ticket for not wearing a seatbelt only when there is another citable traffic infraction. To date, five Arizona tribes have enacted a primary seat belt law (Navajo, Tohono O'odham, Salt River, Fort McDowell, San Carlos) and one tribe is on the verge of implementing it. (Hopi).

Speed Control on Farrell Road

Farrell Road is an important Community street, and the Community is committed to providing safe access for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities. Speed control is an important consideration in providing a safer travel environment for all road users. The speed limit on Farrell Road is 25 mph through the developed area of the Community, and 35 mph further west (near Ralston Road). Speed data collected on Farrell Road east of Ralston Road in February 2016, within the 35 miles per hour segment indicated that the mean speed was 37 miles per hour. The speed at which 85% of all vehicles were observed to travel 43 miles per hour.

Discussion with Community stakeholders have indicated support for installing speed monitors on Farrell Road. The monitors will let people know their travel speed and serve as a reminder to slow down. Increased enforcement, or patrols, is another measure to reduce speeding on Farrell Road.

Safety Measures Recommended in the Central Arizona Governments Strategic Highway Safety Plan (2015)

This study developed safety strategies for six emphasis areas based on a review of crash data in the Central Arizona Governments regions for the period 2009-2013. These emphasis areas are also consistent with those identified in the Strategic Highway Safety Plan. Highway Safety Improvement funds (HSIP) funds must be used on safety projects that are consistent with the State Strategic Highway Safety Plan.

These emphasis areas and associated strategies are:

Lane Departure crashes – These are crashes where the manner of collision is a head-on or sideswipe crash, or the first harmful event is an overturn or rollover, vehicle ran off the road, crossed the median or centerline, or collision with a fixed object. These types of crashes accounted for 69% of the total fatalities and serious injuries in the CAG region. Strategies to reduce the incidence of lane departure crashes are:

- Roadway infrastructure improvements
- For run-off the road crashes, minimize the potential for overturning or colliding with another vehicle
- Increase public education on corrective lane departure driving techniques

Speeding crashes – Speeding was a factor in almost half of all fatalities and serious injuries in the CAG region. Strategies to reduce speeding as a factor in crashes are:

- Increase highly visible and effective enforcement
- Use engineering design to reduce speeds
- Use crash-related data to target enforcement and public information campaigns.

Occupant protection – Failure to use restraints (seatbelts) continued to be a contributory factor to fatalities in the CAG region. The Community's Tribal Occupational Safety and Health (TOSHA) program has been very active in developing safety initiatives to improve seat belt use, which are described below. Strategies to increase seat belt usage are:

- Strengthen outreach and education about the proper use of seat belts and child-restraint devices to identified target audiences. The Ak-Chin Community is conducting several initiatives to increase seat belt usage including:
 - Six signs reminding persons to use their seatbelts will be installed on Farrell Road and Peters and Nall Road and three signs will be installed in areas internal to the Community, including the exit to the Recreation Center, the exit to the Preschool, and one other location.
 - Seat belt usage is mandated for Ak-Chin Indian Community employees and there will be colored seat belt covers installed in Community vehicles, so it will be easy to spot if seat belts are being used. There will be more enforcement of employee seat belt usage. For the general public, seat belt usage is a secondary violation.
 - A four-minute video geared towards youth is being prepared which emphasizes "it is cool to wear seat belts." A shorter version will be shown at the UltraStar Ak-Chin Cinemas before movie showings.
 - Planned "back to school" bash that will include safety information.
 - The Fire Department has a program for children's car seats.
- Enhanced enforcement of existing restraint laws with highly visible marketing about enforcement efforts

Young Drivers – Fatalities and serious injuries involving young drivers (24 years of age and under) account for almost 30 percent of the region's total. Strategies to reduce the incidence of crashes by young drivers are:

- Strengthen driver education
- Strengthen provisions and policies for graduated driver's license
- Strengthen driver license testing
- Enhance outreach campaigns to young drivers and their families about safe driving behavior and programs
- Promote technology monitoring young driver behavior
- Use or share data to address areas with a prevalence for young driver crashes.

Impaired Driving – An impaired driving crash is one where the driver was affected by drugs, alcohol, or medications. Strategies to reduce these type of crashes are:

- Conduct high visibility impaired driving enforcement initiatives.
- Increase educational efforts for everyone about the dangers and consequences of driving impaired.
- Work with the court system to promote policies and practices that result in meaningful penalties for impaired driving convictions.
- Partner with employers to suggest policies and procedures aimed at reducing impaired driving by their employees.
- Improve public awareness of and access to alternative forms of transportation (such as taxicabs).
- Improve data collection to understand and address impaired driving more effectively.

Motorcycles - Crashes involving motorcyclists account for approximately 25% of fatal and serious injuries in the CAG region. Strategies to reduce motorcycle crashes are:

- Improve public awareness, education, and training for motorcyclists, motorists, and all safety stakeholders to promote safer driving behaviors.
- Enhance rider training programs to improve motorcycle safety.
- Improve infrastructure features to help reduce the number and severity of motorcycle crashes.

The study also identified intersections and road segments with the greatest potential for safety improvements. The intersection of SR 347 and Papago Road ranked as number 10 of the top ten intersections that were identified as having potential for safety improvements. Safety improvements were not identified in the study; however, this intersection was also included in the Road Safety Assessment conducted in 2011.

3.7. PAVEMENT ASSESSMENT

A roadway pavement condition inventory was conducted via visual windshield surveys in February 2016 for the paved roadway segments within the Ak-Chin Indian Community Reservation area. The roadway network was evaluated following the general guidelines outlined in the Appendix to the *Coding Guide and Instructions for the IRR Inventory* (2007).. Pavement assessment and maintenance recommendations are discussed in **Chapter 8**.

Paving Needs for Parking Lots

A review was made of paving needs for parking lots within the Community. The following parking lots that serve Community facilities, are gravel and can be considered for paving are summarized in **Table 3-17**.

Table 3-17: Community Facility Gravel Parking Lots

Facility	Address
Health and Human Services, Health Education, Preschool (Note: Potential – under design review)	48251 W. Farrell Rd
Ak-Chin Regional Airport	32514 W Bud Rd

The parking lots summarized in **Table 3-18** are paved; however, they can be considered for maintenance improvements based on field review observations.

Table 3-18: Paved Parking Lots with Maintenance Needs

Facility	Address
Enrollment Office and Youth Council Office	16472 N. Maricopa Rd
GIS and Capital Projects Departments	45710 W. Farrell Rd
Elder Center	48141 W. Farrell Rd
Public Works and Sanitation Department	48141 Vekol Rd
Library	46521 W. Farrell Rd
Housing area across from Service Center and Preschool	
Council Chambers, Planning Department, Finance Department,	42507 W. Peters and Nall Rd

3.8. ACCESS MANAGEMENT

Access management is a set of techniques that state and local governments can use to control access to highways, major arterials, and other roadways. Access management can increase the capacity of these roads, manage congestion, and reduce crashes. The Ak-Chin Indian Community currently does not have an access management policy in place. Access along SR 347 is regulated by ADOT. On Maricopa-Casa Grande Highway access management is deferred to the local agencies within their jurisdictional boundaries. Examples of techniques for access management include:

- Driveway location, spacing, and design;
- Use of exclusive turning lanes;
- Median treatments, including two-way left turn lanes (TWLTL) that allow turn movements in multiple directions from a center lane and raised medians that prevent movements across a roadway;
- Use of service and frontage roads; and
- Land use policies that limit right-of-way access to highways.

The project team reviewed access management along the major roads within the Reservation area to determine if there were opportunities to provide a safer environment through access control. A brief overview of access points on each road and access management considerations is provided in **Table 3-19**.

Access drive spacing along Farrell Road and Peters and Nall Road range from 50' to 300'. Typically, many jurisdictions will implement access management guidelines to regulate access drive spacing that range between 150' to 300', depending on the facility's functional class. With Farrell Road being classified as a local road and the potential of being upgraded to a collector, the current spacing may be adequate. The access density (measure of the total number of access points per mile) along the north and south side of Farrell Road between Santos Street and Enos Street was estimated to be 33 access drives per mile. Peters and Nall Road was estimated to have an access density of 15 access drives per mile on the south side of the road. Per research provided by the National Cooperative Highway Research Program (NCHRP) Report 420, the accident rate can increase the higher the access density. Thus, it is recommended to consider local access management guidelines within the Community.

Table 3-19: Access Characteristics on Key Roads

Road Name	Number of Driveway Openings	Number of Intersecting Streets	Issues and Opportunities
Farrell Road, between Santos Street and Enos Street	<u>North Side</u> 26 Access Drives <u>South Side</u> 24 Access Drives	<u>North Side</u> 4 Intersections (Carlyle Road, Church Road, Cemetery Road, and Thomas Street) <u>South Side</u> 1 Intersection (Carlyle Road)	
Farrell Road, between Enos Street and SR 347	<u>North Side</u> 4 Access Drives <u>South Side</u> 2 Access Drives	<u>North Side</u> 3 Intersections (Smith Wash E, Narcia Street, and Vasquez Street) <u>South Side</u> 1 Intersections (Narcia Street)	The access to the Youth Council Building is very close to the intersection of Farrell Road and SR 347.
SR 347 between Juan Street and Harrah's Ak-Chin Casino	<u>West Side</u> 3 Access Drives	<u>West Side</u> 3 Intersections (Farrell Road, Tobi Drive, and Harrah's Ak-Chin Casino Entrance) <u>East Side</u> 1 Intersection (Farrell Road)	Access regulated by ADOT
Peters and Nall Road, between Smith Road and Porter Road	<u>North Side</u> 3 Access Drives <u>South Side</u> 13 Access Drives	<u>South Side</u> 2 Intersections (Barley Road, and Farm Lane)	

Source: Kimley-Horn

3.9. BRIDGES

BIA bridges on the Tribal Transportation Inventory are typically inspected every two years. In some cases, bridges on state routes or other local government routes are inspected by ADOT. Currently, one bridge has been inspected by the BIA, which is the Smith Wash Bridge, a continuous concrete culvert 0.5 miles west of Highway 347 on Farrell Road. This structure was last inspected in 2014. The 2014 Bridge Inspection (SI&A) Reports indicated that that southwest rail needed repair, yellow and black markers needed replacement, and other maintenance activities. It should be noted that a pedestrian bridge was recently constructed at this location as part of the Farrell Pathways project.

Table 3-20 summarizes the bridges that are located on study area roads and their sufficiency rating, where available. There are several bridges and larger culverts that have not been rated by the BIA or ADOT. It may be advisable to add these bridges to the National Bridge Inventory to be inspected by the BIA.

ADOT Inspected Bridges

For ADOT inspected bridges, a sufficiency rating is assigned to each bridge (greater than 20 feet), which is inventoried. 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. 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 will be eligible for rehabilitation, and bridges with an SR less than 50 will be eligible for replacement or rehabilitation. Within the study area, bridges inspected by ADOT were located on SR 347 and the Maricopa Casa Grande Highway. These bridges all had ratings higher than 80. A bridge is designated as “deficient” if it is either structurally deficient or functionally obsolete. Structurally Deficient (SD) means a bridge becomes structurally deficient when it reaches the set threshold of one of six criteria from the FHWA National Bridge Inventory. None of the bridges was rated as structurally deficient or functionally obsolete.

Table 3-20: Area Bridge Ratings

Street Name	Bridge Number	Bridge Type	Bridge Length (Feet)	Sufficiency Rating	SD=Structurally Deficient ND=Not Deficient FO=Functionally Obsolete
Farrell Road	160H	Not evaluated- this is a proposed 90-foot bridge at the current dip section			
Farrell Road	H154	Concrete culvert	26.7	N/A	ND
Bunger Road	H580 – Pinal County	Not evaluated – this is a 34-foot pipe battery of 4-foot diameter pipes on 3-foot spacing. It is not in the national Bridge Inventory or the BIA Bridge Inventory			
Peters and Nall Road	H150	Not evaluated – This was formerly a BIA inspected bridge but has been transferred to the Ak-Chin Indian Community. It is listed on the national Bridge Inventory as Bridge Number 0000000000H150			
Peters and Nall Road	161H	Not evaluated – This is currently shown as a proposed bridge section in the BIA Road Inventory			
Anderson Road	C211 – City of Maricopa	N/A			
Maricopa Casa Grande Highway	9073 – City of Maricopa	Wash RCB	32	87.09	ND
Maricopa Casa Grande Highway	9072 – City of Maricopa	Wash RCB	32	86.31	ND

Street Name	Bridge Number	Bridge Type	Bridge Length (Feet)	Sufficiency Rating	SD=Structurally Deficient ND=Not Deficient FO=Functionally Obsolete
Maricopa Casa Grande Highway	9071 – City of Maricopa	Wash RCB	32	86.31	ND
Maricopa Casa Grande Highway	9070 – Pinal County	N Santa Cruz Wash RCB	32	84.73	ND
SR 347	60908 – Arizona Department of Transportation	Smith Wash RCB	65	82.81	ND
White and Parker Road	XXXD – Pinal County	Not evaluated			
Russell Road	C212	Not evaluated			
Maricopa Casa Grande Highway	10269 – Pinal County	Santa Rosa Wash Bridge	213	97.45	ND
Maricopa Casa Grande Highway	9069 – Casa Grande	Wash RCB	32	86.09	ND
Maricopa Casa Grande Highway	9068 – Casa Grande	Wash RCB	32	86.09	ND

Source: Bureau of Indian Affairs Western Region Office, Arizona Local Public Agency System Bridge Record as of 2/28/2015, <https://www.azdot.gov/docs/default-source/business/arizona-local-government-inventory---bridge-inventory.pdf?sfvrsn=4> and Arizona State Highway System Bridge Record as of 2/28/2015, [https://www.azdot.gov/docs/default-source/business/bridge-inventory-\(all-districts\).pdf?sfvrsn=6](https://www.azdot.gov/docs/default-source/business/bridge-inventory-(all-districts).pdf?sfvrsn=6)

4. PEDESTRIAN AND BICYCLE FACILITIES

4.1. EXISTING SIDEWALKS, PATHS, AND TRAILS

The Ak-Chin Community has been very proactive in constructing facilities to make the Ak-Chin Indian Community a walkable and bikeable Community. Bicycling and walking are key elements to a healthy Community's transportation system.

In 2016, the Community completed an extensive pathways project on Farrell Road, between Santos Street (near the Rodeo Grounds) and Narcia Street. The project included pathways, bus shelters, landscaping, exercise stations, crosswalks, and a pedestrian bridge over the Smith Wash as well as associated signing and striping. This Community project connects homes near Farrell Road to Community services, recreational areas, and shopping on Farrell Road.

Similarly, the Peters and Nall Road reconstruction, which was completed in 2015, also included a pathways system, landscaping, and exercise stations as part of the reconstruction work. New subdivisions typically include sidewalks.

The Ak-Chin Indian Community has put a priority on constructing pathways and associated amenities such as shade landscaping, exercise stations, shelters, and crosswalks – keys to a healthy, walkable and bikeable Community.

Figure 4-1 provides an overview of existing sidewalks and paths in the Community.

4.2. PLANNED FACILITIES

In 2011, the *Ak-Chin Indian Community Transit and Non-Motorized Transportation Study* provided recommendations for pedestrian, bicycle, and transit improvements within the Community. The recommended new path and trail system was divided into five phases, shown in **Figure 4-2**. The phases and the status of the phases are:

- **Phase 1: Farrell Road (Santos Road to SR 347)** – Completed in 2016.
- **Phase 2: Peters and Nall Road** – Pathways are complete in the developed areas of Peters and Nall Road (south side of Peters and Nall Road west of the Ak-Chin Indian Community offices to east of Farm Lane). Pathways to connect to SR 347 would be a future phase of work, when needed.
- **Phase 3:** Village areas north and south of Farrell Road, west of Smith Wash.
- **Phase 4: Subdivisions east of Smith Wash and along SR 347** – Currently, plans are underway to provide a pathway along Antone Avenue, which is parallel to SR 347. Pedestrian connections between Farrell Road and Peters and Nall Road would be a future phase of work, when needed. It was noted that there can be joggers along SR 347, south of Farrell Road.
- **Phase 5: Public Use and Commercial Area** – Pathways and striped shoulders will be included as the Ak-Chin Parkway and associated roadways are constructed.

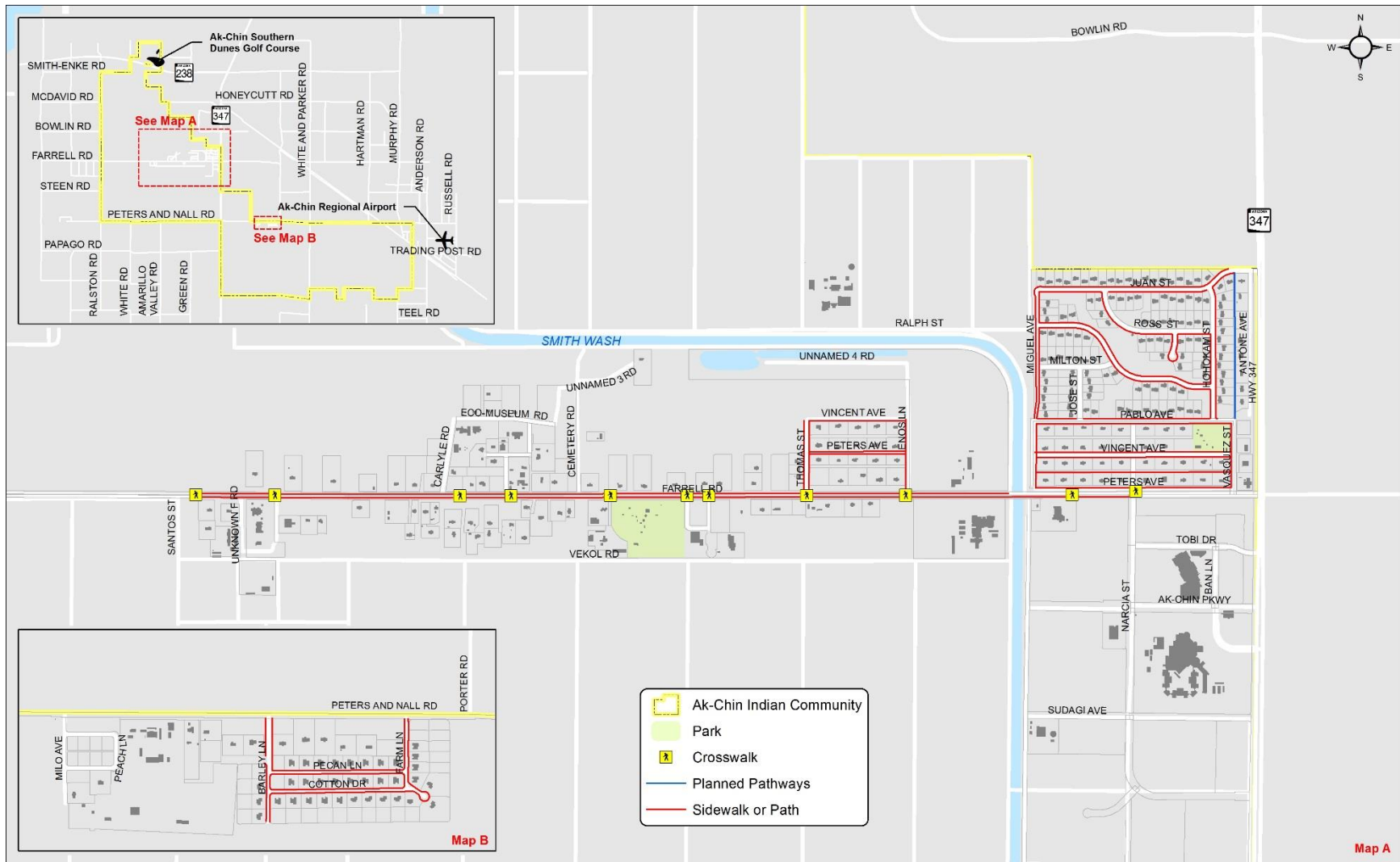
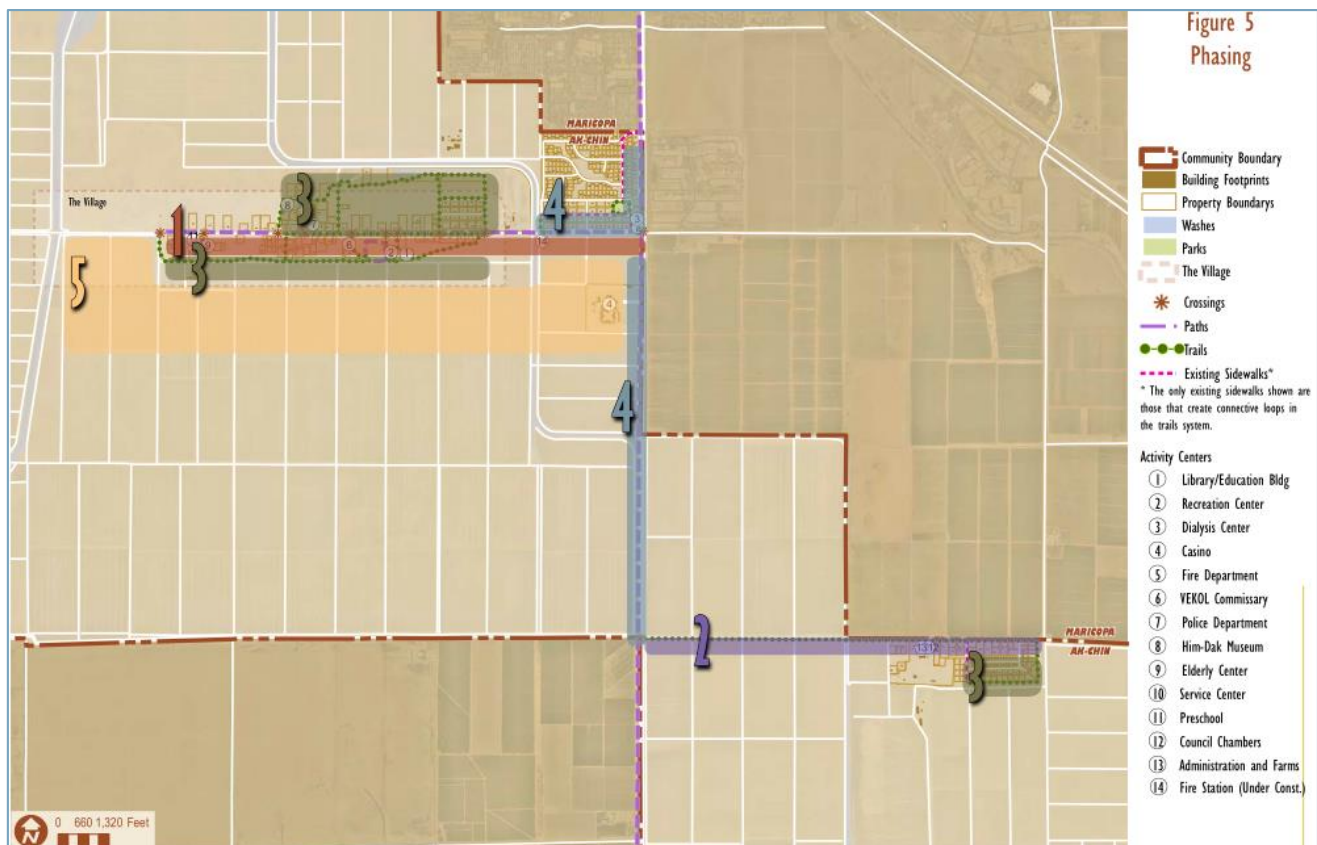


Figure 4-1: Existing Sidewalks and Paths



Source: Ak-Chin Community Transit and Non-Motorized Transportation Study, HDR, Inc, 2011, Page 26

Figure 4-2: Pathways Plan Phasing

4.3. PEDESTRIAN AND BICYCLE FACILITY NEEDS

A review of the pedestrian and bicycle facilities and input from stakeholders revealed the following transportation needs:

- Consider installing flashing lights at major crosswalks on Farrell Road for better pedestrian visibility when needed. Farrell Pedestrian design includes flashing lights. The project team decided to not activate until there is more usership.
- Consider an education campaign to let motorists know where to pull over in case of emergencies on Farrell Road, so that drivers do not encroach on the pathway areas.
- Include bicycle and pedestrian facilities as part of the road design standards.
- Needs for pedestrian pathways include:
 - Planned pedestrian path on Antone Avenue, between Juan Street to the southern terminus of Antone Avenue
 - Sidewalk or path on Elder Center Loop Road
 - Sidewalks or paths on Carlyle Road and Peters Avenue
 - Reuse of three historic dirt roads as unpaved pedestrian walkways
 - Complete pathways and trails in accordance with the *Ak-Chin Indian Community Transit and Non-Motorized Transportation Study*.

5. TRANSIT CONDITIONS

This chapter describes the planned transit system that is currently in development for the Community, as well as existing transit services that are available in the region.

5.1. PLANNED AK-CHIN INDIAN COMMUNITY TRANSIT SERVICE

The Ak-Chin Indian Community is in the process of implementing a Community Transit system, which is well underway. The transit system will operate on a deviated fixed route, which means the service will operate on a fixed route but can detour from the route for pick-ups or drop-offs if they are scheduled in advance and within a certain distance from the fixed route. The fixed route has 25 stops and takes one hour to complete. Riding the fixed route will be free, but there will be a fee to deviate from the route. Patrons will need to call ahead to schedule a deviated route trip. Other fixed-route stops are being considered to add to the system.

The service will operate with two 14-passenger buses, which have been purchased. It is anticipated that the service will be operational over the next few months, or approximately in late summer or early fall, 2016. The Transit Department is in the process of acquiring other equipment, such as GPS tracking system and communications equipment.

Operating characteristics for the proposed system are summarized in **Table 5-1**. Transit stops that have been physically built are shown in **Figure 5-1**.



Bus shelter on Farrell Road

Table 5-1: Transit System Operating Characteristics

Characteristic	Operating Characteristics
Service Hours	To be determined. Transit Department office hours are 8 a.m. – 5 p.m.
Headway (Minutes)	1 hour
Daily Trips	9
Fleet (vehicles)	2

Source: Discussion with Transit Manager, Octavio Machado, May, 2016

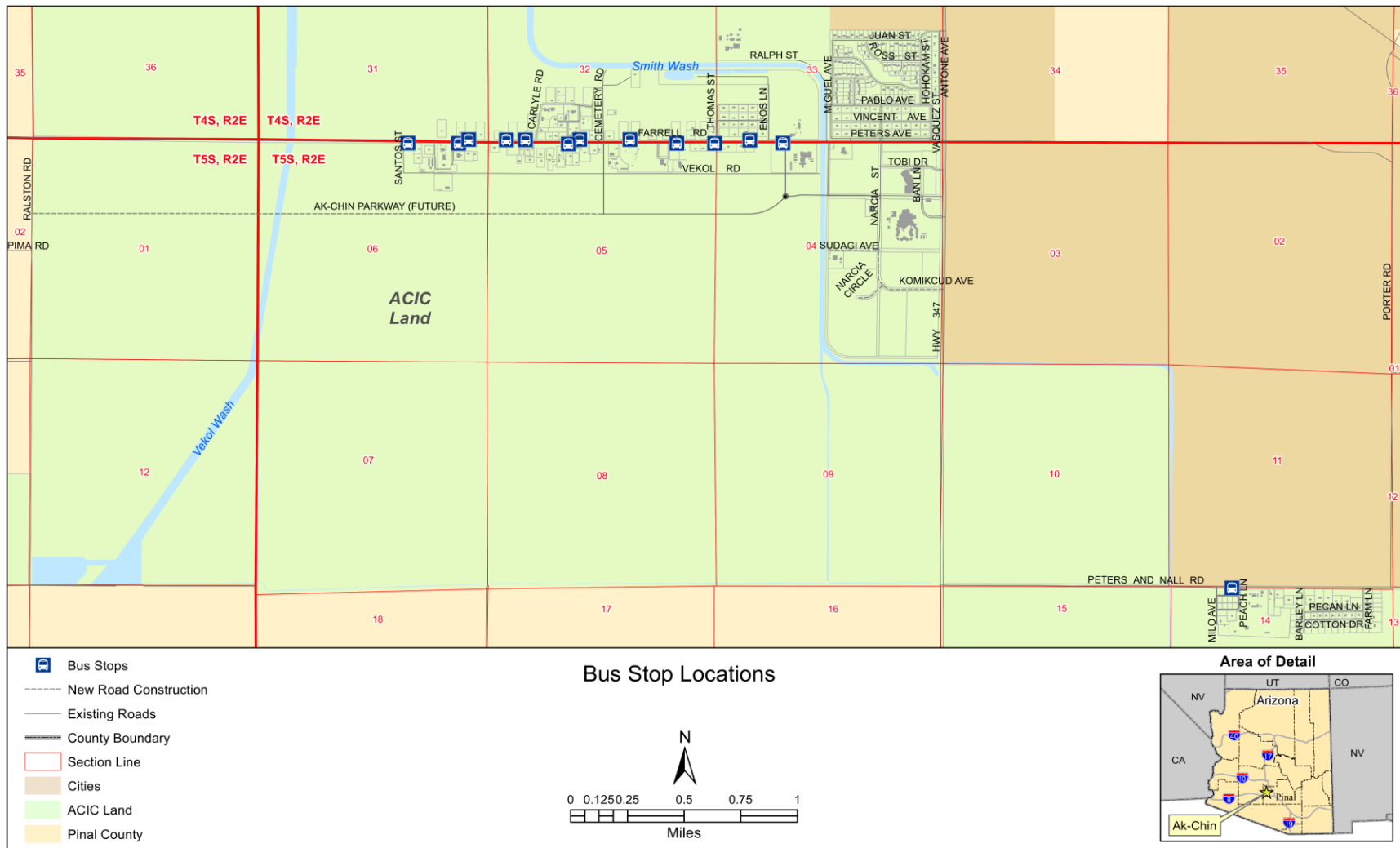


Figure 5-1: Transit Stops

5.2. AK-CHIN INDIAN COMMUNITY TRANSPORTATION SERVICES

The Ak-Chin Indian Community provides several transportation services in support of Community programs:

- The Ak-Chin Indian Community Education Department provides after school and summer school tutoring. After school tutoring is provided at Maricopa Elementary school sites with transportation provided by the Maricopa Unified School District.

When students are tutored in the Community at the Education Department, transportation is provided using:

- 3 twelve-passenger vans
- 2 minivans
- 1 car
- Special event charter buses
- The Youth Council serves students 13-25 years old. They provide after school and weekend activities. In the summer they provide daytime activities.
- Health and Human Services provides transportation services both inside and outside of the Community. They provide transportation from 8 a.m. to 9 p.m. Transportation vehicles include:
 - 1 twelve-passenger van,
 - 1 sport utility vehicle (SUV)
 - 3 passenger cars
- The Ak-Chin Elder Center provides transportation services to meals and appointments.

5.3. OTHER TRANSIT SERVICES

City of Maricopa Express Transit (COMET)

The City of Maricopa Express Transit operates three types of transit services on weekdays only:

- Local Demand Response Service – This is a reservation-based service that operates within the City of Maricopa City limits. The fare is \$1 per one-way trip. This service operates from 9:00 am – 5:00 pm Monday, Wednesday and Friday and 9:30 am – 1:30 pm Tuesday and Thursday.
- Local Limited Fixed Route with $\frac{3}{4}$ mile deviations – This service operates on a fixed route, however the route can make deviations, up to $\frac{3}{4}$ miles, if needed. The fixed route service makes stops at Harrah's Ak-Chin Casino and the Ultra Star Multi-tainment Center. The route makes two hour-long runs in the morning and two runs in the afternoon (3 p.m. to 3:55 p.m. and 4 p.m. to 4:55 p.m.).
- Regional Shuttle – This is a reservation-based service offered from 9 am to 5 pm on Tuesdays and Thursdays. On Tuesdays, the service provides round trips from Maricopa to Chandler Regional Hospital and any point within a five-mile radius. On Thursdays, the service provides round trips from Maricopa to Banner Hospital in Casa Grande, and any point within a five-mile radius.

Central Arizona Regional Transit (CART)

The Central Arizona Regional Transit System (CART) is a regional bus system that connects Florence, Coolidge, Central Arizona College, and Casa Grande. It is funded by ADOT, Central Arizona College, City of Coolidge, Pinal County, and the Town of Florence. CART is a fixed-route service, which is accessible to persons with disabilities. All vehicles are wheelchair equipped. A route map and schedule for the service is shown in **Figure 5-2**. Both the eastbound route and the westbound routes serve employment,

government, retail, and school activity centers in Florence, Coolidge, Pinal County, and Casa Grande. The stop closest to the Community is located near the intersection of Trekell Road and McCartney Road.

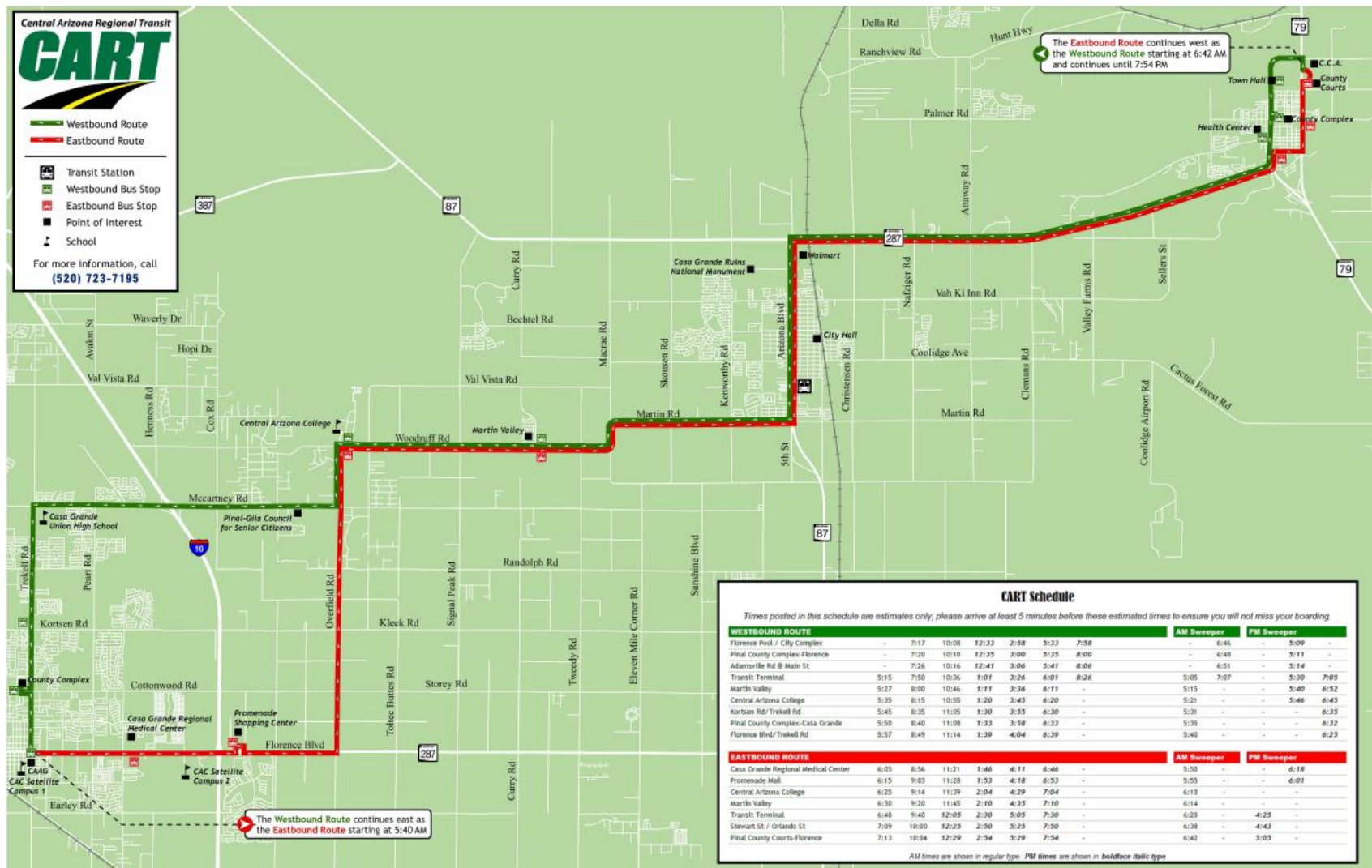
Valley Metro Vanpool

Valley Metro vanpool provides active commuter service to various locations in the Phoenix Metropolitan Area and uses the Maricopa Park and Ride Lot at SR 347 and Honeycutt Road as the primary pickup and return point. Covered parking is available at this location.

AMTRAK

Maricopa is one of seventeen Amtrak stations in Arizona. The Maricopa station, serviced by the Sunset Limited and Texas Eagle passenger routes, is located at 19427 N John Wayne Parkway. Six weekly Amtrak trains cross through the town center of Maricopa.

In the future, a new Amtrak station, approximately one mile west of the present location, is currently being designed and will be co-located with the planned Maricopa Transportation Center. Also, planning has been completed for a grade-separated interchange at SR 347 and UPRR.



Source: City of Coolidge

Figure 5-2: Central Arizona Regional Transit

6. AK-CHIN REGIONAL AIRPORT

The Ak-Chin Regional Airport is a public use airport located west of Russell Road and south of Peters and Nall Road. Access to the airport is via Russell Road and Bud Road. Bud Road also provides access to the adjacent Saddleback Industrial Park.

In October 2012, the Airport was accepted into the National Plan of Integrated Airport Systems, which makes it eligible to receive Federal Grants under the Airport Improvement Program.

The Airport was originally the Phoenix Regional Airport and was constructed in 1999. It was purchased by the Ak-Chin Indian Community in 2006 and was renamed in 2011. The airport and surrounding property encompasses more than 450 acres³.

It should be mentioned that in addition to the airport, there is also an airstrip in the farming area used for crop-dusting planes.



Directional signage on the Maricopa-Casa Grande Highway to Ak-Chin Regional Airport

6.1. AIRPORT FACILITIES

The airport includes one 4,751-foot by 50-foot runway, parallel taxiway, apron (the airport apron is the area of an airport where aircraft are parked, loaded or unloaded, refueled, or boarded), Fixed base operator (FBO) / terminal building, and fuel system.

Bud Road leads to a gravel parking lot in the airport that can accommodate approximately 50 vehicles.

6.2. AIRPORT ACTIVITY

An overview of activity at the airport is summarized in **Table 6-1**. This table shows the number of aircraft housed or based at the airport on a regular basis, as well as the number of take-offs and landings, or “operations” at each airport.

Table 6-1: Ak-Chin Regional Airport Operations

Facility Name	General Aviation Local Operations*	General Aviation Itinerant Operations **	Total Annual Operations	Reporting Date
Ak-Chin Regional Airport	2,886	15,424	18,310	4/29/2014

*Those operating in the local traffic pattern or within a 20-mile radius of the airport.

**Those general aviation operations (excluding commuter or air taxi) not qualifying as local.

Source: Federal Aviation Administration Airport Facilities Data, http://www.faa.gov/airports/airport_safety/airportdata_5010/menu/#reports, Referenced 3/6/2016

³ “About the Ak-Chin Regional Airport”, www.akchinairport.com, referenced December 27, 2015.

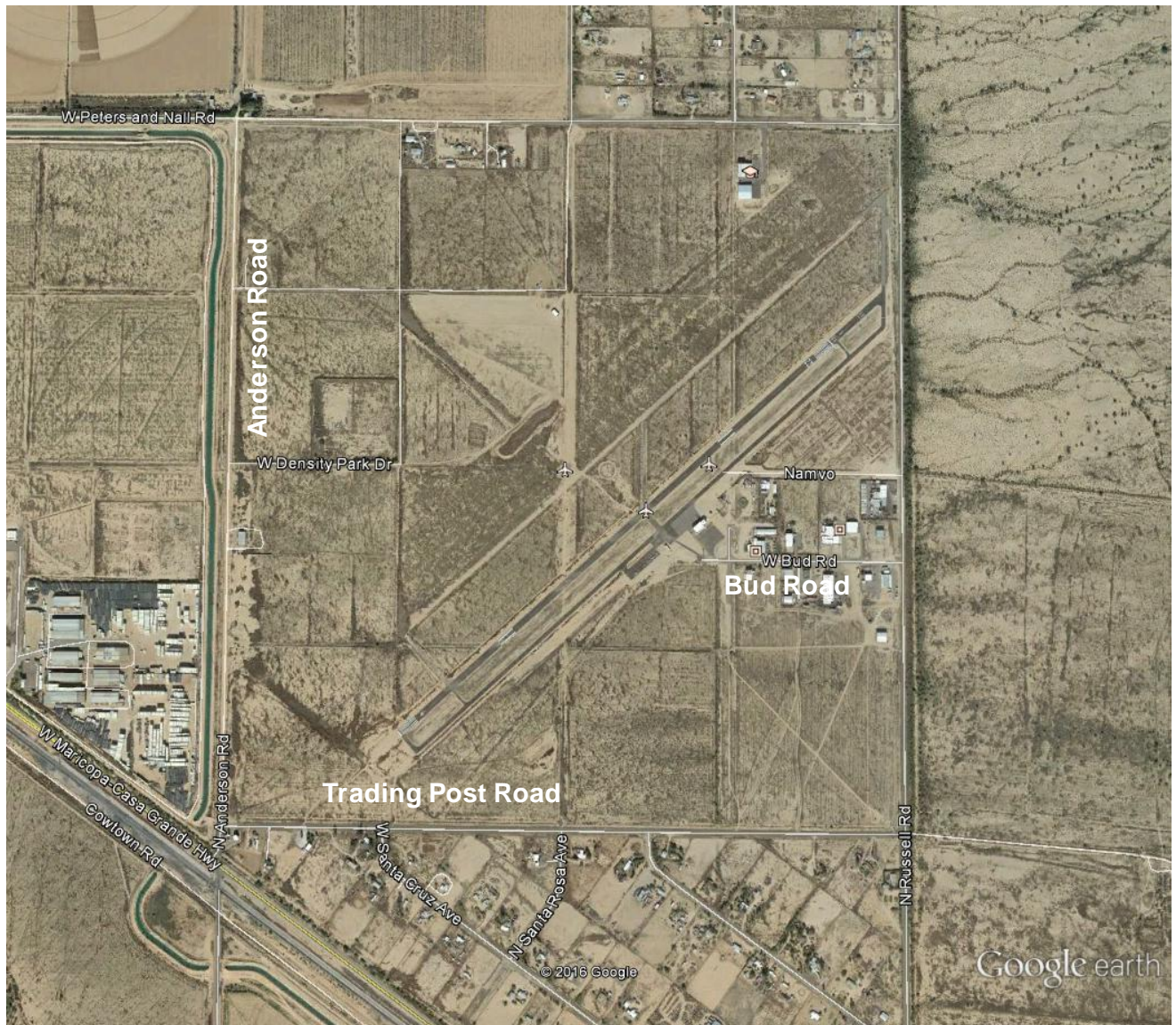


Figure 6-1: Road System near the Ak-Chin Regional Airport

6.3. FUTURE AIRPORT PLANS

Future airport plans were based on information from the *Ak-Chin Regional Airport Master Plan (2015)*, which emphasizes that the development of the airport should be based on actual demand for facilities rather than a timeframe. This allows the airport flexibility to accelerate or decelerate development based on current conditions; however, the plan is intended for a 20-year planning period.

The Airport Master Plan recommended the following projects related to the road system:

Future automobile parking would also be incorporated into future hangar development areas to provide parking for airport users near their hangars and aircraft.

- As Bud Road is used by both aircraft and vehicles, it is recommended that a southeast side access road be developed to segregate vehicle traffic from aircraft traffic on Bud Road. The recommended location for the southeast side access road is entering from the north side of West Trading Post Road

and running north along the west side of the industrial park development parcels located on the southeast corner of Ak-Chin property. This will avoid having airport traffic enter through West Bud Road, which is also used by aircraft based in Saddleback Industrial Park.

- The taxi-lane serving Bud Road be reconfigured including the construction of a new taxi-lane running north-south to connect Bud Road with the existing parallel taxiway. This reconfigured access from Bud Road to the airport will help to alleviate the mixing of automobile and aircraft traffic.
- A future primary airport access road serving the west side of the airport is recommended as west side airport and airpark development occurs. The access road on the west side of the airport is envisioned to be the main access to the airport in the future. The west side access road would enter the airport from North Anderson Road connecting to points west including the Bunger Property and the Santa Cruz Commerce Center.

7. TRANSPORTATION NEEDS AND RECOMMENDED IMPROVEMENT PROJECTS

The chapter provides an overview of transportation needs and the recommended projects to address those needs. It covers roadway, pedestrian and bicycle, transit, and transportation improvements related to aviation.

Transportation improvement recommendations were developed through a process which considered:

- Stakeholder/Technical Advisory Committee (TAC) member/public input
- Traffic analysis
- Crash data assessment
- Field review of road conditions and pavement conditions
- Available pedestrian, bicycle, and transit facilities and services
- Review of previous studies and reports

7.1. ROADWAY AND INTERSECTION PROJECTS

This section discusses roadway and intersection related needs and proposed projects, which are described in the following areas:

- Roadway improvements
- Intersection improvement projects
- Bridge projects
- Street lighting projects
- Safety projects
- Access management projects
- Parking lot improvements
- Recommended studies
- Other projects

Road maintenance recommendations are discussed in **Chapter 8, Roadway Maintenance Plan**.

Roadway Improvements

An overview of proposed roadway and intersection projects in the Traditional Village area of the Community is provided in **Figure 7-1**. Proposed roadway projects in the east area of the Community (east of SR 347) is shown in **Figure 7-2**.

New Road Construction

Proposed roadway system improvements are required to become part of the Long Range Transportation Plan because they will become part of the Tribal road system per BIA requirements. New road construction is planned in several areas described in this section, which include the Ak-Chin Parkway and associated north-south roadways, Pecan Subdivision streets, and Ak-Chin Circle roads. These projects are described in more detail in this section.

Ak-Chin Parkway and Associated North-South Streets

Ak-Chin Parkway is planned to become a major east-west roadway and will support future planned development in the Public Use and Commercial area of the Community. It is anticipated to function as an arterial roadway.

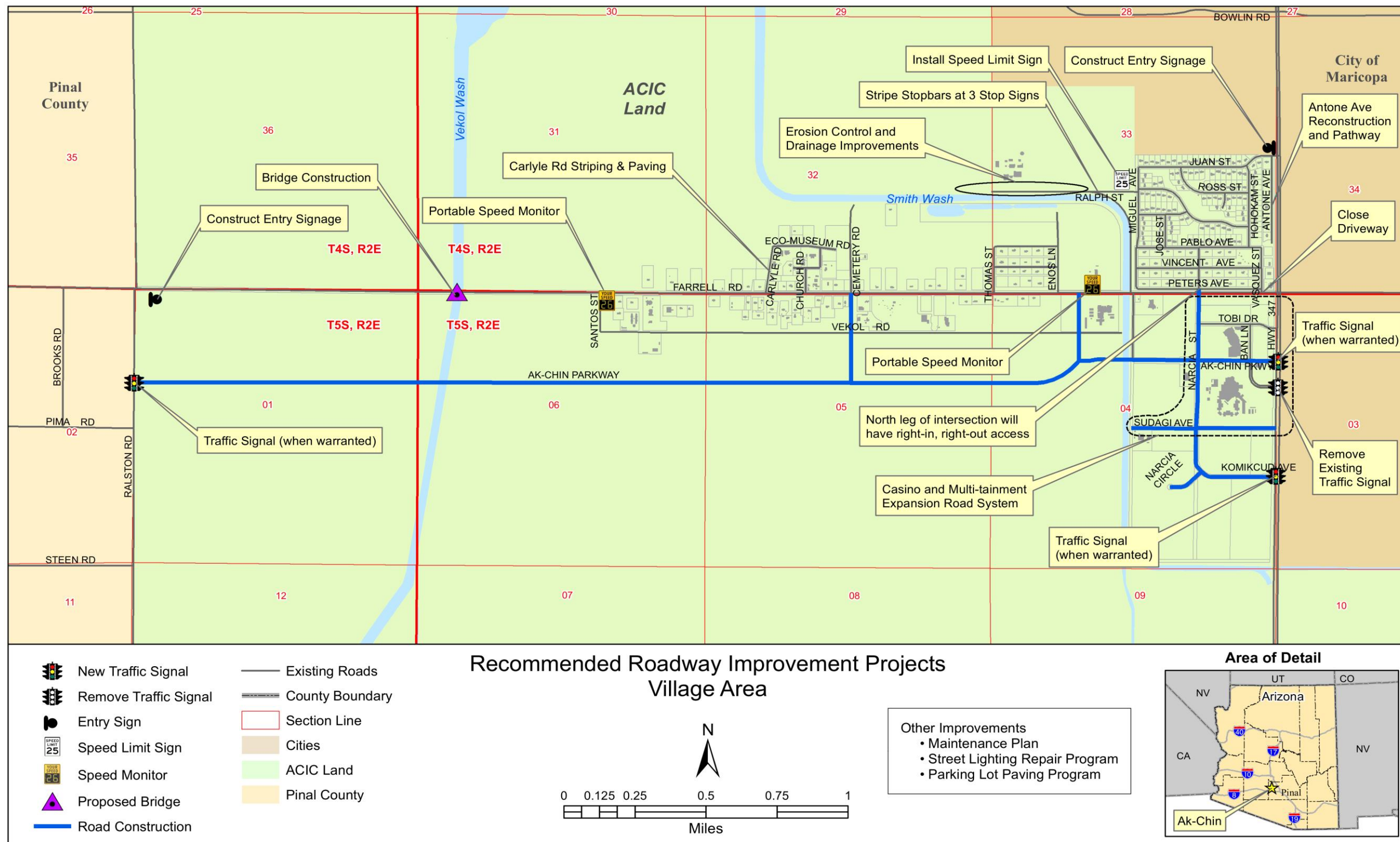


Figure 7-1: Roadway and Intersection Improvements – Traditional Village Area

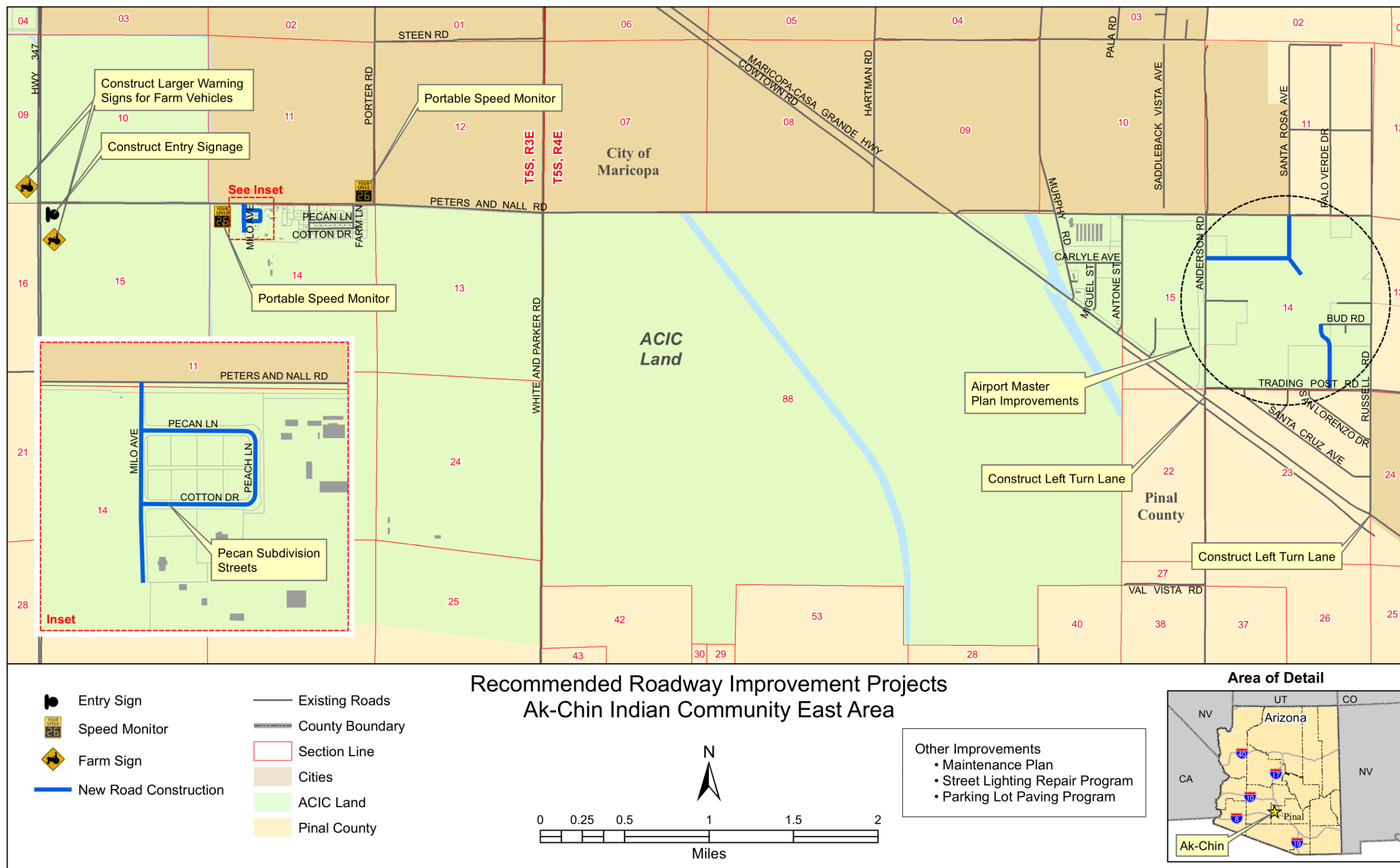


Figure 7-2: Recommended Road Improvements in the East Reservation Area

The BIA Road Inventory classification is anticipated to be Class 2- a rural minor arterial road. This area is planned to be the major growth area during the time frame of the Long Range Transportation Plan. Future plans include:

Short-range (2016-2020): Three segments of the Ak-Chin Parkway are anticipated to be constructed during the short-range time period:

- Ak-Chin Parkway: SR 347 to Narcia Street – Construct as a two-lane 35 mph facility with a new traffic signal at Ak-Chin Parkway/SR 347 intersection.
- Ak-Chin Parkway: west of Smith Wash to Cemetery Road – Construct as a two-lane 35 mph facility. The new right-of-way is 110-ft. Connecting two-lane north-south roadways will be constructed as part of this project at Cemetery Road and the Alternate D Roadway.
- Ak-Chin Parkway: Narcia Street to west of Smith Wash – This two-lane road segment, which includes a bridge over Smith Wash, is anticipated to be constructed late in the short-range time period.

Mid-range (2021-2025): During this time period, new construction of the Ak-Chin Parkway is not anticipated to occur.

Long-range (2026-2035 and beyond): During this ten-year period, construction of the Ak-Chin Parkway further west is anticipated, as well as widening of existing parkway segments to four-lane roadways as further development occurs.

Pecan Subdivision Streets

Road construction of the Pecan subdivision includes new streets including Pecan Lane, Peach Lane, Cotton Drive, and Milo Avenue, which will support an 11-lot subdivision. The road system is shown in **Figure 7-3**. The dashed lines in the figure represent streets currently under construction.

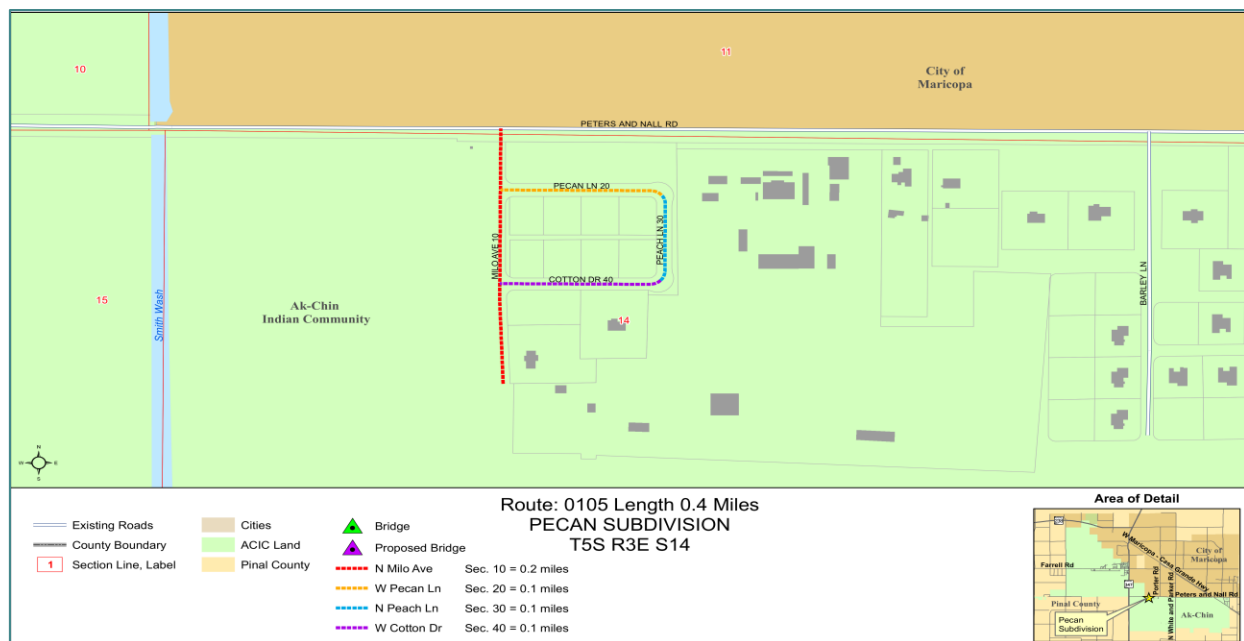


Figure 7-3: Pecan Subdivision Streets

Ak-Chin Circle Roads

The Ak-Chin Circle Roads will support development of the Harrah's Ak-Chin Casino and Resort and the UltraStar Multi-tainment Center at Ak-Chin Circle. The road system in this area is shown in **Figure 7-4**. The figure shows currently existing roads (solid colors) as well as planned roads (dashed lines). As part of the improvements, the north leg of the Marcia Street / Farrell Road intersection will allow only right-turn-in and right-turn-out traffic movements. This will help to discourage cut-through traffic in the Greasewood Subdivision.

A traffic signal could be provided at the intersection of Komkcud Avenue and SR 347, if warranted⁴ in year 2040.

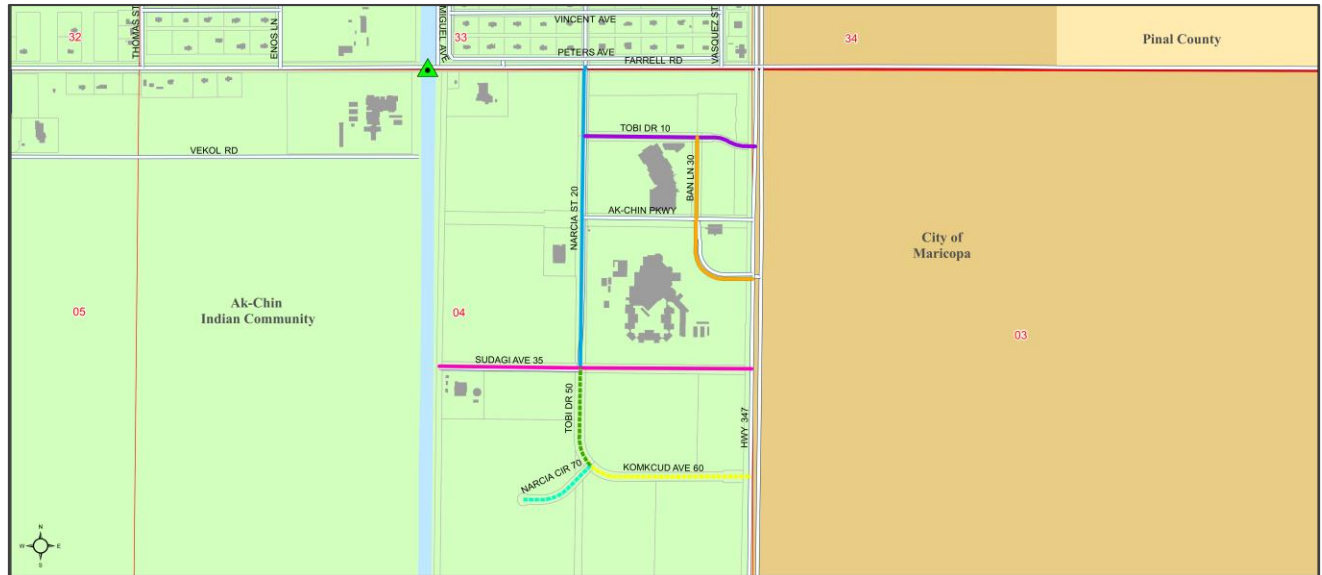


Figure 7-4: Ak-Chin Circle Roads

Other Roadway Projects

Antone Avenue Reconstruction

A project that is planned to go out to bid in 2016 is the reconstruction of Antone Avenue and associated pathway construction. This project may also include a Community entry sign.

Carlyle Street Striping and Resurfacing

Stakeholder comments have indicated that Carlyle Street is narrow, and to exit or enter, one must wait for one vehicle to proceed before the other can enter. A field review indicated that the street is 22 feet wide, which is acceptable per the American Association of State and Highway Officials (AASHTO) Green Book, a standard road design guide. However, it is recommended that the road be striped so that drivers know better where to position themselves on the road. This is recommended to be done in conjunction with sealing the road.

⁴ Source: Casino Expansion- Ak-Chin Indian Community, Master Traffic Impact Analysis, June 2016, page 3.

Intersection Projects

Intersection improvement recommendations are summarized as follows.

Ralph Street/Smith Wash Road Intersection Striping

This intersection is stop sign controlled at all three legs of the intersection. It is recommended that stop bars be painted on all three approaches to help drivers know where to stop for optimal sight distance. It is also recommended that speed limit signs be installed on Ralph Street. The intersection is shown in **Figure 7-5**. A future consideration may be to convert this intersection to a T-intersection to avoid problems seeing other motorists on the road.

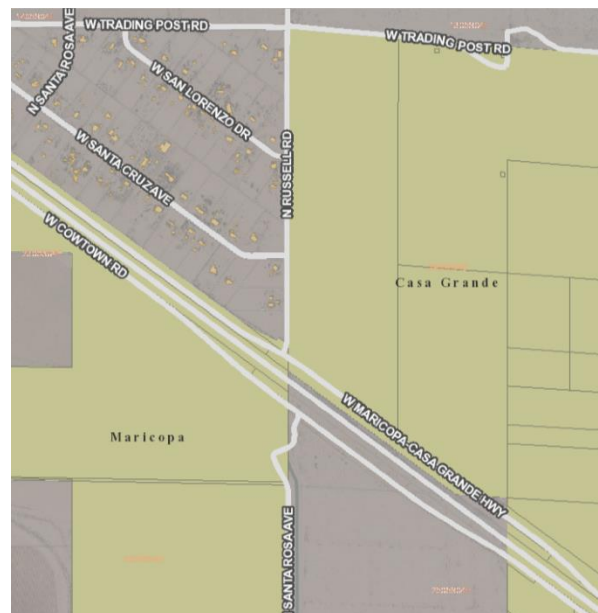
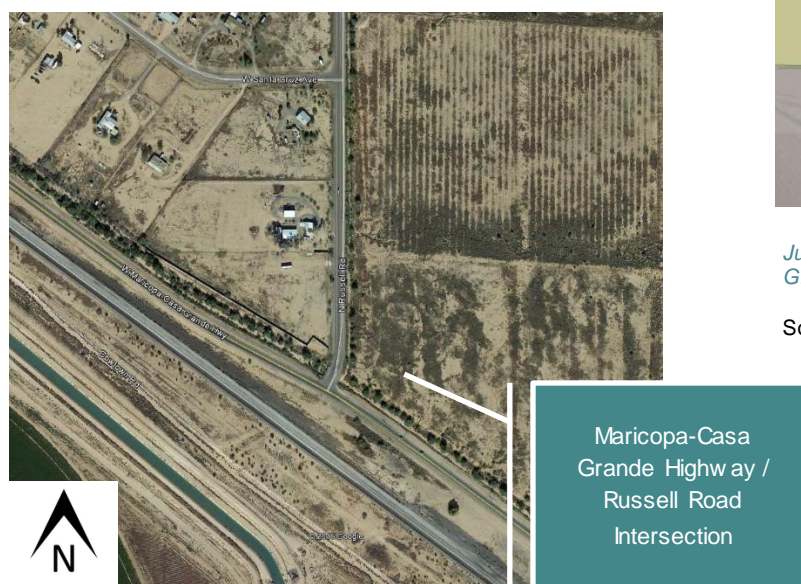
It is recommended that erosion control improvements be undertaken along Ralph Street from the stop sign to the Water Reclamation facility at 46200 W. Ralph Street. Input from stakeholders indicates that there are drainage problems which include silt and gravel deposits on the roadway, road edge erosion, no culverts, water ponding and the subgrade becomes saturated. Recommended improvements on the south side of Ralph Street include placement of erosion control rolls, rip-rap (a permanent, erosion-resistant ground cover of large stones), and a header (flush curb).



Figure 7-5: Ralph Street/Smith Wash Road intersection

Maricopa-Casa Grande Highway Left Turn Lane Construction at Russell Road Intersection

The Maricopa-Casa Grande Highway is a two-lane cross section, with no left turn lane at the Russell Road intersection. A left turn lane is recommended to provide better access to make a left turn onto Russell Road, which provides access to the Ak-Chin Regional Airport. Stakeholder concerns have been expressed that it is uncomfortable to make an eastbound to northbound left turn on the Maricopa-Casa Grande Highway, since it is located near a curve, is a two-lane roadway, and vehicles travel at relatively high speeds. It is recommended that a left turn lane be constructed at this intersection. The Maricopa-Casa Grande Highway is under the jurisdiction of the City of Maricopa. An aerial view of this intersection is provided in **Figure 7-6**.



Jurisdiction Boundary Map at Russell Rd/Maricopa-Casa Grande Highway area

Source: Pinal County GIS

Figure 7-6: Aerial View of Maricopa-Casa Grande Highway/Russell Road Intersection

Maricopa-Casa Grande Highway Left Turn Lane Construction at Anderson Road intersection

The Maricopa-Casa Grande Highway is a two-lane cross section, with no left turn lane at the Anderson Road intersection. A left turn lane is recommended to provide better access to make a left turn onto Anderson Road. Stakeholder comments and observations indicate that speeds are relatively high on this two-lane roadway, and it can be uncomfortable to make a left turn. In the future, Anderson Road will provide access to the Ak-Chin Regional Airport. An aerial view of this intersection is shown in **Figure 7-7**. This intersection is in the City of Maricopa jurisdiction.

It should be noted that the City of Maricopa recognizes the need for a grade separated crossing of Anderson Road over the Maricopa-Casa Grande Highway due to the traffic volumes at this location forecasted in the Maricopa Area Transportation Plan between 2040 and buildout. However, a bridge at the current location is not feasible due to the landing approach zone of the Ak-Chin Regional Airport. Anderson Road cannot be widened to a four lane at-grade crossing of the Union Pacific Railroad tracks and it is not desirable to do so. The City of Maricopa plans (if approved by City Council) to study the feasibility of a grade separated crossing either to the east or the west of the current intersection, thereby providing further connectivity.



Jurisdiction Boundary Map at Anderson Rd/Maricopa-Casa Grande Highway area

Source: Pinal County GIS



Figure 7-7: Aerial View of Maricopa-Casa Grande Highway/Anderson Road Intersection

SR 347 / Papago Road Intersection Improvements

Improvements at this location were identified as part of the Ak-Chin Indian Community Road Safety Assessment (RSA). This intersection was identified as one of the top ten intersections with potential for safety improvements in the *Central Arizona Governments Strategic Transportation Safety Plan (2015)*. Suggested improvements in the RSA are:

- Advance street name signs on SR 347 are too close to the intersection.
- Remove one-way sign on SR 347 (currently there is a southbound one-way sign mounted on the stop sign on Papago Road and a northbound one-way sign located on SR 347).

A review of this intersection is scheduled by ADOT as a follow-up to the RSA conducted at this location. A photo of this intersection is shown in **Figure 7-8**.



Figure 7-8: SR 347/Papago Road intersection, Looking East

Bridge Projects

Design and Construct Bridge across Vekol Wash at Farrell Road

Stakeholder outreach identified a need for a future bridge across the Vekol Wash at Farrell Road. During monsoon season, the Vekol Wash flows can cause the road to be closed, resulting in lengthy detours. Ak-Chin Indian Community Public Works and Sanitation Department staff must manually place road barricades during monsoons. The proposed improvement is to construct a box culvert and approaches at existing dip section at this location.

Bridge Inspections

Currently, the BIA only inspects bridges that are on BIA-owned routes. Bridges on Tribal-owned routes are the responsibility of the Tribe to inspect. It is proposed that Tribal bridges be inspected on a regular basis. In Arizona, bridges (20 feet or greater in length) are regularly inspected at 24-month intervals, or less if at a high risk location. Major culverts are typically inspected on 48-month intervals. Inspection funding might be available from the ADOT Bridge Group, which has published Local Public Agency bridge inspection guidelines.

Bridges on Tribal routes are summarized on **Table 7-1**.

Table 7-1: Bridges on Tribal Routes

Route Number	Section Number	Bridge Number	Description
Bunger Road (Route 27)	10	H580 – Pinal County	This is a 34-Ft Pipe Battery of 4 ft. Diameter Pipes on 3 ft. spacing. It is not in the National Bridge Inventory (NBI) or the BIA Bridge inventory.
Peters and Nall Road (Route 9016)	60	161H	It is currently shown in section 60 on Route 9016 as a proposed bridge section
Peters and Nall Road (Route 9016)	20	H150	This was formerly a BIA bridge and Route, but the route and right of way was transferred to the Tribe at their request. It used to be inspected by the BIA, but since it is now a Tribal Bridge the BIA no longer inspects it. It is on the National Bridge Inventory as NBI Number 0000000000H150.

Source: BIA Western Region, email of 5/12/2016

Street Lighting Projects

A nighttime review of street lighting needs was conducted in April 2016. The review identified locations where the light fixture was in place, but the luminaires needed replacement. In general, the Community is adequately lit. Locations of street lighting deficiencies, as well as the locations of all street lights, are summarized in **Figure 7-9**. Street lighting maintenance is performed under contract, and the observations in this report are provided for information purposes. At the July 2016 public meeting, there was a comment that more street lighting is needed between Vincent Street and Peters Street, as well as repair needs on Miguel Street between Pablo and Vincent Avenue.

As new development and road construction occurs in the Public Use and Commercial area, street lighting should be considered and incorporated into the design.

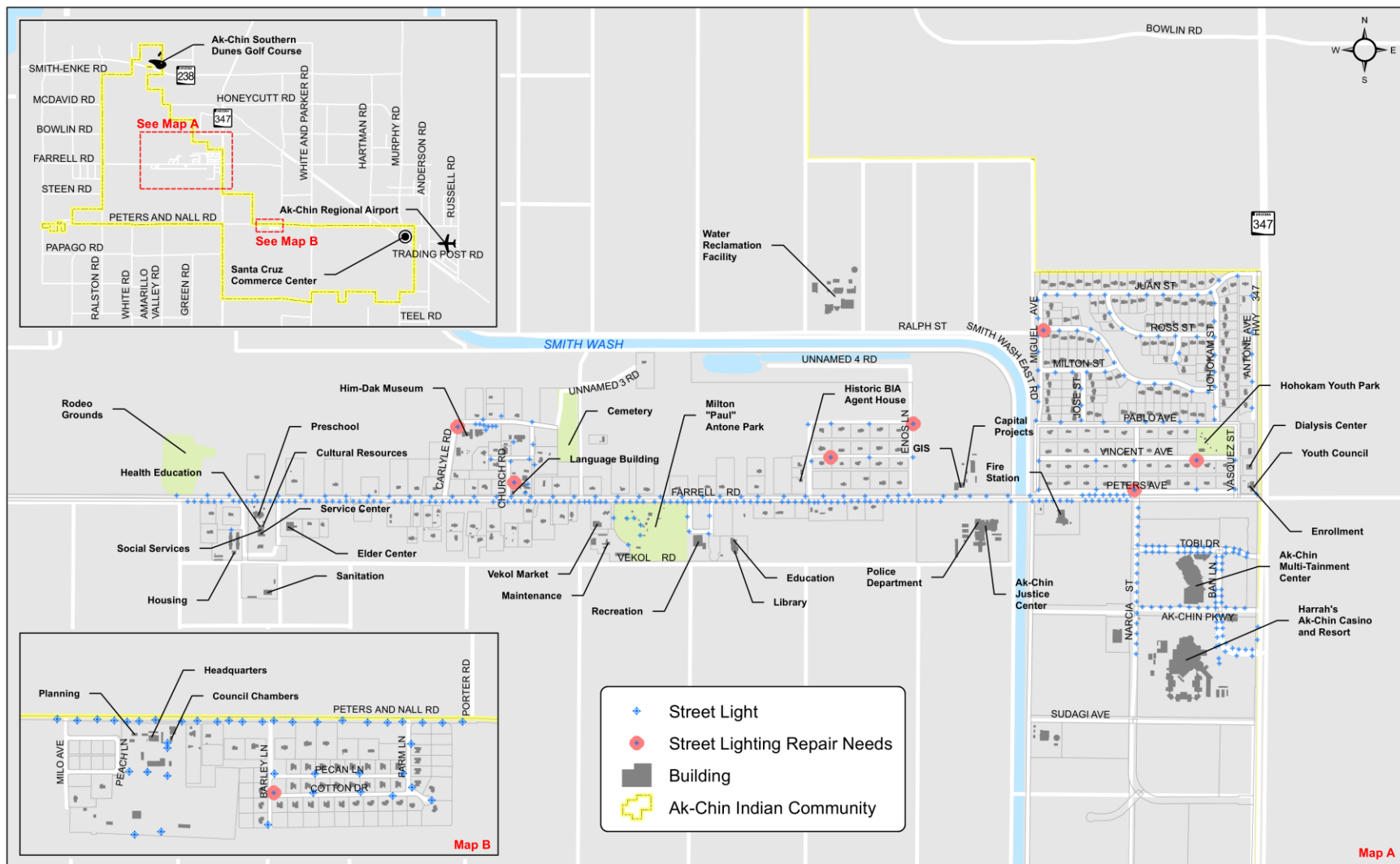


Figure 7-9: Street Lighting Repair Needs

Safety Projects

Development of a Tribal Transportation Safety Plan

It is strongly recommended that the Community develop a Tribal Transportation Safety Plan. Tribal Transportation Safety Plans are a tool used to identify and plan to address transportation risk factors that have a potential of leading to serious injuries or death. Safety plans may lead to implementation of a project or program, renewed efforts in an existing program, or further study of a roadway section (using an engineering study or Road Safety Audit).

A Tribal Transportation Safety Plan should demonstrate the safety concerns in an area and the prioritized strategies that will be explored to implement the plan. To the greatest extent possible the concerns identified by a safety plan should be based on crash history (data). Data can help funding organizations understand the needs and may even compel the funding of a project or program. The Tribal Transportation Safety Plan will be funded through BIA Planning Funds.

The Tribal Transportation Safety Plan should be consistent with the Arizona Strategic Highway Safety Plan.

Portable Speed Monitors on Farrell Road and Peters and Nall Road

Speed control is a very important concern in the Community. Speed monitors will help to make travelers aware of their speeds.

Placement of portable speed monitors are recommended near the beginning points of the 25 mph speed limit signing on Farrell Road and near the 35 mph speed limit signing on Peters and Nall Road.

Comments on speeding issues at the public meeting held for the project, included:

- Speed humps are needed on Vincent Avenue.
- Farm workers speed on the dirt roads.

These are potential areas for additional speed enforcement or placement of speed monitors.



Portable Speed Monitor

Source: Federal Highway Administration

Development of a Brochure and Articles on How to Drive in a Roundabout

A roundabout is planned as part of the Ak-Chin Parkway construction at Justice Center Drive. An education process will be required to inform the Community about driving through the roundabout. Some guidance from ADOT on driving a roundabout is shown in the text box at right.

A consideration may be to translate guidance on how to drive a roundabout into the O'odham language.

Educational Information about Pulling over in an Emergency on Farrell Road

Comments from the public indicated that there is confusion about where to safely pull over in an emergency on Farrell Road. Guidance is contained in the Traffic Code of the Ak-Chin Indian Community, which generally incorporates the traffic laws in the Arizona Revised Statutes.

Per these traffic laws, a driver should pull over to the right-hand edge of the roadway and stop. There have been questions whether a vehicle should pull over in the landscaped area adjacent to the road to allow emergency vehicles to pass more easily. Information on what to do in case of an emergency is provided below.

An excerpt from State Law (Arizona Revised Statute 28-775) regarding pulling over in an emergency (bolding added for emphasis) is provided as follows:

28-775. Authorized emergency vehicles:
approaching; following fire apparatus; passing
stationary vehicles; defensive driving schools;
driver license examinations

A. Except when otherwise directed by a police officer, **on the immediate approach of an authorized emergency vehicle that is equipped with at least one lighted lamp exhibiting a red or red and blue light or lens visible under normal atmospheric conditions from a distance of five hundred feet to the front of the vehicle and that is giving an audible signal by siren, exhaust whistle or bell, the driver of another vehicle shall:**

1. Yield the right-of-way.
2. **Immediately drive to a position parallel to and as close as possible to the right-hand edge or curb of the roadway clear of any intersection.**
3. **Stop** and remain in the position prescribed in paragraph 2 of this subsection until the authorized emergency vehicle has passed.

ADOT Guidance on How to Drive Around Modern Roundabouts

As you enter a roundabout, remember two key points:

1. **NEVER MERGE.** The right of way is observed at the yield sign. *Motorists already in the roundabout have the right of way.* You must slow down or stop to yield to traffic approaching from the left. Wait for a gap in traffic, then carefully proceed into the roundabout.

2. GO SLOW:

- *Slow down to 15-25 mph when entering.*
- *Let vehicles already circulating go ahead.*
- *Obey all one-way signs.*
- *Watch for pedestrians, bicyclists, emergency vehicles, and large vehicles.*

For multiple-lane usage, follow these guidelines depending on traffic patterns:

- *For right-hand turns, travel in the right-hand lane and use your turn signal.*
- *For left-hand turns, travel in the left-hand lane and use your turn signal.*
- *For continuing forward, remain in the same lane you entered.*
- *For missed exits, circle around the roundabout again.*

E. If a person who drives a vehicle approaches a stationary vehicle and the stationary vehicle is giving a signal by displaying alternately flashing lights or is displaying warning lights, the person shall do either of the following:

1. If on a highway having at least four lanes with at least two lanes proceeding in the same direction as the approaching vehicle, proceed with due caution and if possible, with due regard to safety and traffic conditions, yield the right-of-way by making a lane change into a lane not adjacent to that of the stationary vehicle.

2. If changing lanes would be impossible or unsafe, proceed with due caution and reduce the speed of the vehicle, maintaining a safe speed for road conditions.

Information on procedures to follow can be provided in several ways:

- Presentations at Community Meetings by the Community Safety Manager or Police or Fire Department representatives.
- Articles in the Ak-Chin O'odham Runner Newspaper.
- Flyers posted in public areas of the Community such as the Library, Police and Fire Departments, and Community Service Center.

Seat Belt Usage Programs

The Ak-Chin Indian Community Safety Manager has done a great job in raising awareness of the need to use seatbelts in the Community. The program includes signage to remind residents and visitors to wear seatbelts, visual reminders such as keychains, videos, purchase and distribution of highly visible seat belt covers, and other means. It is recommended that this program be continued.

Another aspect of increasing seatbelt usage are seatbelt laws. Seatbelt laws are divided into two categories: primary and secondary. Primary seatbelt laws allow law enforcement officials to ticket a driver or passenger for not wearing a seatbelt, without any other traffic offense taking place. Secondary seatbelt laws state that law enforcement officers may issue a ticket for not wearing a seatbelt only when there is another citable traffic infraction. To date, five Arizona tribes have enacted a primary seat belt law (Navajo, Tohono O'odham, Salt River, Fort McDowell, and San Carlos) and one tribe is on the verge of implementing it (Hopi). It is recommended that the Ak-Chin Community consider enacting a primary seat belt law.

Crash Data Reporting System

A recommendation is to for the Community to consider releasing crash data to ADOT for inclusion in the state crash database. The Ak-Chin Indian Community currently uses the state crash form. An advantage of using this system is that when applying for Highway Safety Improvement Program funds, tribes can more easily access the data and query the forms.

Access Management

Determining access management needs involved reviewing driveway locations. A driveway closure is recommended for the Farrell Road driveway of the Enrollment Office/Youth Council office at 16472 N. Maricopa Road, shown in **Figure 7-10**. The driveway on Farrell Road is only approximately 160 feet from the intersection of SR 347/Farrell Road, and an alternate driveway is located on Vasquez Street. The driveway closure would address safety concerns and could also potentially help to provide area for additional parking. As the Ak-Chin Parkway and Ak-Chin Circle roadway system is developed, the north leg of the Farrell Road/Narcia Street intersection will be redesigned to limit traffic to right-turn-in, right-turn-out traffic, which will limit cut-through traffic into the Greasewood Subdivision to the north.

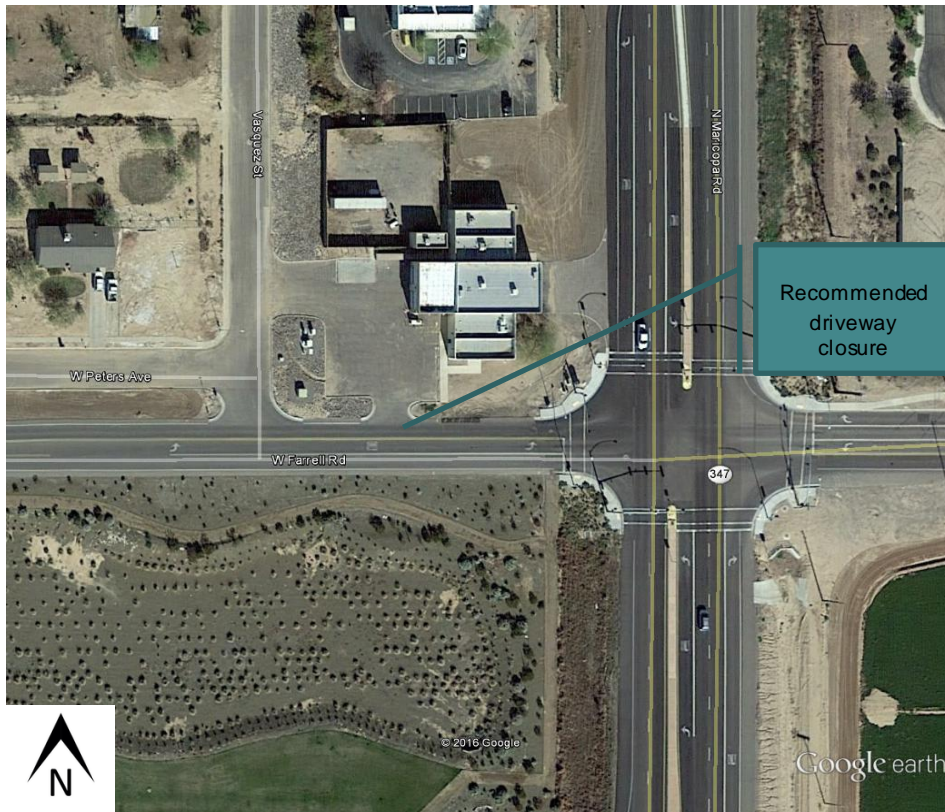


Figure 7-10: Recommended Driveway Closure at the Ak-Chin Indian Community Enrollment Office and Youth Council Office

Community Parking Lot Paving Improvements

Paving Gravel Parking Lots

Paving projects for gravel parking lots are recommended as part of this transportation plan. Gravel parking lots identified were:

- Health and Human Services, Health Education, and Preschool, 48227 W. Farrell Rd. (this area is planned to be paved in the short term)
- Ak-Chin Regional Airport, 32514 W. Bud Rd. (this is included as part of the Regional Airport Master Plan).

A comment noted at the public meeting was to provide larger vehicle parking spaces to accommodate trucks and sport utility vehicles when these areas are paved.

Repair Projects for Paved Parking Areas

Preventive maintenance to repair paved parking areas were identified at the following Community locations:

- Enrollment Office and Youth Council Office (could be completed in coordination with the recommended driveway closure)
- GIS and Capital Projects Department, 45710 W. Farrell Rd.
- Elder Center main parking lot, 48141 W. Farrell Rd.
- Public Works and Sanitation Department, 48141 W. Vekol Rd.
- Library, 46521 W. Farrell Rd.
- Housing area across from Service Center and Preschool
- Council Chambers, Planning and Development Department and other Community Departments located at 42507 Peters and Nall Rd

Paving Improvements

The Ak-Chin Indian Community has expressed a desire to develop a roadway maintenance plan. The study team assessed the condition of the paved roads and developed priorities for maintenance treatments, which are detailed in the Roadway Maintenance Plan, Chapter 8.

Other Projects

Community Entry Signage

Entry signage can improve awareness that persons are entering the Ak-Chin Indian Community, a sovereign nation. It is recommended that entry signage be provided at three locations initially:

- Farrell Road, east of Ralston Road
- Peters and Nall Road, east of SR 347
- Juan Street, west of SR 347 (this sign may be part of the upcoming Antone Avenue Reconstruction Project)



Paving on Antone Avenue showing raveling of the pavement edges and transverse cracking. This road is planned to be reconstructed.

Entry signage could also include messages such as “Entering Tribal Land - please obey our laws. Thank you,” which may help to emphasize tribal sovereignty.

The signage could possibly be designed using the type of stonework used for the bus stops, or could be designed by Community Members as part of a competition or by Tribal employees. Another option is to have Community Members vote on different sign designs. The signs should be designed with sufficiently large text so that they can be easily read in a moving vehicle traveling at the speed limit.

Farm Vehicle Signage on SR 347 near Peters and Nall Road

Several comments were received during the early phase of public outreach regarding the need to make drivers aware of farm vehicles crossing the road at Peters and Nall Road and SR 347. Although there are currently Farm Vehicles warning signs (W11-5) on SR 347, an option might be to install larger warning signs or add a supplemental warning plaque such as *Ahead* (W16-9P).



Farm Vehicle warning sign on SR 347, north of Peters and Nall Rd (looking southbound)

Functional Classification Update Needs

Potential federal functional classification changes are:

- Peters and Nall Road, from SR 347 to White and Parker Road – Revise from a rural local road to a minor collector road.
- Farrell Road, from Ralston Road to SR 347 – Revise from a rural local road to a minor collector road.

Updating the functional classification of roads to collector status or higher will enable the route to qualify for Federal Surface Transportation funding.

Study Recommendations

Road Design Manual for the Community

Although this study develops planning level and pre-scoped design guidelines and cross sections for several roadway types, a detailed roadway design manual would be a useful tool as road improvement projects continue in the Community. The Design Manual could also include guidelines for traffic impact studies, as new developments occur in the Community.

Summary

The proposed roadway improvements and improvement costs are summarized in **Table 7-2**. The improvement costs include design and construction costs. Estimated costs are rounded to the nearest hundred dollars. For planning level cost estimates more detailed costs must be determined when a project gets to the pre-scoping phase of development. More detail about the potential funding sources listed in **Table 7-2** is provided in **Chapter 13-Funding Sources for Transportation Projects**.

Table 7-2: Recommended Road and Intersection Projects

Street or Path Name	From	To	Project Length (Miles)	BIA Road Functional Classification	Existing Roadway or Site Conditions	Proposed Improvement	Total Cost (\$)	Existing or Proposed Development served by Road or Path	Potential Funding Sources
Roadway Projects									
Ak-Chin Parkway and associated Ak-Chin Circle Roads	SR 347	Narcia Street	0.30 mi.	4	Existing roadway serving parking areas	Construct two-lane roadway, new traffic signal and wash crossing	Cost estimate currently being developed by Ak-Chin Indian Community Capital Projects Department. The design cost is \$179,000	Will support development in the area of Harrah’s Ak-Chin Casino and the UltraStar Multi-tainment Center	Tribal Transportation Program funds Tribal funds Surface Transportation Block Grant Funds*
Ak-Chin Parkway	Smith Wash (west of Wash)	Cemetery Road	0.98 mi – Ak-Chin Parkway	4	No existing roadway	Construct a two-lane road with a roundabout and associated north-south road connections at Justice Center Road, Cemetery Road and a new Alternative D Road (extends between Farrell Rd and the Ak-Chin Parkway).	\$9,717,000	Will support Public Use Area development	Tribal Transportation Program funds Tribal funds Surface Transportation Block Grant Funds*
Ak-Chin Parkway	Narcia Street	Smith Wash (west of Wash)		4	No existing roadway		\$6,060,000	Will support Public Use Area development	Tribal Transportation Program funds Tribal funds Surface Transportation Block Grant Funds*
Ak-Chin Parkway – Long Range Improvements: (2030-time frame) <ul style="list-style-type: none">Two-lane facility between Cemetery Road and Vekol WashWiden to a four-lane facility between SR 347 and Cemetery Rd.North-south two-lane connection to Farrell Road east of the Vekol Wash	Cemetery Road	Vekol Wash	<ul style="list-style-type: none">Cemetery Road to Vekol Wash – 1.38 milesSR 347 to Cemetery Road – 1.52 milesNorth-south connection road – 0.38 miles	4	Undeveloped between Cemetery Road and Vekol Wash	<ul style="list-style-type: none">Ak-Chin Parkway constructed as a two-lane 35 mph facility between Cemetery Road and Vekol WashAk-Chin Parkway is widened to a four-lane facility between SR 347 and Cemetery Road.North-south two-lane connection between AK-Chin Parkway to Farrell Road east of the Vekol Wash.	<ul style="list-style-type: none">Ak-Chin Parkway constructed as a two-lane 35 mph facility between Cemetery Road and Vekol Wash - \$6,986,700Ak-Chin Parkway widened to a four-lane facility between SR 347 and Cemetery Rd.- \$3,729,200North-south two-lane connection from Farrell Road to the Ak-Chin Parkway, east of the Vekol Wash - \$1,136,300	Will support Public Use Area development	Tribal Transportation Program funds Tribal funds Surface Transportation Block Grant Funds*
Ak-Chin Parkway Long Range improvements (beyond 2035-time frame) <ul style="list-style-type: none">Ak-Chin Parkway is constructed as a two-lane 35 mph facility between Vekol Wash and Ralston RoadAk-Chin Parkway is widened to a four-lane facility between Vekol Wash and Cemetery Road.	Vekol Wash	Ralston Road	<ul style="list-style-type: none">Vekol Wash to Ralston Road – 1.14 milesVekol Wash and Cemetery Road - 1.38 miles	4	Undeveloped between Vekol Wash and Ralston Road	<ul style="list-style-type: none">Ak-Chin Parkway is constructed as a two-lane 35 mph facility between the Vekol Wash and Ralston Road.Ak-Chin Parkway is widened to a four-lane facility between the Vekol Wash and Cemetery Road.	<ul style="list-style-type: none">Ak-Chin Parkway is constructed as a two-lane 35 mph facility between the Vekol Wash and Ralston Road - \$8,337,600Ak-Chin Parkway is widened to a four-lane facility between the Vekol Wash and Cemetery Road- \$3,462,000	Will support Public Use Area development	Tribal Transportation Program funds Tribal funds Surface Transportation Block Grant Funds*

Street or Path Name	From	To	Project Length (Miles)	BIA Road Functional Classification	Existing Roadway or Site Conditions	Proposed Improvement	Total Cost (\$)	Existing or Proposed Development served by Road or Path	Potential Funding Sources
Pecan Subdivision Streets	N/A	N/A	N/A	3	Currently under construction	Construct residential streets	\$457,100	New subdivision, which will be included in the BIA Road Inventory	Tribal Transportation Program funds Tribal funds
Ak-Chin Circle Roads	N/A	N/A	N/A	3	Komkcud Avenue – undeveloped W. Narcia Circle — undeveloped	Construct two-lane roadways, where needed to support development	TBD		Tribal Transportation Program funds Tribal funds
Carlyle Road Improvement project	Farrell Rd	Eco Museum Road	0.33 miles	3	2-lane roadway	Slurry seal and striping	\$104,500	Will provide lane guidance for drivers and improve road surface to the Ak-Chin Him Dak Eco-Museum.	Tribal Transportation Program funds Tribal funds
Antone Avenue Reconstruction and pathway	Juan St	South terminus of Antone Ave	0.32 miles	3	2-lane roadway	Road reconstruction and pathway	\$529,500	Will improve road condition and provide a pathway connection between Antone Ave and SR 347.	Tribal Transportation Program funds Tribal funds
Intersection Projects									
Ralph Street / Smith Wash Road	N/A	N/A	N/A	3	Stop sign controlled intersection	Paint stop bars at intersection and install speed limit signs (2) on Ralph Street.	\$2,600	Water Reclamation Facility	Tribal Transportation Program funds Tribal funds
Maricopa-Casa Grande Road / Anderson Road	N/A	N/A	N/A (110 foot turn lane assumed)	2	Two-lane undivided highway (note – by others)	Construct 110’ left turn bay	\$216,000	This would provide safer left turn access	Pinal County funds Surface Transportation Program funds Highway Safety Improvement Program funds Tribal Transportation Program funds**
Maricopa-Casa Grande Highway / Russell Road	N/A	N/A	N/A (110-foot turn lane assumed)	2	Two-lane undivided highway (note – by others)	Construct 110’ left turn bay	\$216,000	This would provide safer left turn access to the Ak-Chin Regional Airport	Pinal County funds Surface Transportation Program funds Highway Safety Improvement Program funds Tribal Transportation Program funds**
SR 347 / Papago Road	N/A	N/A	N/A	2	(note – the jurisdiction of SR 347 is ADOT)	Advance street name signs are too close to the intersection. Remove One-Way sign on SR 347	\$2,000		ADOT funding Surface Transportation Program funds Tribal Transportation Program funds**

Street or Path Name	From	To	Project Length (Miles)	BIA Road Functional Classification	Existing Roadway or Site Conditions	Proposed Improvement	Total Cost (\$)	Existing or Proposed Development served by Road or Path	Potential Funding Sources
Drainage Projects									
Ralph Street	Smith Wash Road	Approximately 1400 feet west of intersection	0.3	3	Erosion and sediment on the south side of the roadway	Erosion control rolls, rip-rap and header (flush curb)	\$194,400	Water Reclamation Facility	Tribal Transportation Program funds Tribal funds
Bridge Projects									
Vekol Wash Bridge at Farrell Road	N/A	N/A	Assume 7,200 square foot bridge	4	At-grade wash crossing	Develop PS & E and construct a box culvert and approaches at existing dip section	\$1,353,600	This would improve traffic flow and safety on Farrell Road during the monsoon season	Tribal Transportation Program funds Tribal funds
Bridge Inspection Program	N/A	N/A	N/A	N/A	N/A	Bridge inspections	N/A	Community in general	ADOT Bridge inspection program Tribal Transportation Program funds
Street Lighting Projects									
Repair street lighting at 8 neighborhood locations.	N/A	N/A	N/A	3	Existing street light was not operating during field review.	Maintenance repairs of street lighting	Repairs are conducted under an annual contract – conducted on an ongoing basis		Tribal Transportation Program funds Tribal funds
Safety Projects									
Portable speed monitors	N/A	N/A	N/A	4	N/A	Purchase four portable speed monitors on trailers to help with speed control	\$60,000	Residential and Community facilities along Farrell Road	Tribal Transportation Program funds Highway Safety Improvement Program funds Tribal Transportation Safety Program Funds
Development of brochure / articles on how to drive in a roundabout	N/A	N/A	N/A	N/A	N/A	Educational material to explain how to drive through a roundabout, and would include development of a handout, and news articles	\$2,500		Tribal funds Tribal Transportation Safety Program Funds Governor's Office of Highway Safety Funds
Continuation of Seat Belt Program through TOSHA	N/A	N/A	N/A	N/A	N/A	Continuation of seat belt encouragement program (FY2017-2020)	\$20,000		Tribal funds Tribal Transportation Program Funds Governor's Office of Highway Safety Funds
Tribal Transportation Safety Plan	N/A	N/A	N/A	N/A	N/A	A safety plan can help justify projects to qualify for Tribal Transportation Safety funding. There is an application to apply for the funding to do a safety plan.	\$12,500		Tribal Transportation Program Safety Funds Tribal Transportation Program Funds Governor's Office of Highway Safety Funds

Street or Path Name	From	To	Project Length (Miles)	BIA Road Functional Classification	Existing Roadway or Site Conditions	Proposed Improvement	Total Cost (\$)	Existing or Proposed Development served by Road or Path	Potential Funding Sources
Access Management									
Driveway closure on Farrell Road at Enrollment Office / Youth Council.	N/A	N/A	N/A	4	The driveway on Farrell Road is only approximately 160 feet from the intersection. There is an alternate driveway on Vasquez Street	Close driveway on Farrell Road – it is too close to the intersection of SR 347/Farrell Road. There is an alternate driveway access on Vasquez Street	\$10,600	ACIC Enrollment Office and Youth Council office	Tribal funds Tribal Transportation Program Funds Surface Transportation Program funds*
Community Parking Lot Paving Improvements									
Pave gravel parking lots	Health and Human Services, Health Education and Preschool	N/A	N/A	N/A	Currently these locations have gravel parking lots	Pave parking lots	Health and Human Services, Health Education and Preschool - \$136,100	Health and Human Services, Health Education and Preschool - \$136,100	Tribal Transportation Program funds Tribal funds
Perform preventive maintenance to repair cracks at parking lot locations	<ul style="list-style-type: none"> Enrollment Office and Youth Council (also the place where we are closing a driveway) GIS and Capital projects Elder Center main parking lot Public Works and Sanitation Library Housing area across from Service Center and Preschool Council Chambers, Planning Department 	N/A	N/A	N/A	Currently these locations have paved parking lots. Typically, cracking was observed, that needs repairs	Crack sealing parking lots	Enrollment Office and Youth Council (also the location recommended for a driveway closure)- \$13,400 GIS and Capital projects – \$17,400 Elder Center main parking lot- \$14,600 Public Works and Sanitation Dept.- \$300,000 Library - \$42,900 Housing area across from Service Center and Preschool - \$25,100 Council Chambers, Planning Department- \$49,600	<ul style="list-style-type: none"> Enrollment Office and Youth Council (also the place where we are closing a driveway) GIS and Capital projects Elder Center main parking lot Public Works and Sanitation Library 	Tribal Transportation Program funds Tribal funds
Other Projects									
Community entry signs at three locations	<ul style="list-style-type: none"> Farrell Road, east of Ralston Road Juan Street, west of SR 347 Peters and Nall Road, east of SR 347 	N/A	N/A	N/A	No Community entry signs presently exist	Place three entry signs at main entry points into the Community to let people know they are entering a sovereign nation and could potentially include messaging such as “all laws strictly enforced” Locations anticipated to be: <ul style="list-style-type: none"> Farrell Road, east of Ralston Road 	\$75,000	The signage will serve as a welcome to the Community and a reminder that persons are entering a sovereign nation	Tribal funds Tribal Transportation Program funds

Street or Path Name	From	To	Project Length (Miles)	BIA Road Functional Classification	Existing Roadway or Site Conditions	Proposed Improvement	Total Cost (\$)	Existing or Proposed Development served by Road or Path	Potential Funding Sources
						<ul style="list-style-type: none">Juan Street, west of SR 347Peters and Nall Road, east of SR 347			
Farm Vehicle Signage on SR 347 near Peters and Nall Road	N/A	N/A	N/A	2	Farm Vehicle signs exist at this larger, but a larger warning sign with a supplemental plaque may be more visible to a driver.	Replace farm vehicle signage with larger signs	\$2,500	Agricultural development along Peters and Nall road area	ADOT funds

* Note: If the Ak-Chin Parkway or any other roads in this listing are classified on the FHWA system as collectors or arterials, they will be eligible for Surface Transportation Block Grant Program funding.

** Note: One unique feature of Tribal Transportation Program funds is that they can be used as the match for other Federal funds that require a match.

7.2. PEDESTRIAN AND BICYCLE IMPROVEMENTS

Pedestrian and bicycle improvements are summarized in **Table 7-3** and are shown graphically in **Figure 7-11**. Improvements developed to address needs were:

- Rectangular Rapid Flash Beacons (RRFB) at key pedestrian crossing locations – These user-actuated amber LED lights supplement warning signs at unsignalized intersections or mid-block crosswalks have been designed on Farrell Road Pathways project and will be activated when pedestrian demand warrants. Pedestrians can activate them manually by a push button or passively by a pedestrian detection system. Rectangular rapid flash beacons use an irregular flash pattern that is like emergency flashers on police vehicles. These are a lower-cost alternative to traffic signals and hybrid signals that are shown to increase driver yielding behavior at crosswalks significantly when supplementing standard pedestrian crossing warning signs and markings.



Rectangular Rapid Flash Beacon

Source:

http://mutcd.fhwa.dot.gov/resources/interim_approval/ia11/stpete/rsburgrpt/intro.htm

- Proposed new pedestrian pathways in the following areas:
 - Antone Avenue, between Juan Street and Farrell Road – This pathway will assist in reducing cut-through pedestrian traffic through the Greasewood subdivision.
 - West side of loop road surrounding the Preschool, Clinic, and the Community Service Center – The pathways could be included in coordination with paving improvements to the parking lot in this area.
 - Segments of Church Road and Peters Avenue.
 - Historic roads to pedestrian paths – historic roadways, identified by the Him-Dak Museum Director, were suggested as potential locations for Community pathways. In addition to providing a walking path, interpretive information about the history of the historic roads and the area can be included in the design.
 - Trails and pathways recommended in the Ak-Chin Indian Community Transit and Non-Motorized Transportation Study (2011), including the planned Ak-Chin Parkway.

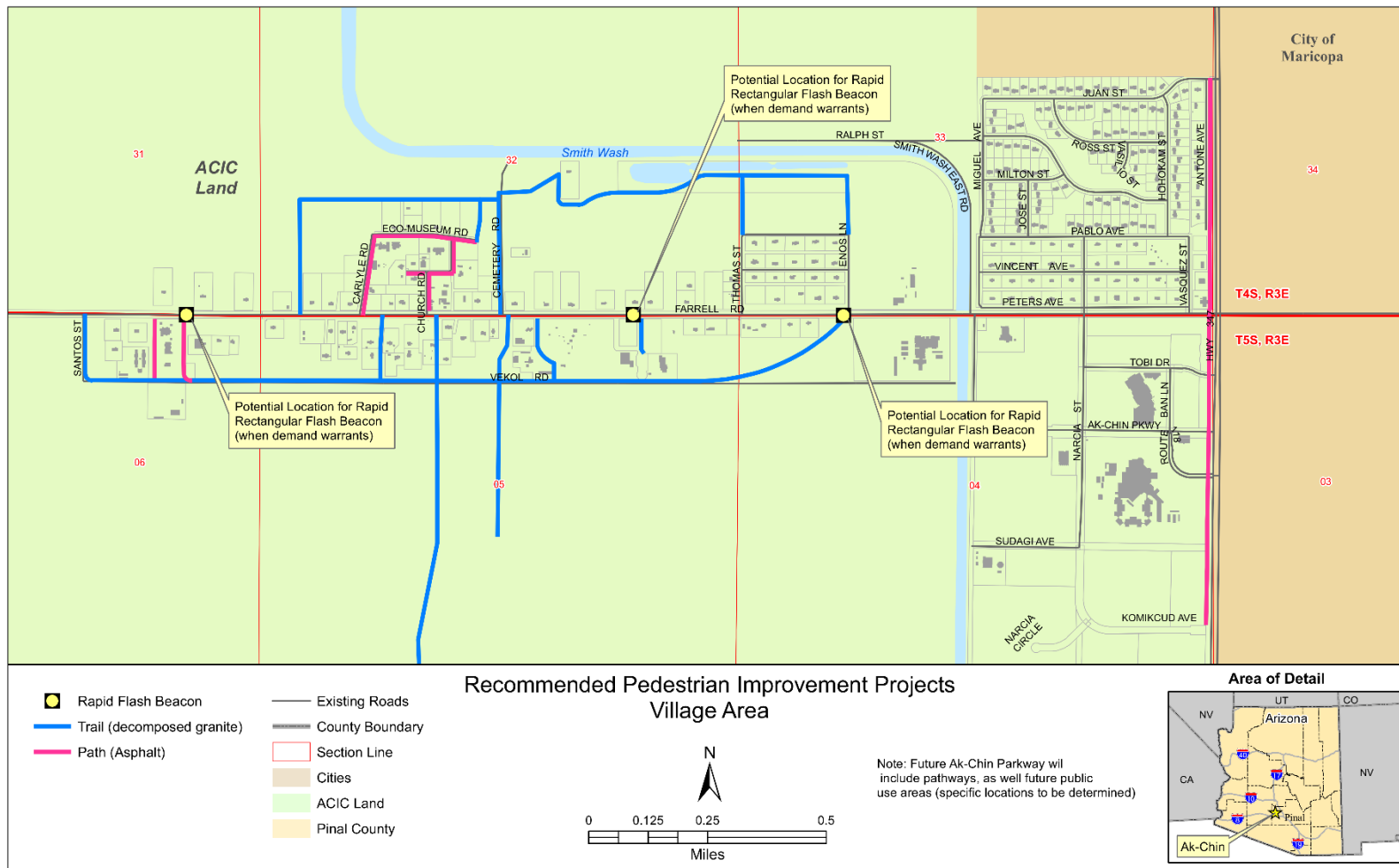


Figure 7-11: Recommended Pedestrian Improvements

Table 7-3: Proposed Pedestrian and Bicycle Improvements

Street or Path Name	From	To	Project Length (Miles)	Existing Roadway or Site Conditions	Proposed Improvement	Total Estimated Cost (\$)	Existing or Proposed Development Served by Road or Path	Potential Funding Sources
Church Road, and Peters Avenue Pathways	Farrell Road	Eco-Museum Rd	0.26	Two-lane paved road, uncurbed	5-foot-wide Decomposed Granite Paths	\$57,200	This project will provide pathways in this area, to provide access to the Him-Dak Museum, Church, and residences	Tribal Transportation Program funds Tribal funds Federal Transportation Alternatives funds
Library Pathway	Library	Farrell Road	0.1	Two-lane paved road, uncurbed	5-foot-wide Decomposed Granite Path	\$33,000	This project will provide a connection between the Library and the pathway on Farrell Road	Tribal Transportation Program funds Tribal funds
Preschool Pathway	Parking area	Farrell Road	0.1	Two-lane paved driveway, uncurbed	5-foot-wide Decomposed Granite Path	\$33,000	This project will provide a pedestrian connection to Farrell Road from the Preschool, Clinic, and Housing areas	Tribal Transportation Program funds Tribal funds Federal Transportation Alternatives funds
Antone Avenue Pathway / Road reconstruction	Juan Street	Farrell Road	0.5	Two-lane paved road, uncurbed	Pathway and paving improvements from Juan Street to Farrell Rd. The pathway would be located between Antone Avenue and SR 347.	\$529,500 (includes road reconstruction)	This project will assist in reducing cut-through pedestrian foot traffic through the Greasewood Subdivision. It also includes road reconstruction of Antone Avenue	Tribal Transportation Program funds Tribal funds Federal Transportation Alternatives funds
Farrell Road	N/A	N/A	N/A	Locations are at pedestrian crosswalks	Rectangular Rapid Flashing Beacon – 3 locations	\$67,000	This will assist with pedestrian crossings at night- when pedestrian demand warrants	Highway Safety Improvement Program Tribal Transportation Program Safety funds Tribal funds Tribal Transportation Program funds

Street or Path Name	From	To	Project Length (Miles)	Existing Roadway or Site Conditions	Proposed Improvement	Total Estimated Cost (\$)	Existing or Proposed Development Served by Road or Path	Potential Funding Sources
								Surface Transportation Block Grant funds* Federal Transportation Alternatives funds
Pathways – various locations	N/A	N/A	6.2		6-foot-wide decomposed Granite Pathways	\$923,900	Various	Tribal Transportation Program funds Tribal funds Federal Transportation Alternatives funds

*Note: This assumes that Farrell Road will be reclassified as a minor collector in the FHWA functional classification system.

7.3. TRANSIT IMPROVEMENTS

The Ak-Chin Indian Community is in the process of implementing a Community Transit system, which is well underway. The transit system will operate on a deviated fixed route, which means the service will operate on a fixed route but can detour from the route for pick-ups or drop-offs if they are scheduled in advance, and within a certain distance from the fixed route. The fixed route has 25 stops and takes one hour to complete. Riding the fixed route will be free, but there will be a fee to deviate from the route. Patrons will need to call ahead to schedule a deviated route trip. Other fixed-route stops are being considered, such as within the Harrah's Ak-Chin Casino expansion area.

The service will operate with two 14-passenger buses, which have been purchased. It is anticipated that the service will be operational in fall 2016. The Transit Department is in the process of acquiring equipment such as GPS tracking system and communications equipment. As the transit system evolves, future transit projects will be identified.

Potential future funding sources for transit include the Federal Transit Administration 5311c program (Tribal Transit funds) and Federal Transit Administration 5311 program (Rural Transit Funds). These funds can be used simultaneously. Section 5311c funds should be maximized as they require no matching funds. Awards are formula based and determined by the number of miles driven by the system.

7.4. AVIATION ACCESS IMPROVEMENTS

Future airport roadway, access, and parking improvements were based on information from the Ak-Chin Regional Airport Master Plan (2015), which emphasizes that the development of the airport should be based on actual demand for facilities rather than a fixed timeframe. This allows the airport flexibility to accelerate or decelerate development based on current conditions; however, the plan is intended for a 20-year planning period.

Since Bud Road is used by both aircraft and vehicles, Ak-Chin Regional Airport Master Plan recommends that a southeast side access road be developed to segregate vehicle traffic from aircraft traffic. The recommended location for the southeast side access road is entering from the north side of West Trading Post Road and running north along the west side of the industrial park development parcels located on the southeast corner of Ak-Chin property. This will avoid having airport traffic enter through West Bud Road, which is also used by aircraft based in Saddleback Industrial Park.

The taxiway serving Bud Road is recommended to be reconfigured including the construction of a new taxiway running north-south to connect Bud Road with the existing parallel taxiway. This reconfigured access from Bud Road to the airport will help alleviate the mixing of automobile and aircraft traffic.

A future primary airport access road serving the west side of the airport is recommended as west side airport and airpark development occurs. The access road on the west side of the airport is envisioned to be the main access to the airport in the future. The west side access road would enter the airport from North Anderson Road connecting to points west including the Bunger Property and the Santa Cruz Commerce Center.

Anderson is a current access to the airport along with Russell and likely to become more significant in the future with the airport's west side development. The East-West Corridor Study (Jacobs) "allows" traffic signals at both Anderson and Russell. However, due to Anderson's continuity to the south (greater turning movements), it is the likely candidate to push the signal warrant before Russell. If Anderson becomes signalized, moving the current airport signing to the signal would be prudent for safety reason.

Parking lot improvements are included in the Airport Master Plan. The parking lot is planned to be paved and potentially covered and lighted. Future automobile parking would also be incorporated into future hangar development areas to provide parking for airport users near their hangars and aircraft.

A comment during the earlier phase of the study was to acquire a “loaner” car so that when pilots land at the airport, they would have some means of transportation via car. An alternative may be to coordinate for the use of shuttle buses that have been ordered for the Recreation, Library, and Education Departments. The buses may be expanded for use by other departments or Community enterprises.

Ak-Chin Regional Airport Master Plan recommendations related to circulation and access are summarized in **Table 7-4**.

7.5. AIRSTRIP IMPROVEMENTS FOR FARMING

Discussions with the Ak-Chin Indian Community Farm Manager indicated that a transportation need is repaving of the airstrip that is used for crop-dusting airplanes. An airstrip paving project is included in this plan as a recommendation.

Table 7-4: Airport Master Plan 20-Year Development Plan Summary for Roadway and Parking Projects

Phase 1 Roadway and Parking Projects		Cost	Potential Funding Sources
A7	Northeast Roadway Development	\$374,000	Arizona Aviation Fund Federal Airport Improvement Program
A9	Airport Access Road	\$201,000	Arizona Aviation Fund Federal Airport Improvement Program
Total Cost, Phase 1 Roadway and Parking Projects Cost		\$575,000	
Phase II Roadway and Parking Projects			
B11	ARFF Parking and Roadway Development	\$593,000	Arizona Aviation Fund Federal Airport Improvement Program
B17	Parking and Roadway Development	\$110,000	Arizona Aviation Fund Federal Airport Improvement Program
B25	Southeast Parking and Roadway Development	\$300,000	Arizona Aviation Fund Federal Airport Improvement Program
B26	Southwest Parking and Roadway Development	\$382,000	Arizona Aviation Fund Federal Airport Improvement Program
B29	West Peters and Nall Road Development	\$710,000	Arizona Aviation Fund Federal Airport Improvement Program
B30	North Anderson Road Development	\$590,000	Arizona Aviation Fund Federal Airport Improvement Program
B31	Northeast Roadway Development	\$100,000	Arizona Aviation Fund Federal Airport Improvement Program
Total Phase II Roadway and Parking Projects Cost		\$ 2,785,000	
TOTAL ROADWAY AND PARKING PROJECTS COST		\$ 3,360,000	

Note: FY 2014 Dollars for planning purposes only, depicts FAA funding eligibility. Actual development will be dependent on FAA funding availability. FAA Funding for all eligible projects may not be available. Does not include ongoing planning, environmental, maintenance, or operational costs.

8. ROADWAY MAINTENANCE PLAN

8.1. MAINTENANCE NEEDS ASSESSMENT

In early 2016, a visual condition survey was conducted to evaluate the surface condition of the roads within the Community. The maintenance recommendations were developed in accordance with BIA guidelines for rating wearing surfaces. The following pavement distresses were evaluated and categorized:

- Longitudinal cracking
- Transverse cracking
- Alligator cracking
- Depressions
- Rutting
- Corrugations
- Raveling
- Bleeding
- Patching
- Other

Each observed distress was rated on a scale from 0 to 5, generally as follows:

- Rating 4-5 – Very Good
- Rating 3-3.9 – Good
- Rating 2-2.9 – Fair
- Rating 1-1.9 – Poor
- Rating 0.1-0.9 – Very Poor (no paved roads were rated as very poor)
- Rating 0 – No surface/unimproved

The ratings in each of the categories that were observed were then averaged, and multiplied by 20 to convert to a pavement wearing surface rating for use in the BIA Road Inventory.

Preventive maintenance activities that should be considered by the Ak-Chin Indian Community include, but are not limited to, crack sealing, patching, and surface treatments, such as chip sealing.

Resurfacing treatment assumes a two-inch overlay of the asphalt concrete.

Surfing 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.

The maintenance recommendations for the roadway network were prioritized based on the pavement distresses present and the functional classification of each roadway segment, as summarized in **Table 8-1**.

A number of roads are in good condition; however, these should be monitored in the future for wear. It is recommended that a lump sum be allocated annually in future years to cover pavement renewal.

Table 8-1: Maintenance Actions and Prioritization Criteria

1. Overall Rating	Critical Distress Present			Maintenance Action and Priority	Time Frame for Initial Maintenance Treatment
	Alligator Cracking	L&T Cracking	Raveling		
	Severity	Severity	Severity		
BIA Functional Classification of 1 - 3					
0 - 2	N/A	N/A	N/A	Resurface - Priority #1	Short
2.1 - 3.5	1 - 3	1 - 3	1 - 3	Preventive maintenance - Priority #1	Short
2.1 - 3.5	0 - 2.9	0 - 2.9	0 - 2.9	Resurface - Priority #2	Mid
3.6 - 5	N/A	N/A	N/A	Do Nothing initially- monitor for maintenance needs	
BIA Functional Classification of 4 - 5					
0 - 0.5	N/A	N/A	N/A	Resurface - Priority #1	Short
1	N/A	N/A	N/A	Resurface - Priority #2	Mid
1.1 - 3.5	1 - 3	1 - 2	1 - 2	Resurface - Priority #3	Mid
	3 - 4	3 - 4	3 - 4	Preventive maintenance - Priority #2	Mid
	4 - 5	4 - 5	4 - 5	Preventive maintenance - Priority #3	Mid
3.6 - 5	N/A	N/A	N/A	Do Nothing initially- monitor for maintenance needs	

Road segments that were evaluated as Priority 1 resurfacing or preventive maintenance needs are shown in **Figure 8-1**. Maintenance activities on these roads are included in the short-term Transportation Improvement Program.

Roads that are classified as Priority 2 are included in the mid-term program of improvements. It is also recommended that a lump sum be provided for annual maintenance to address maintenance issues on an ongoing basis. These road segments are shown in **Figure 8-2**. There were no Priority 3 road segments identified.

Long-term maintenance needs should also be addressed through an annual maintenance budget. The detailed evaluation and prioritization of each road segment is shown in **Table 8-2**.

A summary of anticipated maintenance costs is:

- Short-range projects (FY 2016-2020), Priority 1 projects – \$922,600, or approximately \$184,520 annually.
- Mid-range projects (FY 2021-2025), Priority 2 projects – \$3,280,543 or approximately \$656,108 annually.
- Long-range projects (2026-2035) – ongoing maintenance, assume \$300,000 per year, or 3,000,000 over 10-year period.

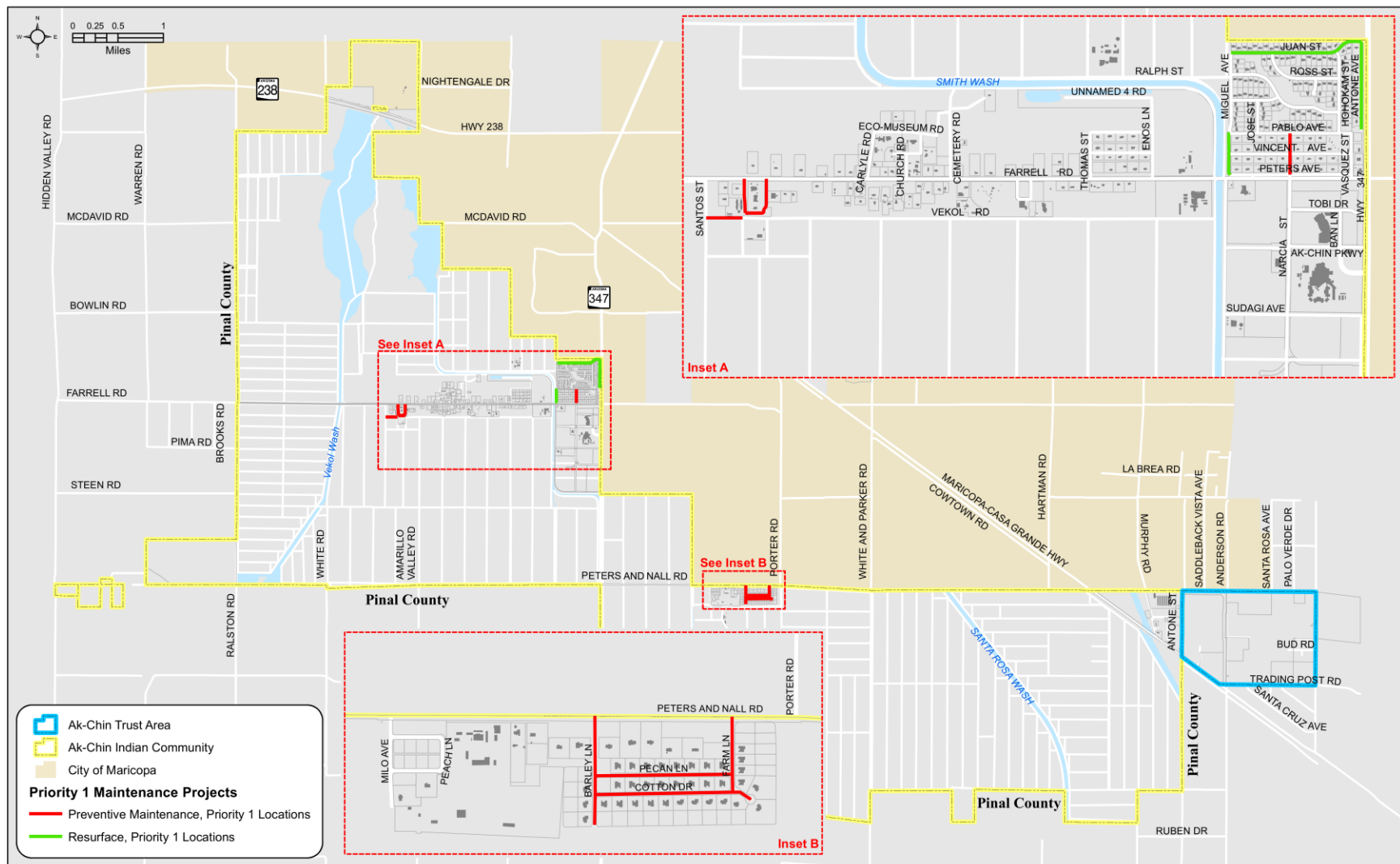


Figure 8-1: Priority 1 Maintenance Needs

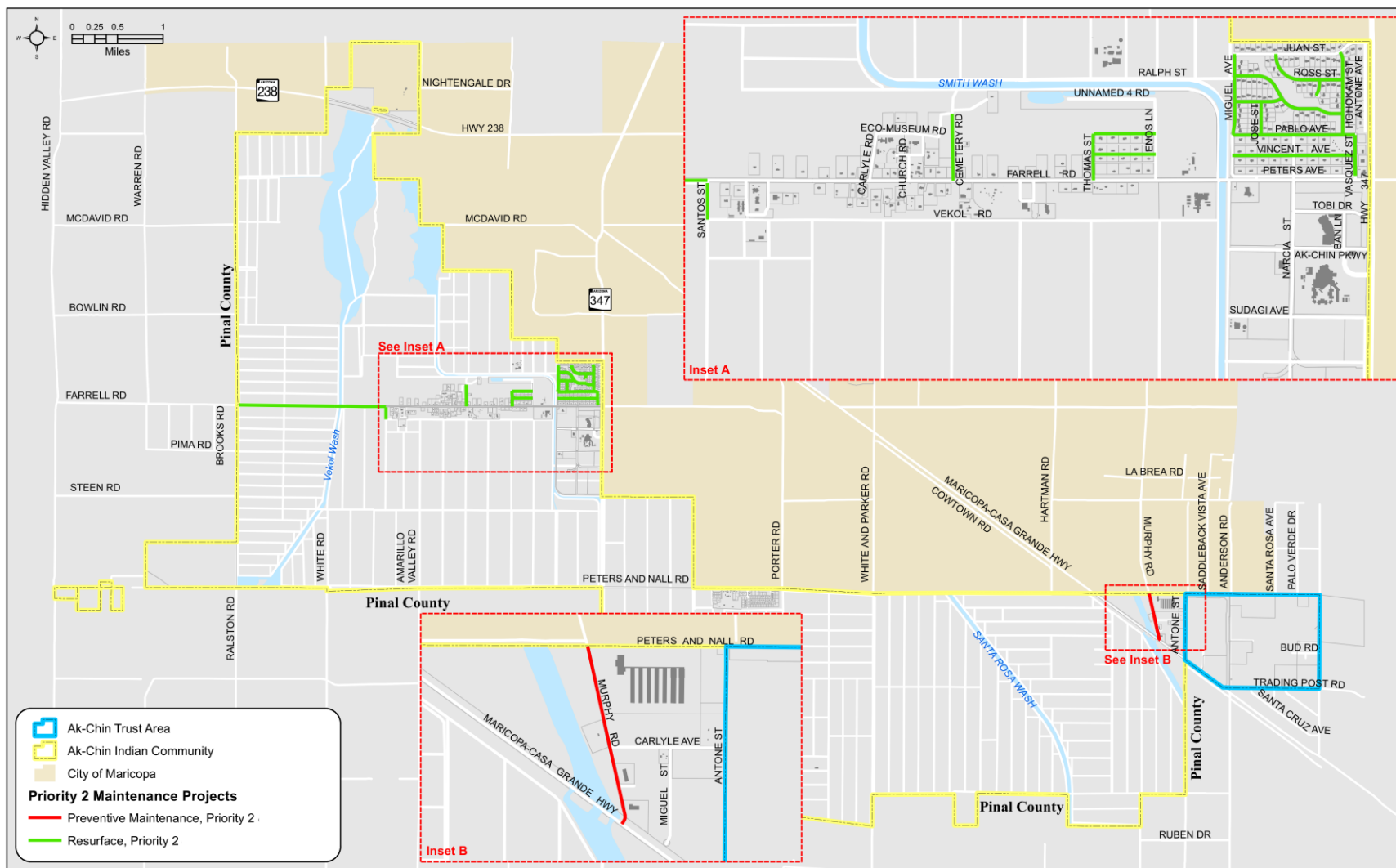


Figure 8-2: Priority 2 Maintenance Needs

Table 8-2: Pavement Ratings and Maintenance Prioritization

Street Name	Route Number	Length (miles)	Surface Width	Section Number	Begin Street	End Street	BIA Functional Class	Area (Sq. Ft.)	Average Pavement Rating	Recommendation	Total Project Cost (\$)	Time frame
Barley Ln.	104	0.20	28	40	south end	Peters and Nall Rd	3	29,568	3.0	Prev. Maintenance - Priority #1	39,917	Short
Beehive Ln.	104	0.30	28	10	Barley Lane	Farm Ln	3	44,352	3.0	Prev. Maintenance - Priority #1	59,875	Short
Bunger Rd	27	0.10	19	30	0.1 mi. north of bridge to	North end of Bunger Rd	3	10,032	2.2	Prev. Maintenance - Priority #1	13,543	Short
Elder Loop	101	0.1	21	50	Farrell Rd	0.1 mile south on loop	3	11,088	3.0	Prev. Maintenance - Priority #1	14,969	Short
Elder Loop	101	0.1	23	40	0.1 mile south on loop	Farrell Rd	3	12,144	3.2	Prev. Maintenance - Priority #1	16,394	Short
Farm Ln.	104	0.20	28	20	Beehive Ln	Peters and Nall Rd	3	29,568	3.0	Prev. Maintenance - Priority #1	39,917	Short
Narcia St.	109	0.2	29	20	Farrell Rd	Pablo Ave	3	30,624	3.1	Prev. Maintenance - Priority #1	41,342	Short
Pecan Ln.	104	0.30	28	30	Barley Lane	Farm Ln	3	44,352	3.0	Prev. Maintenance - Priority #1	59,875	Short
Vekol Rd.	120	0.1	20	10	west end	0.1 mile east of end	3	10,560	3.0	Prev. Maintenance - Priority #1	14,256	Short
Murphy Rd	93	0.50	38	10	Maricopa Casa-Grande Highway	Peters and Nall Road	5	100,320	3.4	Prev. Maintenance - Priority #2	135,432	Mid
Antone Ave.	25	0.30	28	10	Juan St	south end of Antone	3	44,352	1.0	Resurface - Priority #1	N/A- included in Antone Ave reconstruction project	Short

Street Name	Route Number	Length (miles)	Surface Width	Section Number	Begin Street	End Street	BIA Functional Class	Area (Sq. Ft.)	Average Pavement Rating	Recommendation	Total Project Cost (\$)	Time frame
Bunger Rd	27	0.10	56	20	Bridge H580	0.1 north of Bridge	3	29,568	2.0	Resurface - Priority #1	133,056	Short
Juan St.	107	0.5	30	80	Miguel Ave	SR 347	3	79,200	1.5	Resurface - Priority #1	356,400	Short
Miguel Ave.	109	0.2	28	10	Peters Ave	Pablo Ave	3	29,568	1.1	Resurface - Priority #1	133,056	Short
Farrell Road	14	1.10	24	10	Ralston Road	Vekol Wash	4	139,392	1.8	Resurface - Priority #2	627,264	Mid
Farrell Road	14	0.49	23	30	Bridge 160H	Santos St	4	59,506	2.8	Resurface - Priority #2	267,775	Mid
Vasilio St.	107	0.1	29	30	south end	Ross St	3	15,312	1.5	Resurface - Priority #2	68,904	Mid
Carlyle Rd	103	0.20	22	10	Farrell Rd	Ecomuseum Road	3	23,232	2.7	Resurface - Priority #2	104,544 (Included in a separate striping and resurfacing project)	Mid
Hohokam St.	107	0.3	29	40	Pablo Ave	Juan St	3	45,936	2.5	Resurface - Priority #2	206,712	Mid
Jose St.	107	0.1	29	20	Pablo Ave	Milton St	3	15,312	2.7	Resurface - Priority #2	68,904	Mid
Miguel Ave.	107	0.3	28	10	Pablo Ave	Juan St	3	44,352	2.8	Resurface - Priority #2	199,584	Mid
Milton St.	107	0.2	29	50	Miguel Ave	Ralph St	3	30,624	2.8	Resurface - Priority #2	137,808	Mid
Pablo Ave.	109	0.40	29	60	Miguel Ave	Vasquez St	3	61,248	2.9	Resurface - Priority #2	275,616	Mid
Peters Ave.	108	0.2	24	30	Thomas St	Enos St	3	25,344	2.5	Resurface - Priority #2	114,048	Mid

Street Name	Route Number	Length (miles)	Surface Width	Section Number	Begin Street	End Street	BIA Functional Class	Area (Sq. Ft.)	Average Pavement Rating	Recommendation	Total Project Cost (\$)	Time frame
Ralph St.	107	0.4	29	60	Miguel Ave	Hohokam St	3	61,248	2.3	Resurface - Priority #2	275,616	Mid
Ross St.	107	0.3	29	70	Juan St	Hohokam St	3	45,936	2.4	Resurface - Priority #2	206,712	Mid
Santos St.	117	0.10	21	10	Vekol Rd	Farrell Rd	3	11,088	3.3	Resurface - Priority #2	49,896	Mid
Thomas St.	108	0.2	24	10	Ferrell Rd	Vincent Ave	3	25,344	2.7	Resurface - Priority #2	114,048	Mid
Vasquez St.	109	0.2	29	30	Farrell Rd	Pablo Ave	3	30,624	2.6	Resurface - Priority #2	137,808	Mid
Vincent Ave.	108	0.2	25	40	Thomas St	Enos St	3	26,400	2.8	Resurface - Priority #2	118,800	Mid
Vincent Ave.	109	0.4	29	50	Miguel Avenue	Vasquez St	3	61,248	2.8	Resurface - Priority #2	275,616	Mid
Antone Road	100	0.40	18	30	Maricopa Casa Grande Highway	Carlyle Street	5	38,016	3.6	Monitor condition		
Ball Field Access Rd.	113	0.1	30	10	south end	Farrell Rd	3	15,840	3.2	Monitor condition		
Carlyle St.	100	0.30	37	10	Murphy Road	Antone Rd	3	58,608	3.4	Monitor condition		
Casino Main Access Rd.	118	0.1	44	10	west end	SR 347	9	23,232	4.0	Monitor condition		
Casino Rear Access Rd.	119	0.2	30	10	south end	Farrell Rd	5	31,680	4.0	Monitor condition		
Church Rd	103	0.10	27	30	Ferrell Rd	Peters Ave	3	14,256	4.0	Monitor condition		

Street Name	Route Number	Length (miles)	Surface Width	Section Number	Begin Street	End Street	BIA Functional Class	Area (Sq. Ft.)	Average Pavement Rating	Recommendation	Total Project Cost (\$)	Time frame
Church Rd	103	0.10	27	35	Peters Ave	Eco-museum Road	5	14,256	4.0	Monitor condition		
Eco-museum Rd.	103	0.30	24	20	Carlyle Rd	Cemetery Road	3	38,016	4.2	Monitor condition		
Elder Rd	101	0.1	21	10	South end	Farrell Rd	3	11,088	3.5	Monitor condition		
Elder Rd	101	0.1	21	30	Elder Loop	Elder Rd	3	11,088	3.5	Monitor condition		
Elder Rd.	101	0.1	21	20	Elder Loop	Elder Rd	3	11,088	3.5	Monitor condition		
Enos St.	108	0.2	24	20	Ferrell Rd	Vincent Ave	3	25,344	3.4	Monitor condition		
Farrell Road	14	2.10	24	35	Santos St	Bridge H154	4	266,112	5.0	Monitor condition		
Farrell Road	14	0.30	24	50	Bridge H154	SR 347	4	38,016	5.0	Monitor condition		
Library Access Rd	111	0.1	29	20	Library parking	Farrell Rd	3	15,312	3.2	Monitor condition		
Library Access Rd	111	0.2	29	10	Library	Farrell Rd	3	30,624	3.4	Monitor condition		
Miguel St.	100	0.30	37	20	south end of Miguel Street	Carlyle Street	3	58,608	3.4	Monitor condition		
No Name Rd. (Peters Ave)	103	0.10	24	40	west end of Peters Ave	Church Road	3	12,672	4.0	Monitor condition		

Street Name	Route Number	Length (miles)	Surface Width	Section Number	Begin Street	End Street	BIA Functional Class	Area (Sq. Ft.)	Average Pavement Rating	Recommendation	Total Project Cost (\$)	Time frame
Peters & Nall Rd	9016	1	30	10	SR 347	Bridge H150	5	158,400	5.0	Monitor condition		
Peters & Nall Rd	9016	1	30	30	Bridge H150	Porter Rd	5	158,400	5.0	Monitor condition		
Peters & Nall Rd	9016	1	24	40	Porter Rd	White and Parker Rd	5	126,720	5.0	Monitor condition		
Peters & Nall Rd.	9016			20	Bridge H150		5	0	N/A	Monitor condition		
Peters Ave.	109	0.4	29	40	Miguel Avenue	Vasquez St	3	61,248	3.2	Monitor condition		
Southern Dunes Golf Course Road					SR 237	end		53,592	3.0	Monitor condition		

8.2. MAINTENANCE PROGRAM ACTIVITIES AND FUNDING

Paved roads require routine maintenance such as patching, crack sealing, guardrail and sign replacements, repair and cleaning, signs, roadside clean-up and mowing, landscaping, and striping. As identified by the *BIA Road Maintenance Manual*, the following is the minimum acceptable level for paved road maintenance:

- Maintaining all roadways, shoulders, traffic signs, drainage structures, and pavement markings;
- Patching potholes as necessary;
- Sealing cracks in the pavement; and
- Pavement sealing when deterioration is moderate, with small areas rated as severe.

Table 8-3 provides an overview of standard road maintenance activities per the *BIA Road Maintenance Manual* and *ADOT Performance Guidelines Manual*. The maintenance activities are broken down by the season of the year, with the activities that can be done year-round shown first. The Ak-Chin Indian Community Sanitation and Public Works Department are undertaking more maintenance activities over time.

With respect to funding, up to 25% or \$500,000, whichever is greater, of total fiscal year Tribal Transportation Program funds allocation can be used for maintenance.

Table 8-3: Road Maintenance Activities by Time of Year

MAINTENANCE ACTIVITY	DESCRIPTION AND PURPOSE	GUIDELINES
MAINTENANCE ACTIVITIES THAT CAN BE PERFORMED YEAR ROUND		
Patching Surfaces	Patch potholes, severe depressions, edge breakup, and breaks in roadway and shoulder surfaces using premix materials.	<p>1. Potholes and localized failures are to be repaired as soon as scheduling permits, but no later than one week after notification, except when:</p> <ul style="list-style-type: none"> a. The speed limit on the road is 35 MPH or less. The hole or localized failure is not over 2" deep as measured from the adjacent pavement. Repair work is within existing schedules. b. Sealing or resurfacing project is starting within the month. <p>2. Apply either temporary or permanent patches. Use permanent patching unless overlays or other general repairs are scheduled.</p>
Soil Stabilization Unpaved Roads	Apply magnesium chloride soil stabilizers to promote compaction and dust control on dirt or gravel roads.	Apply magnesium chloride at recommended rate for dust control or compaction on gravel or dirt roads; do not exceed 300 gallons per lane mile per day.
Dust Control	Apply water to reinforce soil characteristics for dust control and maintenance of unpaved surfaces, stockpiles, etc.	Apply enough water to settle dust or form a crust.
Blade Unpaved Shoulders	Blade and reshape shoulders and drainage ditches including fill and cut sections, if necessary, to correct pavement drop-off, rutting of shoulders, build-up of shoulder material, and to restore a smooth, safe surface with proper drainage	Grading is best performed when shoulder material is moist to insure maximum workability of material.
Asphalt Sidewalks and Shared-Use Paths	Repair pop-outs; potholes, buckled sidewalks, broken curbs, sunken pavement, root infiltration.	Check drainage components for proper function; Identify and complete joint and crack sealing and patching; perform seal coating. If widespread subgrade issues are suspected, removal and replacement is the only option.
Concrete Sidewalk and Shared-Use Paths	Repair potholes, buckled sidewalks, broken curbs, crumbling concrete, sunken pavement.	Check drainage components for proper function, no pooling water; Identify and complete joint and crack sealing and patching. If widespread subgrade issues are suspected, removal and replacement is the only option.
Guardrail Replacement, Repair, and Cleaning	Replace and upgrade guardrail systems	Maintenance work is scheduled as required and as necessary to replace and upgrade guardrail system
Drainage Maintenance and Clean-Out	Clean inlet and outlet drainage ditches within right-of-way and drainage easements, including those for roadway dips. Clean catch basins, drop right-of-way and drainage easements, including those for roadway dips. Clean catch basins, drop inlets and down drains.	This work shall be performed on drainage installations, as required.
Fencing and Gate Repair	Inspect, maintain, repair or replace all fencing and gates.	Maintenance work is as necessary to replace and upgrade fence system, including installation and maintenance of gates.

MAINTENANCE ACTIVITY	DESCRIPTION AND PURPOSE	GUIDELINES
Sign Clean/Wash/Inspect	Inspect and clean to maintain unit at optimum designed efficiency.	
Sign Repair and Replacement	Repair and replace existing signs due to graffiti, accident, weather damage, or retro-reflectivity.	The BIA shall install and replace signs in accordance with the current edition of the MUTCD.
Sweeping	Sweeping of the curbed and other portions of the roadway with a mechanical sweeper.	Sweeping shall be accomplished when possible during times of low traffic volume.
Roadside Mowing	Machin mow road edge on road shoulders to improve sight distance, control weeds, tree seedlings, reduce summer fuel fires and enhance views of hazard markers, guardrails, and delineators.	Vegetation is not to be mowed unless average height of plants is greater than 17". In order to preserve perennial grasses needed for shoulder stability, do not mow lower than 4".
Brush and Tree Removal	Trim shrubs and ground cover in landscaped areas to maintain sight distance.	Various conditions and/or shrub varieties require pruning at different times during the year.
Roadside Clean-up	Pick up and disposal of all litter within the right-of-way. Includes removal of all unsightly objects and items which could cause damage to roadside mowing equipment.	Work shall be accomplished as needed to preserve the aesthetic appearance of the highway and ensure safety of roadside mowing equipment.
Removal of Traffic Obstacles	During routine maintenance and roadway inspection, immediately remove all obstacles within the right-of-way that is potentially hazardous to roadway users.	Obstacles include fallen trees and posts, rocks, brush, trash, dead animals, unauthorized signs, etc.
Bridge Clean and Inspect	Inspect, clean, remove graffiti from, and otherwise maintain decks, joints, footings, abutments, wing walls, superstructure, and rails	Scheduling shall become an emergency when conditions require immediate attention for public safety.
MAINTENANCE ACTIVITIES TO PERFORM IN THE SPRING OR FALL		
Replace Surface / Base	The removal and replacement of badly cracked and broken asphalt surface and deteriorated base with new material.	Material shall be removed a minimum depth of 4" and a minimum thickness of 2" asphaltic premix surface material should be used.
Sand Seal Coat	Full-surface treatment on continuous sections of bituminous pavement with one application of liquid asphalt and cover material to seal and restore surface life, flexibility, and skid resistance. Sand seals enrich weathered pavements and fills fine cracks in the pavement surface.	This should be done when deterioration is moderate, with perhaps small areas rated as severe. Severe deterioration requires a decision of whether to return the road to gravel or repave; and may require a report on why deterioration was allowed to progress so far.
Chip seal	Full-surface treatment on continuous sections of bituminous pavement with one application of liquid asphalt and cover material to seal and restore surface life, flexibility and skid resistance.	Section of surface to be treated must be large enough to utilize at least twenty-one tons of liquid asphalt spread by the supplier. This should be done when deterioration is moderate, with perhaps small areas rated as severe. Severe deterioration requires a decision of whether to return the road to gravel or repave; and may require a report on why deterioration was allowed to progress so far
Tight Blading	The application of premix with a blade to fill ruts and raveling in asphaltic pavement and/or ACFC finishing course. (1-1/2 inches deep or less)	Schedule seal coat at least one month after completion to allow to cure and to get additional traffic compaction.

MAINTENANCE ACTIVITY	DESCRIPTION AND PURPOSE	GUIDELINES
Surface Blading and Reshaping	Grade unpaved roads, including frontage roads, to restore proper shape, smoothness, and drainage. This activity includes forming or reforming of drainage gutters, removal of berms, and placement of cut material on the roadway.	Grading is best performed after rain or when surface materials are moist to ensure proper compaction.
Repair Shoulders	Add or remove material to shoulder and slope to eliminate pavement drop-off, rutted or eroded conditions.	Should be scheduled before rutting along the edge of the pavement affects the integrity of the roadway or when slope erosion, if left unrepaired, will deteriorate into major damage.
Reconstruction	When a roadway has reached the end of its life cycle and can no longer be rehabilitated, a new road must be constructed. All existing pavement will be removed and recycled for use as a new sub-base. The old sub-base will be regraded and compacted and a new hot mix asphalt surface applied.	Material shall be removed a minimum depth of 4" and a minimum thickness of 2" asphaltic premix surface material should be used. The base shall be replaced when unstable.
Pavement Striping	Paint traffic lines which include center lines, lane lines, no passing stripes, gore stripes and edge stripes on roadways, frontage roads, all re-paved or sealed roadways and other pavement markings.	Striping should be scheduled to follow seal coats.
MAINTENANCE ACTIVITIES TO PERFORM IN THE WINTER		
Crack sealing	Rout and/or clean 1/4" or greater expansion or working cracks and seal in AC or PCC pavements to prevent the passage of water through the surface crack into the pavement structure or subgrade.	This should be done in cool weather when cracks are open. Not in inclement weather which would interfere with adherence of the asphalt.

Source: BIA Road Maintenance Manual, ADOT Performance Guidelines Manual

9. ROADWAY DESIGN GUIDELINES

The design guidelines in this chapter were developed in consultation with the Ak-Chin Indian Community Capital Projects Department and the Community Operations Manager and have been developed to help ensure that transportation projects within the Ak-Chin Indian Community are designed to provide safe and efficient facilities. The design guidelines recognize that each project is unique and has its own concerns and constraints. The design process identifies and addresses these elements through a collaborative approach. A successful design must balance many factors that will result in a safe facility with features that meet the expectations of users and the Community. **The guidelines are proposed for future consideration**, and should the Community want to approve them they will need to go through the Planning and Zoning approval process.

The design should ensure there is consistency in application of the standards that allows the driver to react in a consistent and predictable manner when encountering similar roadway conditions. However, in responding to the many issues that arise on each project, there is a need for flexibility in selecting design features while maintaining consistency and user safety.

This chapter describes roadway design standards for the following facility types:

- Urban Arterial Road (see **Figure 9-1** for cross section)
- Urban Collector Road (see **Figure 9-2** for cross section)
- Rural Arterial Road (see **Figure 9-3** for cross section)
- Rural Collector Road (see **Figure 9-4** for cross section)
- Residential Local Road (see **Figure 9-5** for cross section)
- Gravel Road (see **Figure 9-6** for cross section)

Table 9-1 summarizes the associated design standards for each facility type such as right-of-way widths, design speed, pathways, number of lanes, and landscaping. It should be noted that features such as landscaping, location of pathways, and striping of shoulder areas to include bicycle lanes will be determined on a case-by-case basis.

These cross sections are reversible. For example, pathways, where shown on one side of the road, could be placed on either side of the road depending on the topographic constraints.

Table 9-1: Street Section Descriptions

Street Section Name	Right-of-Way	Design Speed	Pathways*	Lanes*	Landscaping*
Urban Arterial Road	100'	50 mph	6' Detached, both sides	4 Travel Lanes (4-12'); Shoulder (6')	Landscaping shall be considered on a case by case basis to be coordinated with the Ak-Chin Indian Community
Urban Collector Road	70'	45 mph	6' Detached, both sides	2 Travel Lanes (12'); Shoulder (6')	Landscaping shall be considered on a case by case basis to be coordinated with the Ak-Chin Indian Community
Rural Arterial Road	80'	55 mph	6' Detached, one side	2 Travel Lanes (12'), Shoulder (5')	Landscaping shall be considered on a case by case basis to be coordinated with the Ak-Chin Indian Community
Rural Collector Road	60'	45 mph	6' Detached, one side	2 Travel Lanes (14')	Landscaping shall be considered on a case by case basis to be coordinated with the Ak-Chin Indian Community
Residential Local Road	50'	35 mph	6' Attached, both sides	2 Travel Lanes (14')	Landscaping shall be considered on a case by case basis to be coordinated with the Ak-Chin Indian Community
Gravel Road	Varies	15 mph	None	2 Travel Lanes (12')	None

*Note: Landscaping, bike lanes, and pathways will be considered on a case-by-case basis by the Ak-Chin Indian Community.

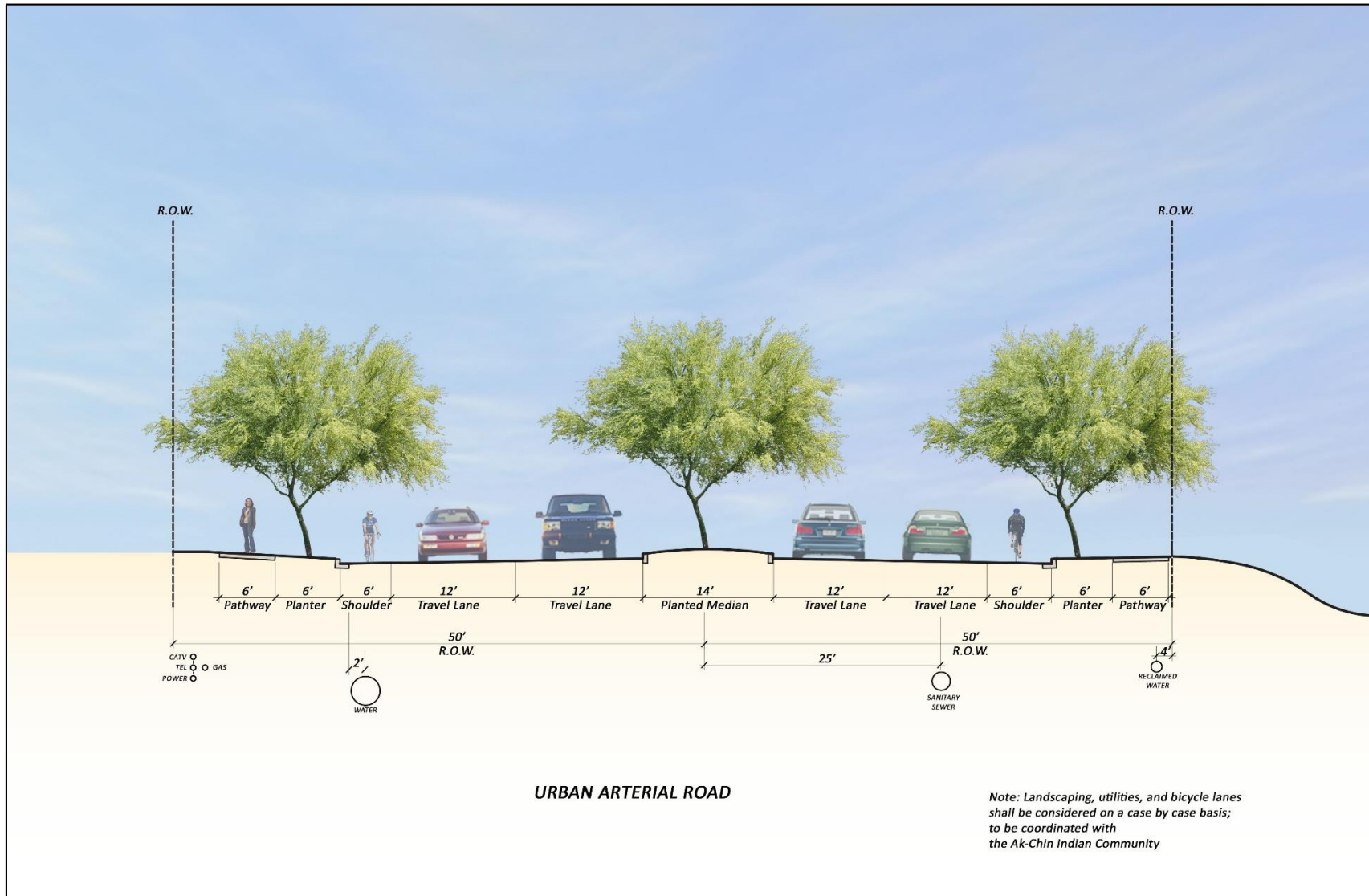


Figure 9-1: Urban Arterial Road Cross Section

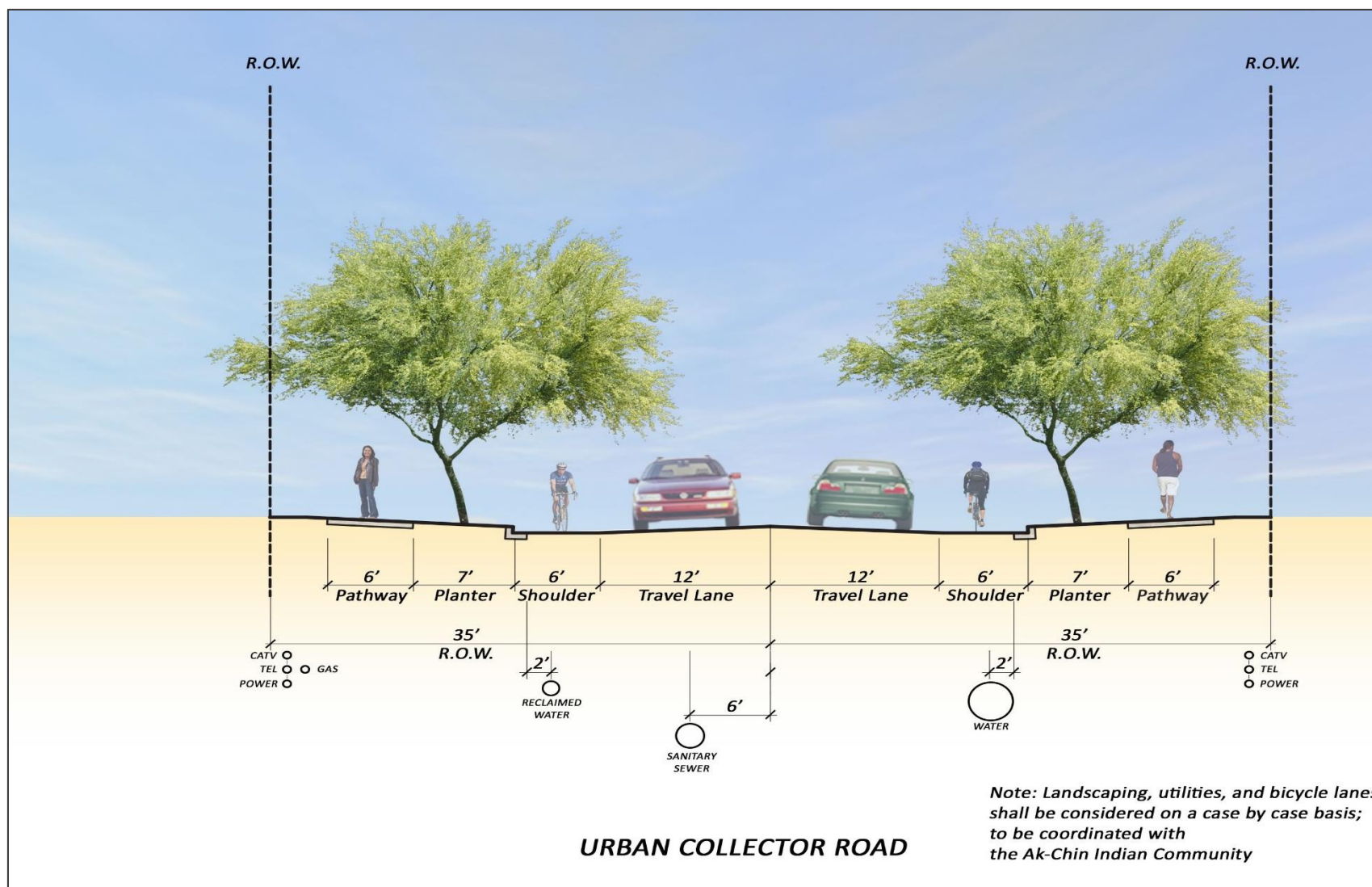


Figure 9-2: Urban Collector Road Cross Section

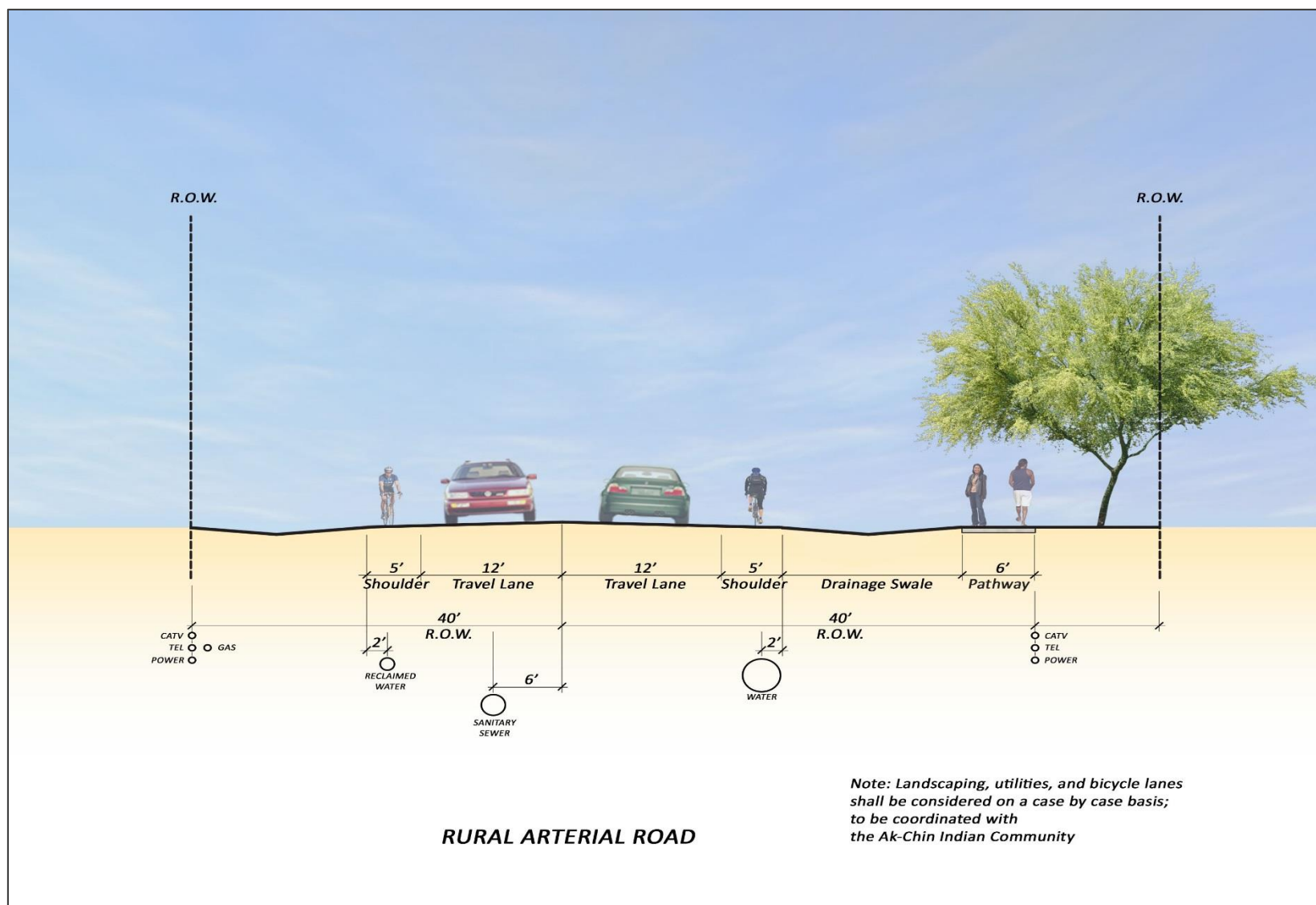


Figure 9-3: Rural Arterial Road Cross Section

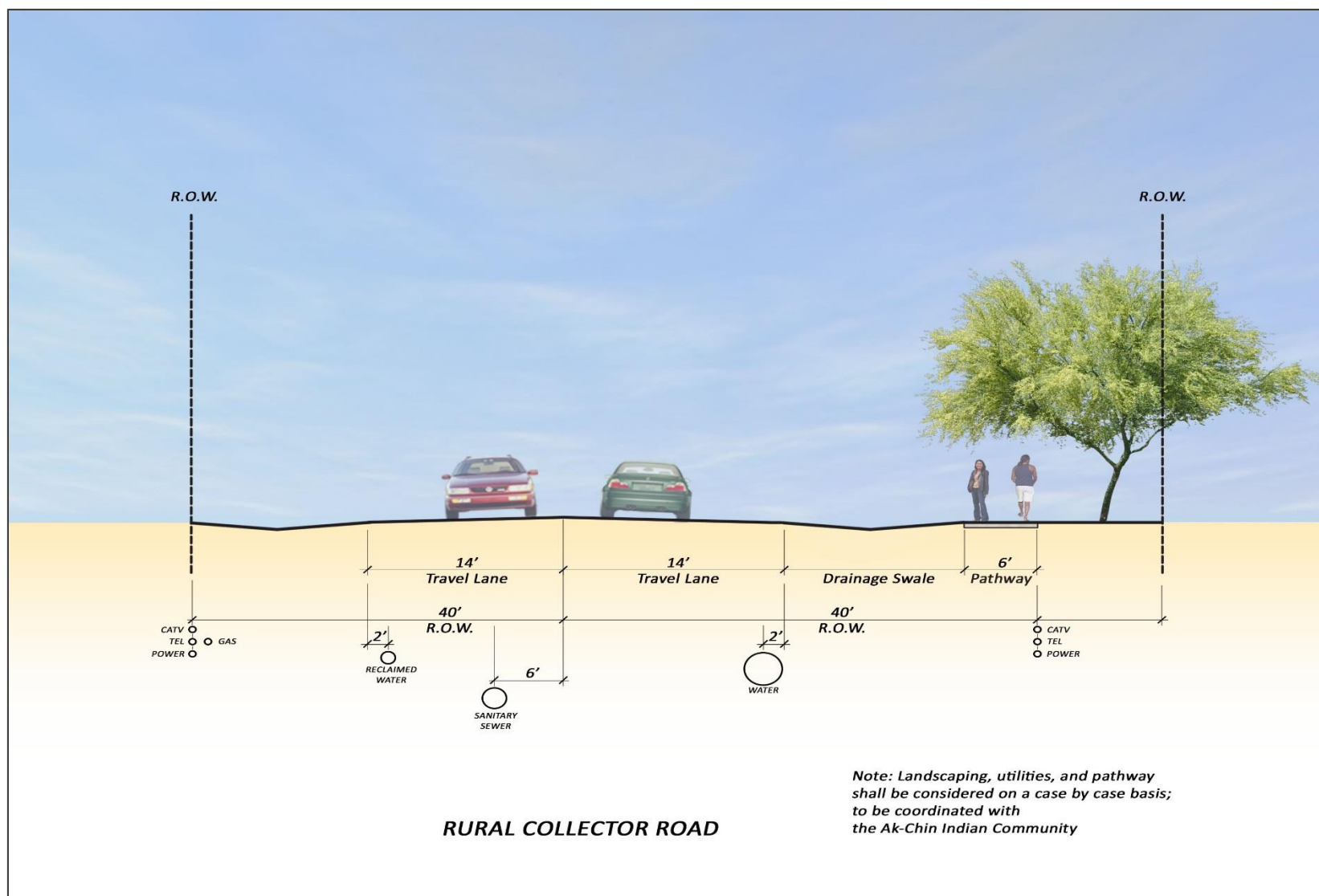


Figure 9-4: Rural Collector Road Cross Section

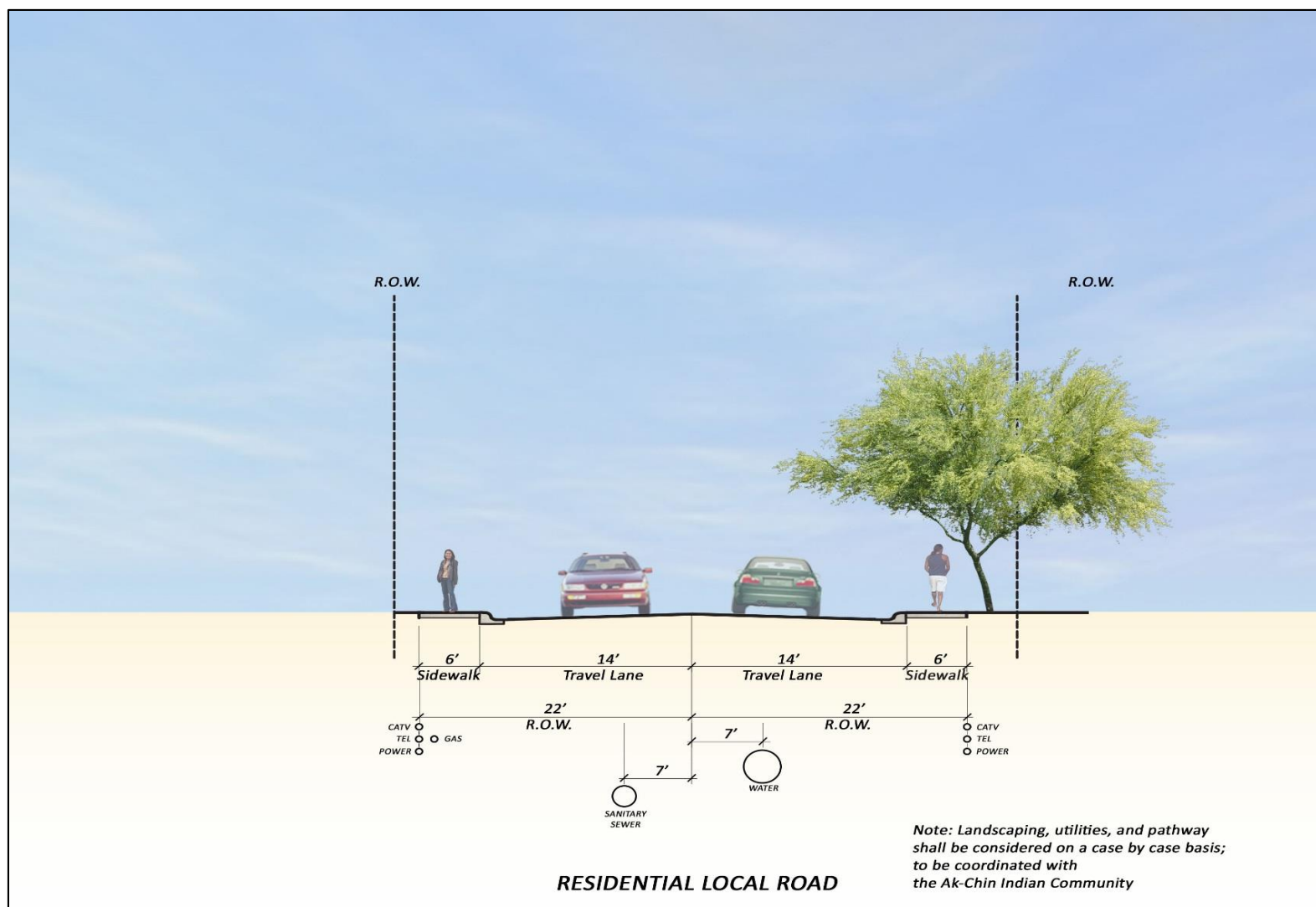


Figure 9-5: Residential Local Road Cross Section

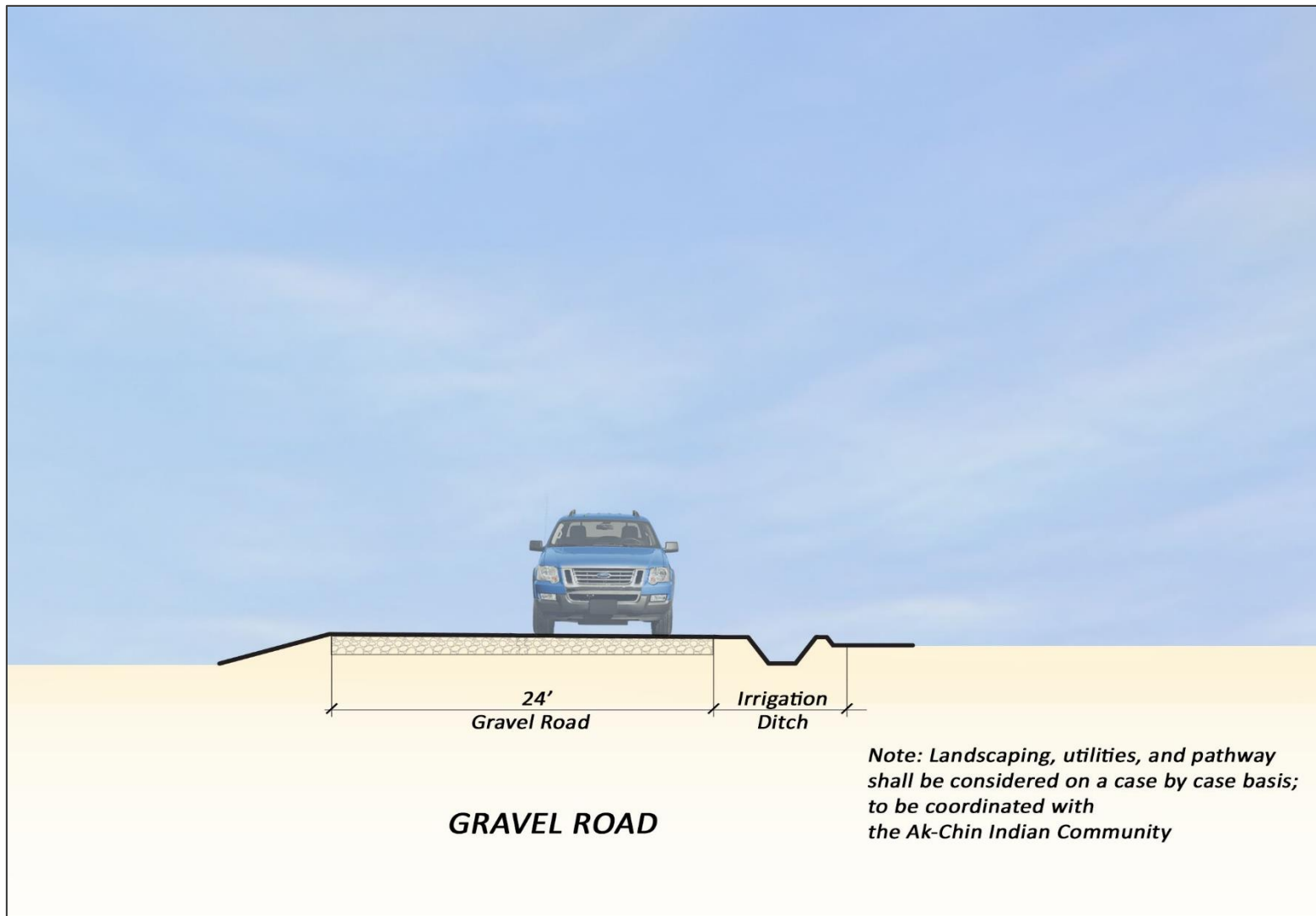


Figure 9-6: Gravel Road Cross Section

10. ACCESS MANAGEMENT STRATEGIES

This chapter describes general guidelines for access management techniques that can be used in the Community. It is recommended that the basic principles of access management and the access management guidelines shown below be adopted as part of this plan. The guidelines are proposed for future consideration, and should the Community want to approve them they will need to go through the Planning and Zoning approval process, which is a two-step process.

10.1. WHAT IS ACCESS MANAGEMENT?

Access management is the coordinated planning, regulation, and design of access between roadways and land development. It encompasses a range of methods that promote the efficient and safe movement of people and goods by reducing conflicts on the roadway system and at its interface with other modes of travel.⁵

Access management, as an important means for maintaining mobility, encompasses a set of techniques that are available for use to control access to highways, major arterials, and other roads.

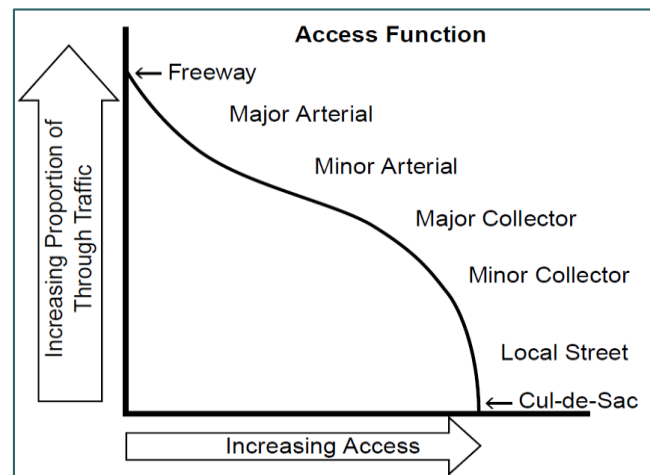
The most important benefit of access management is improved safety. Use of access management principles helps to reduce potential roadway conflicts and promotes a safer driving environment, as well as improved vehicle flow.

Benefits of access management include improved movement of traffic, reduced crashes, and fewer vehicle conflicts.

10.2. BASIC PRINCIPLES OF ACCESS MANAGEMENT

An overview of principles of access management⁶ is provided as follows:

- 1. Provide a specialized roadway system** – Different types of roadways serve different functions. It is important to design and manage roadways according to the primary functions that they are expected to serve.
- 2. Promote intersection hierarchy** – An efficient transportation network provides appropriate transitions from one classification of roadway to another. For example, freeways connect to arterials through an interchange that is designed for the transition. Extending this concept to surface roadways results in a series of intersection types that range from the junction of two major arterial roadways, to a residential driveway connecting to a local street.



Source: Transportation Research Board

⁵ Transportation Research Board, Access Management Manual, Second Edition, 2014, page 3.

⁶ Transportation Research Board, Access Management Manual, Second Edition, 2014, pages 12-18.

3. **Locate signals to favor through movements** – Long, uniform spacing of intersections and signals on major roadways enhances the ability to coordinate signals and ensure continuous movement of traffic at the desired speed. Failure to carefully locate access connections, or median openings that later become signalized, can cause substantial increases in arterial travel times. In addition, poor signal placement may lead to delays that cannot be overcome by computerized signal-timing systems.
4. **Preserve the functional area of intersections and interchanges** – The functional area of an intersection or interchange is the area where motorists are responding to the intersection, decelerating, and maneuvering into the appropriate lane to stop or complete a turn. Access connections too close to intersections can cause serious traffic conflicts that impair the function of the affected facilities.
5. **Limit the number of conflict points** – Drivers make more mistakes and are more likely to have collisions when they are presented with the complex driving situations created by numerous conflicts. Conversely, simplifying the driving task contributes to improved traffic operations and fewer collisions. A less complex driving environment is accomplished by limiting the number and type of conflicts between vehicles, vehicles and pedestrians, and vehicles and bicyclists. The number of potential conflicts increases substantially when pedestrian and bicycle movements are considered.
6. **Separate conflict areas** – Drivers need sufficient time to address one potential set of conflicts before facing another. The necessary spacing between conflict areas increases as travel speed increases, to provide drivers adequate perception and reaction time. Separating conflict areas helps to simplify the driving task and contributes to improved traffic operations and safety.
7. **Remove turning vehicles from through-traffic lanes** – Turning lanes allow drivers to decelerate gradually out of the through lane and wait in a protected area for an opportunity to complete a turn, thereby reducing the severity and duration of conflict between turning vehicles and through traffic. They also improve the safety and efficiency of roadway intersections.
8. **Use nontraversable medians on major roadways** – Medians separate opposing traffic streams and channel turning movements on major roadways to designated locations. Separation of traffic streams helps to eliminate head-on crashes. Many access-related crashes involve left turns. Therefore, nontraversable medians and other techniques that minimize left turns or reduce the driver workload can be especially effective in improving roadway safety.
9. **Provide a supporting street and circulation system** – Well-planned communities provide a supporting network of local and mobility. Connectivity can be maintained while advancing access management objectives for arterial roadways by ensuring that local street connections to the arterial conform to the adopted connection spacing interval.
10. **Provide unified access and circulation systems** – Unified access and circulation systems for development eliminate or reduce the need for vehicles to circulate on major roadways when they move from one establishment to another. This can be provided by public street networks or by private circulation systems.

10.3. ACCESS MANAGEMENT GUIDELINES

Access management guidelines for street and driveway spacing, driveway geometrics, and traffic signal spacing are summarized in **Table 10-1** below, and are discussed in the following sections. These guidelines are intended for future development. Currently Farrell Rd, a major thoroughfare through the Community, is classified as a rural major collector in the BIA Road Inventory and as a rural local road under FHWA functional classification. Peters and Nall Road is classified as a rural local road in the BIA Road Inventory and as a rural local road under FHWA functional classification. Access standards are generally met on these roads.

Table 10-1: Access Management Guidelines

Roadway Category	Street Spacing	Private Driveway Spacing	Private Access Geometrics	Private Driveway Remarks	Traffic Signal Spacing
Arterial Roads	1/8-mile (660 feet) minimum ½ mile (2640 feet) preferred	450 feet minimum for right-in, right out driveways Limit driveways with left turn out access to ¼ mile spacing for major driveways	Right turns allowed Turn lanes may be required.	One access drive per parcel, two for large developments when spacing standards can be met.	½ mile locations, ¼ mile where warranted, fully coordinated and progressed
Collector Roads	No restrictions	150 feet minimum 300 feet preferred	Right turns allowed Turn lanes may be required.	One access drive per parcel, two for large developments when spacing standards can be met.	½ mile locations, ¼ mile where warranted

Access Spacing

Street Spacing

Increasing the distance between intersections can reduce congestion and improve traffic flow; it can also improve air quality on heavily traveled roads.

Typical street spacing

- On collector roadways: no restrictions.
- On arterial roadways: space cross streets 1/8-mile minimum (660 feet) and ½ mile (2,640 feet) preferred.

These guidelines are consistent with City of Maricopa street spacing guidelines for minor arterial and collector streets. Pinal County guidelines recommend road spacing of ¼ mile to ½ mile on arterial roadways and do not have guidelines for collector roadways.

Private Driveway Spacing

Driveway spacing which is less frequent reduces the potential for conflicts, and therefore crashes, on the road. Fewer driveways spaced further apart can allow for more orderly merging of traffic and present fewer

challenges for drivers. *A Policy on Geometric Design of Highways and Streets*, a standard design reference, shows that crash rates tend to increase as the total driveway density increases.⁷

Guidelines for driveway spacing are:

- On collector roadways: 150-foot minimum, 300 feet preferred
- On arterial roadways: 450 feet minimum for right in, right out driveways; limit driveways with left turn out access to ¼ mile spacing for major driveways

These guidelines are consistent with the neighboring City of Maricopa guidelines for collector and minor arterial private driveway spacing guidelines.

General guidelines for driveway spacing are to allow one driveway per parcel and two driveways for large developments when spacing standards can be met. Driveways should not be placed within the physical boundaries of a turn lane.

Arizona Department of Transportation (ADOT) Encroachment Permits

Whenever new development is planned adjacent to a state route, permits are required for any work within the state right of way such as highways, driveways, grading, fence removal or replacement, surveying, and geotechnical investigation. Encroachment permits are issued by each of the respective ADOT district offices where the encroachment will be located. Access on SR 347 is within the ADOT Southcentral District. Access on SR 238 is within the ADOT Central District.

To apply for an encroachment permit, an application form is required, along with supporting documents depending on the type of encroachment. The encroachment permit form and application instructions is provided in the **Appendix** (under separate cover). Further information on ADOT encroachment permits are located on the ADOT website at <https://www.azdot.gov/business/Permits/encroachment-permits>.

Turning Lanes and Traffic Signal Spacing

Turn Lanes

Turn lanes allow drivers to decelerate and wait in a protected area to turn. Dedicated left- and right-turn, indirect left-turns and U-turns, and roundabouts keep through-traffic flowing. Turn lanes are desirable when deemed necessary by a traffic study.

⁷ American Association of State Highway and Transportation Officials, *A Policy on Geometric Design of Highways and Streets*, 6th Edition, 2011, page 2-74.

Traffic Signal Spacing

Long, uniform spacing of traffic signals and intersections on major roadways enhances the ability to maintain efficient traffic flow and safety. Based on a review of traffic signal spacing requirements in neighboring jurisdictions (Pinal County, the City of Maricopa, and the City of Casa Grande), the following signal spacing guidelines are recommended, as shown in **Table 10-2**:

Table 10-2: Traffic Signal Spacing Guidelines

	Traffic Signal Spacing on Arterial Streets	Traffic Signal Spacing on Collector Streets
Traffic signal spacing	1/2 mile and 1/4 mile locations, where warranted, fully coordinated and progressed	1/2 mile locations; 1/4 mile locations, where warranted

Roundabouts

Roundabouts present an opportunity to improve an intersection with multiple conflict points or a severe crash history (e.g., T-bone crashes) to one that operates with fewer conflict points and less severe crashes (e.g., sideswipes) if they occur. Per the Insurance Institute of Highway Safety (IIHS), many safety benefits are associated with the modern roundabout including:

- 90 percent reduction in fatal crashes
- 75 percent reduction in injury crashes
- 30-40 percent reduction in pedestrian crashes
- 10 percent reduction in bicycle crashes
- 30-50 percent increase in traffic capacity

Other benefits to roundabouts include reductions in fuel use and pollution, no traffic signal equipment to install and repair, and quieter neighborhoods.⁸ It should be noted that proper design of roundabouts must consider accommodation of truck traffic as well as bicycle and pedestrian traffic.

⁸ ADOT Transportation Safety – Roundabouts, <https://www.azdot.gov/about/transportation-safety/roundabouts/overview>, referenced 5/12/2016.

11. RECOMMENDED STUDIES AND COORDINATION

This chapter summarizes recommended future studies and identifies current regional planning efforts for ongoing coordination.

11.1. ROADWAY DESIGN MANUAL

Although this Long Range Transportation Plan develops general design guidelines and cross sections for several roadway types, a detailed roadway and development design manual would be a useful tool as road improvement projects continue in the Community. The Design Manual could also include traffic impact analysis guidelines, subdivision plat requirements, street design requirements, water and sewer design requirements, and guidelines for traffic impact studies. Pinal County has several design guidelines that might be a good reference sources, which include:

Pinal County Subdivision and Infrastructure Design Manual

<http://pinalcountyz.gov/PublicWorks/Documents/FinalSubInfra.pdf>

Pinal County Traffic Impact Analysis Guidelines

http://pinalcountyz.gov/PublicWorks/Documents/Manuals/PinalCo_TIAGuidelinesProcedures.pdf

Pinal County Drainage Manual,

http://pinalcountyz.gov/PublicWorks/Documents/Manuals/PCDMVol1_0804_edits_accepted.pdf

http://pinalcountyz.gov/PublicWorks/Documents/Manuals/PCDMVol2_0804_edits_accepted.pdf

There are also reference sources for design standards for the Indian Reservation Road Program (now referred to as the Tribal Transportation Program) that are contained in 25 CFR 170- Indian Reservation Road Program, Appendix B To Subpart D—Design Standards for The IRR Program, <https://www.gpo.gov/fdsys/pkg/CFR-2012-title25-vol1/pdf/CFR-2012-title25-vol1-part170-subpartD-appB.pdf>

The City of Maricopa also has road design standards in their Subdivision Regulations, <http://www.maricopa-az.gov/web/search?q=subdivision%20regulations>

11.2. TRIBAL TRANSPORTATION SAFETY STUDY

It is strongly recommended that the Community develop a Tribal Transportation Safety Plan. Tribal Transportation Safety Plans are a tool used to identify and plan to address transportation risk factors that have a potential of leading to serious injuries or death. Safety plans may lead to implementation of a project or program, renewed efforts in an existing program, or further study of a roadway section (using an engineering study or Road Safety Assessment).

A Tribal Transportation Safety Plan should demonstrate the safety concerns in a Community and the prioritized strategies that will be explored to implement the plan. To the greatest extent possible the concerns identified by a safety plan should be based on crash history (data). Data can help funding organizations understand the needs and may even compel the funding of a project or program. Funding for Tribal Transportation Safety Plans can be applied for through the Tribal Transportation Program.

The Tribal Transportation Safety Plan should be consistent with the Arizona Strategic Highway Safety Plan (<https://www.azdot.gov/about/transportation-safety/arizona-strategic-highway-safety-plan>).

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11.3. COORDINATION WITH OTHER REGIONAL TRANSPORTATION PLANNING INITIATIVES

Several transportation planning initiatives will have a major impact on transportation in the region. These include the I-11 Corridor and the East-West Corridor. These projects are unfunded and not included in the MAG regional travel demand model; however, it will be important to continue to coordinate with these planning initiatives. They are described as follows.

I-11 Corridor

ADOT and the Nevada Department of Transportation (NDOT) completed the I-11 and Intermountain West Corridor Study in November 2014. The future I-11 may ultimately become part of a critical trade linkage connecting Mexico to Canada. Throughout the course of the I-11 and Intermountain West Corridor Study, ADOT focused on and supported an I-11 concept that runs border to border throughout Arizona, beginning at the Hoover Dam Bypass Bridge and ending at the Arizona-Mexico border.

The goal of the study was not just to find a way to directly connect Phoenix and Las Vegas, but also to develop a plan and the necessary infrastructure to position the two states for broader success in the global marketplace. Potential routes run south and west of the Ak-Chin Indian Community.

The next stage of development is to begin a Tier I EIS and Conceptual Engineering Document that will be structured to select a preferred corridor alignment (approximately 2,000 feet in width) and preferred transportation mode choice for accommodating future traffic needs from Nogales to Wickenburg, Arizona.

There is currently no schedule or funding to build I-11.

East-West Corridor

The East-West Corridor Study - Final Design Concept Report (DCR), December 2015, is a study to improve the mobility and connectivity of the regional transportation network by providing a new, high-capacity facility that can handle the projected east-west travel demand from SR 347 to I-10. The Ak-Chin Indian Community was involved in the development of the study. One of the evaluation criteria for the study was compatibility with Tribal requirements.

In general, the corridor is proposed to be designed as an Arizona Parkway (characterized by a wide median and elimination of left turns at arterial intersections); however, where the East-West Corridor passes through the Ak-Chin Community, there is a drainage channel that is located to the north of the roadway. This channel is fed from drainage from the Sacaton Mountains. To maintain the existing drainage channel capacity, while also allowing provisions for Community access, a typical section was proposed that transitions the Arizona Parkway to a more traditional rural arterial roadway. The drainage channel will be maintained on the northern side of the roadway to mitigate impacts to the existing drainage structures.

The DCR assessed alternatives in five “zones” or subareas shown in **Figure 11-1**. A summary of the recommended alignments in each of the zones is excerpted from the DCR for the recommended alternative.

The East-West Corridor Study Final Report conceptually depicts the terminus of the corridor at SR 347 at a point that would align with the Ak-Chin Parkway. The City of Maricopa’s latest proposal depicts the facility as a minor arterial (110’ ROW) at the terminus. It remains unclear currently whether this alignment is feasible due to needed further study of two segments of the corridor. The East-West Corridor DCR closed out with these two areas remaining unsettled. Maricopa’s study of the two unsettled areas will continue and the City of Maricopa project team will coordinate the results with the Ak-Chin Indian Community.

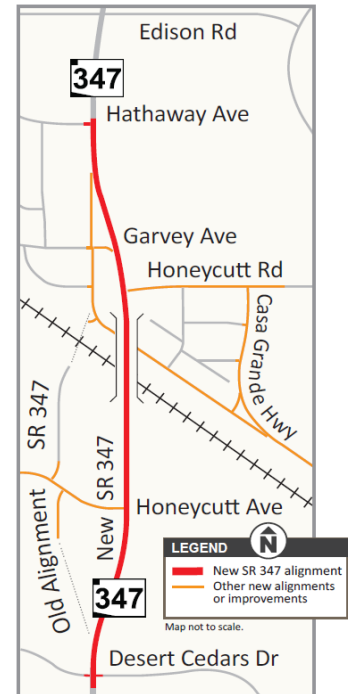
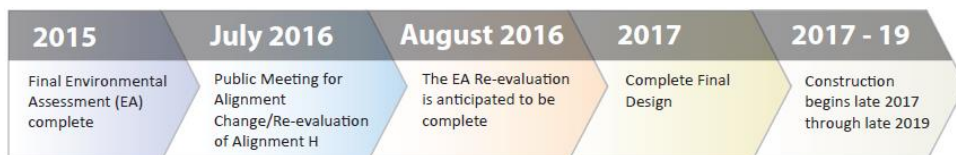


Source: Pinal County's East-West Corridor Study - Final Design Concept Report (December 2015)
 Figure 11-1: Zones for East-West Corridor

State Route 347 at Union Pacific Railroad

ADOT, in conjunction with FHWA and the City of Maricopa, completed a study to evaluate alternatives and identify improvements to access, capacity and traffic operations through 2040. The study evaluated a future grade separation (bridge) to replace the existing at-grade intersection of SR 347 at the Union Pacific Railroad (UPRR) track.

Through an evaluation process that considered ten alternatives, a recommended alternative was selected and is being re-evaluated, particularly with respect to impacts on businesses and residences. The timeline for the project is below, and the selected alternative is shown at right.



Val Vista and Anderson Road Corridor Study

A corridor study is underway as a task element of Phase II of the Maricopa Area Transportation Plan to determine the viability of the conceptual Val Vista and Anderson Road Parkway planning corridors. These corridors will be needed to provide regional connectivity in the future. Currently, several alternatives have proven to be viable, but still must be thoroughly publicly reviewed. The City of Maricopa will be requesting a meeting with the Ak-Chin Indian Community to coordinate these study results and will be soliciting the Community's concerns and comments.

12. PROJECT PRIORITIZATION AND PLAN OF IMPROVEMENTS

12.1. INTRODUCTION

The transportation improvement projects that were identified in this Long Range Transportation Plan will address critical needs over a 20-year period. These projects were further prioritized into the following time frames:

- Short-range projects (FY 2016-2020)
- Mid-range projects (FY 2021-2025)
- Long-range projects (2026-2035 and beyond)

12.2. PROJECT PRIORITIZATION

Project phasing was accomplished through a process summarized as follows:

1. Develop project cost estimates for all projects
2. Use a prioritization process that ranked each project in the following categories:
 - Improves safety
 - Improves the condition of the road
 - Provides more travel options through increased transit, bicycle, or pedestrian options
 - Improves access to planned or existing Community development
 - Improves access to state routes or regionally significant roadways
 - Minimizes capital cost

Each alternative was ranked using the following scale:

- Least compatible with the goal – zero points
- Somewhat or moderately compatible with goal – one point
- Very compatible with the goal – two points

Generally, projects were assigned to the following planning horizons per the following point values (prioritization scoring is shown in **Table 12-1**):

- 8-12 points: Short-range
- 5-7 points: Mid-range
- 1-4 points: Long-range

Projects that involved studies or educational programs were generally prioritized in the short-range time frame.

It should be noted that aviation projects for the Ak-Chin Regional Airport that were recommended in the Airport Master Plan are summarized separately in **Chapter 7**.

Table 12-1: Prioritization Ranking

Project and Street or Location	From	To	Project Length (miles)	BIA Road Functional Classification	Proposed Improvement Description	Design and Construction Cost (\$)	Improves Safety	Improves the condition of the road	Provides more travel options through increased transit, bicycle, or pedestrian options	Improves access to planned or existing Community development	Improves access to state routes or regionally significant roadways	Minimizes capital cost	Total Points	Potential Time Frame
Ak-Chin Parkway construction	Vekol Wash	Ralston Road	1.1	4	Ak-Chin Parkway is constructed as a two-lane facility 35 mph facility between the Vekol Wash and Ralston Road, including new bridge	\$8,337,600	1	0	1	2	0	0	4	Long
Ak-Chin Parkway construction	Cemetery Road	Vekol Wash	1.4	4	Ak-Chin Parkway is widened to a four-lane facility between the Vekol Wash and Cemetery Road.	\$3,462,200	1	0	1	2	0	0	4	Long
Farrell Road at Vekol Wash culvert construction	N/A	N/A		4	Construct a box culvert and approaches at dip section	\$1,353,600	2	0	0	2	0	0	4	Long
Ak-Chin Parkway construction	Cemetery Road	Vekol Wash	1.4	4	Ak-Chin Parkway constructed as a two-lane 35 mph facility between Cemetery Road and Vekol Wash	\$6,986,700	1	0	1	2	0	0	4	Long
Ak-Chin Parkway construction	SR 347	Cemetery Road	1.5	4	Ak-Chin Parkway widened to a four-lane facility between SR 347 and Cemetery Rd.	\$3,729,200	1	0	1	2	0	0	4	Long
North-South road connection construction	Ak-Chin Parkway	Farrell Road	0.4	3	North-south two-lane connection between Ak-Chin Parkway to Farrell Road east of the Vekol Wash.	\$1,136,300	1	0	1	2	0	0	4	Long
Community signage at two locations	N/A	N/A	N/A	N/A	Install Community signage at two locations	\$50,000	1	1	0	2	0	1	5	Mid
Community signage at Juan Street (may be part of Antone Avenue Reconstruction project)	N/A	N/A	N/A	N/A	Install Community signage at one location	\$25,000	1	1	0	2	0	1	5	Short (based on coordination with Antone Ave project)
Decomposed granite pathways	various	various	6.2	N/A	Construct pathway	\$924,000	1	0	2	2	0	0	5	Mid
Ak-Chin Parkway	SR 347	Narcia Street	0.3	4	Construct two – lane roadway, new traffic signal and wash crossing and associated Ak-Chin Circle Road construction	Cost estimate from Ak-Chin Indian Community Capital Projects Department	2	0	2	2	2	1	9	Short
Ak-Chin Parkway	Narcia Street	Smith Wash (west of wash)			Construct a two lane roadway and bridge across the Smith Wash	\$6,060, 200								
Ak-Chin Parkway	Smith Wash (west of wash)	Cemetery Road	1.1	4	Construct a two lane road with a roundabout and associated north-south connector roads	\$9,717,000	2	0	2	2	2	1	9	Short
Pecan Subdivision Road Construction	N/A	N/A		3	Construct two lane residential streets to support road development	457,100	1	1	2	2	0	2	8	Short
Ak-Chin Circle Roads	N/A	N/A	TBD	3	Construct and/or upgrade roads when development occurs	Cost estimate from Ak-Chin Indian Community Capital	0	1	1	1	1	0	4	Long

Project and Street or Location	From	To	Project Length (miles)	BIA Road Functional Classification	Proposed Improvement Description	Design and Construction Cost (\$)	Improves Safety	Improves the condition of the road	Provides more travel options through increased transit, bicycle, or pedestrian options	Improves access to planned or existing Community development	Improves access to state routes or regionally significant roadways	Minimizes capital cost	Total Points	Potential Time Frame
						Projects Department								
Ralph Street Drainage Improvements	Smith Wash Rd	0.3 miles west of Smith Wash Rd	0.3	3	Provide erosion control, riprap and header curb	\$194,400	2	2	0	2	0	2	8	Short
Ralph Street / Smith Wash Rd	N/A	N/A	N/A	3	Paint stop bars at intersection and install speed limit signs (2) on Ralph Street	\$2,600	2	2	0	2	0	2	8	Short
Maricopa-Casa Grande Road / Anderson Rd	N/A	N/A	N/A	2	Construct 110' left turn bay (by others)	\$216,000	2	2	0	2	2	1	9	Short
Maricopa-Casa Grande Highway / Russell Road	N/A	N/A	N/A	2	Construct 110' left turn bay (by others)	\$216,000	2	2	0	2	2	1	9	Short
SR 347/ Papago Road	N/A	N/A	N/A	2	Advance street name signs are too close to the intersection (by others).	\$2,000	2	2	0	0	2	2	8	Short
Bridge Inspection Program	N/A	N/A	N/A	N/A	Bridge Inspection Program	N/A	2	2	0	2	0	2	8	Short
Carlyle Road	Farrell Rd	Eco Museum Rd	0.33	3	Striping and slurry seal	\$104,500	2	2	0	2	0	2	8	Short
Farrell Road	N/A	N/A	N/A	4	Purchase two portable speed monitors	\$30,000	2	0	2	2	0	2	8	Short
Peters and Nall Road	N/A	N/A	N/A	5	Purchase two portable speed monitors	\$30,000	2	0	2	2	0	2	8	Short
Development of brochure / articles on how to drive in a roundabout	N/A	N/A	N/A	N/A	Develop roundabout educational materials	\$2,500	2	0	0	0	0	2	4	Short
Continuation of Seat Belt Program	N/A	N/A	N/A	N/A	Continue seat belt encouragement program (4 years)	\$20,000	2	0	0	0	0	2	4	Short
Safety Plan	N/A	N/A	N/A	N/A	A Safety Plan will help provide justification for Tribal Safety Funding	\$12,500	2	0	0	0	0	2	4	Short
Farrell Road driveway closure at Enrollment and Youth Council Offices	N/A	N/A	N/A	4	Close driveway which is close to the intersection and has alternate access	\$10,600	2	2	0	2	1	2	9	Short
Church Road, Peters Avenue pathways	N/A	N/A	0.3	3	Construct 5-foot pathway	\$47,800	2	0	2	2	0	2	8	Short
Library Pathway	Library	Farrell Road	0.1	3	Construct 5-foot pathway	\$27,600	2	0	2	2	0	2	8	Short
Preschool Pathway	Parking area	Farrell Road	0.1	3	Construct 5-foot pathway	\$27,600	2	0	2	2	0	2	8	Short
Antone Avenue	Juan Street	southern end of Antone Ave	0.3	3	Reconstruct road and construct pathway	\$529,500	2	0	2	2	0	2	8	Short
Pave gravel parking lots at five locations	N/A	N/A	N/A		Health and Human Services, Health Education, and Preschool - \$136,100	\$136,100	0	2	0	2	0	1	5	Short
Repair existing paved parking lots at 7 locations	N/A	N/A	N/A		Enrollment Office and Youth Council (also recommending closing a driveway) - \$13,400	\$463,000	2	2	0	2	0	2	8	Short

Project and Street or Location	From	To	Project Length (miles)	BIA Road Functional Classification	Proposed Improvement Description	Design and Construction Cost (\$)	Improves Safety	Improves the condition of the road	Provides more travel options through increased transit, bicycle, or pedestrian options	Improves access to planned or existing Community development	Improves access to state routes or regionally significant roadways	Minimizes capital cost	Total Points	Potential Time Frame
					GIS and Capital projects –\$17,400 Elder Center main parking lot- \$14,600 Public Works and Sanitation Dept.- \$300,000 Library - \$42,900 Housing area across from Service Center and Preschool - \$25,100 Council Chambers, Planning Department- \$49,600									
Loaner vehicle for Ak-Chin Regional Airport	N/A	N/A	N/A	N/A	Purchase a loaner vehicle for use at the Ak-Chin Regional Airport	\$15,000	0	0	2	2	2	2	8	Short
Priority 1 preventive maintenance projects	N/A	N/A	N/A	Varies	preventive maintenance projects	\$300,100	Maintenance projects were prioritized under a separate analysis procedure							Short
Priority 2 preventive maintenance projects	N/A	N/A	N/A	Varies	preventive maintenance projects	\$135,400	Maintenance projects were prioritized under a separate analysis procedure							Mid
Priority 1 resurfacing projects	N/A	N/A	N/A	Varies	resurfacing projects	\$622,500	Maintenance projects were prioritized under a separate analysis procedure							Short
Priority 2 resurfacing projects	N/A	N/A	N/A	Varies	resurfacing projects	\$3,145,100	Maintenance projects were prioritized under a separate analysis procedure							Mid
Farm Vehicle Signage on SR 347 near Peters and Nall Road	N/A	N/A	N/A	2	Replace <i>Farm Vehicle</i> signage with larger signs	\$2,500	2	0	0	2	2	2	8	Short
Airstrip Repaving project (crop-dusting airstrip)	N/A	N/A	0.55	N/A	Airstrip paving	\$890,900	2	2	0	2	0	2	8	Short
Roadway Design Manual	N/A	N/A	N/A	N/A	Roadway Design Manual summarizing Community Design standards and special provisions	\$50,000	2	2	0	0	2	2	8	Short

12.3. SHORT-RANGE TRANSPORTATION PROGRAM (TRIBAL TRANSPORTATION IMPROVEMENT PROGRAM)

Short range projects total approximately \$21.1 million, which includes three phases of the Ak-Chin Parkway construction:

- Ak-Chin Parkway: SR 347 to Narcia Street - construct as a two-lane 35 mph facility with a new traffic signal at Ak-Chin Parkway/SR 347 intersection.
- Ak-Chin Parkway: west of Smith Wash to Cemetery Road - construct as a two-lane 35 mph facility. The new ROW is 110-ft. Connecting two-lane north-south roadways will be constructed as part of this project at Cemetery Road and the Alternate D Roadway.
- Ak-Chin Parkway: Narcia Street to west of Smith Wash – This two-lane road segment, which includes a bridge over Smith Wash, is anticipated to be constructed late in the short-range time (approximately 2020).

Other major projects include construction of Ak-Chin circle roads in support of the Harrah's Ak-Chin Resort and Casino Expansion, Farrell Road culvert construction at the Vekol Wash, Antone Avenue reconstruction and pathway project, Pecan subdivision road construction (underway), road maintenance and parking lot improvements, farm airstrip repaving, several other projects such as an erosion control project on Ralph Street, pathway projects, signing and striping projects and safety projects. A complete list of the recommended short-range transportation improvement program (FY 2016-2020) is summarized in **Table 12-2**. Short-range projects are shown graphically in **Figure 12-1**.

Currently Tribal Transportation Program funds are estimated to be \$1,883,108 for the period FY 2016 to FY 2020. By year, the Tribal Transportation Program shares for the Ak-Chin Indian Community are:

- FY 2016: \$375,473
- FY 2017: \$376,083
- FY 2018: \$376,688
- FY 2019: \$377,208
- FY 2020: \$377,677

Other funding sources are discussed in **Chapter 13**.

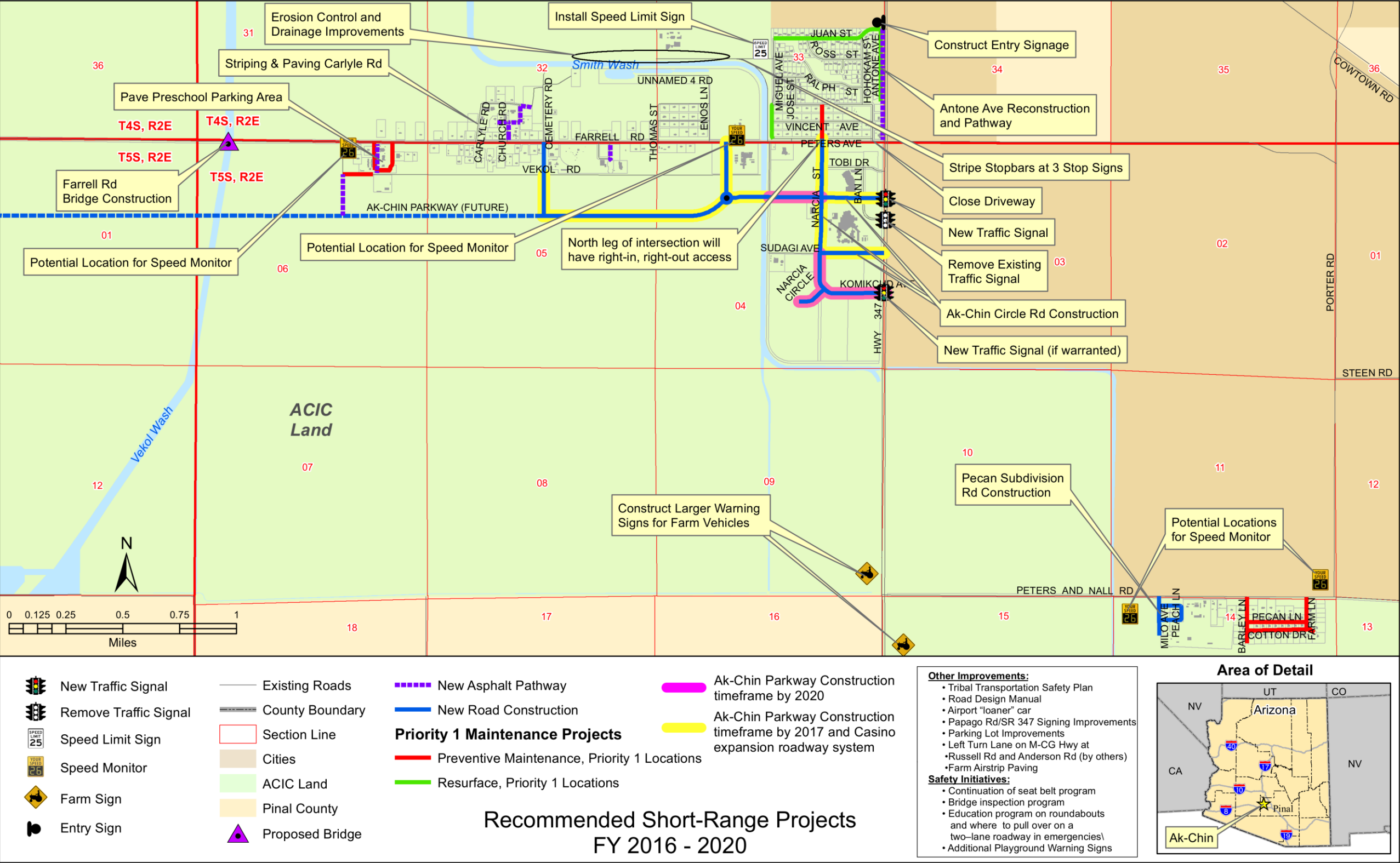


Figure 12-1: Short-Range Transportation Projects

Table 12-2: Short-Range Transportation Program, FY 2016-2020

Project and Street or Location	From	To	Project Length (miles)	BIA Road Functional Classification	Proposed Improvement Description	Design and Construction Cost (\$)	Potential Funding Sources
Ak-Chin Parkway and associated Ak-Chin Circle Roads	SR 347	Narcia Rd	0.6	4	Construct two-lane roadway, new traffic signal and associated Ak-Chin Circle road improvements	Cost estimate from Ak-Chin Indian Community Capital Projects Department - in development. Design cost is \$179,000 (reflected in total cost below)	Tribal Transportation Program funds Tribal funds
Ak-Chin Parkway	Smith Wash (west of Wash)	Cemetery Road	1.1	4	Construct a two-lane road with a roundabout and associated north-south connector roads	\$9,717,000 (currently in design)	Tribal Transportation Program funds Tribal funds Surface Transportation Program Block Grant Funds*
Ak-Chin Parkway	Narcia Street	Smith Wash (west of Wash)			Construct a two-lane road with a bridge	\$6,060,000	Tribal Transportation Program funds Tribal funds Surface Transportation Program Block Grant Funds*
Pecan Subdivision Road Construction	N/A	N/A		3	Construct two-lane residential streets to support road development	\$457,100	Tribal funds
Ralph Street / Smith Wash Rd	N/A	N/A	N/A	3	Paint stop bars at intersection and install speed limit signs (2) on Ralph Street	\$2,600	Tribal Transportation Program funds Tribal funds
Maricopa Casa-Grande Road / Anderson Rd	N/A	N/A	N/A	2	Construct 110' left turn bay	\$216,000 (assumed to be constructed by others, not included in cost estimate)	City of Maricopa funds Surface Transportation Program Highway Safety Improvement Program Tribal Transportation Program funds**
Maricopa Casa Grande Highway / Russell Road	N/A	N/A	N/A	2	Construct 110' left turn bay	\$216,000 (assumed to be constructed by others, not included in cost estimate)	City of Maricopa funds Surface Transportation Program Highway Safety Improvement Program Tribal Transportation Program funds**
SR 347/ Papago Road	N/A	N/A	N/A	2	Advance street name signs are too close to the intersection	\$2,000 (by others, not included in cost estimate)	ADOT funding Surface Transportation Program funds Tribal Transportation Program funds Tribal funds
Bridge Inspection Program					Bridge Inspection Program	N/A	ADOT Bridge Inspection Program Tribal Transportation Program funds Tribal funds
Portable speed monitors	N/A	N/A	N/A	5	Purchase four portable speed monitors	\$60,000	Tribal Transportation Program funds Tribal funds
Development of brochure / articles on how to drive in a roundabout	N/A	N/A	N/A	N/A	Develop roundabout educational materials	\$2,500	Tribal funds Tribal Transportation Program Safety Funds Governor's Office of Highway Safety Funds
Continuation of Seat Belt Program	N/A	N/A	N/A	N/A	Continue seat belt encouragement program (4 years)	\$20,000	Tribal funds Governor's Office of Highway Safety funds Tribal Transportation Program funds
Tribal Transportation Safety Plan	N/A	N/A	N/A	N/A	A Safety Plan will help provide justification for Tribal Safety Funding	\$12,500	Tribal Transportation Program Safety funds Governor's Office of Highway Safety Funds Tribal funds
Farrell Road driveway closure at Enrollment and Youth Council Offices	N/A	N/A	N/A	4	Close driveway which is close to the intersection and has alternate access	\$10,600	Tribal funds Surface Transportation Program funds Tribal Transportation Program funds

Project and Street or Location	From	To	Project Length (miles)	BIA Road Functional Classification	Proposed Improvement Description	Design and Construction Cost (\$)	Potential Funding Sources
Church Road, Peters Avenue Pathway	N/A	N/A	0.3	3	Construct 5-foot pathway	\$47,800	Tribal Transportation Program funds Tribal funds Federal Transportation Alternatives funds
Library Pathway	Library	Farrell Road	0.1	3	Construct 5-foot pathway	\$27,600	Tribal Transportation Program funds Tribal funds
Preschool Pathway	Parking area	Farrell Road	0.1	3	Construct 5-foot pathway	\$27,600	Tribal Transportation Program funds Tribal funds Federal Transportation Alternatives funds
Antone Avenue Road Reconstruction and Pathway, and Community entry signage	Juan Street	Farrell Road	0.3	3	Road Reconstruction and pathway	\$529,500	Tribal Transportation Program funds Tribal funds Federal Transportation Alternatives funds
Preventive maintenance for existing paved parking lots	N/A	N/A	N/A		Enrollment Office and Youth Council (also recommending closing a driveway) - \$13,400 GIS and Capital projects – \$17,400 Elder Center main parking lot - \$14,600 Public Works and Sanitation Dept.- \$300,000 Library - \$42,900 Housing area across from Service Center and Preschool - \$25,100 Council Chambers, Planning Department- \$49,600	\$463,000	Tribal Transportation Program funds Tribal funds
Pave gravel parking lot to serve Health and Human Services, Health Education, and Preschool	N/A	N/A	N/A		Pave gravel parking lot to serve Health and Human Services, Health Education, and Preschool	\$136,100	Tribal Transportation Program funds Tribal funds
Maintenance program for high priority (Priority 1) locations	N/A	N/A	N/A	Varies	Locations include Barley Lane, Beehive Lane, Bungler Rd, Elder Loop Rd, Farm Ln, Narcia St, Pecan Ln., Vekol Rd, Juan St, Miguel Ave	\$922,600	Tribal Transportation Program funds Tribal funds
Loaner vehicle for Ak-Chin Regional Airport	N/A	N/A	N/A	N/A	Loaner vehicle for Ak-Chin Regional Airport	\$15,000	Tribal funds
Develop Roadway Design Manual	N/A	N/A	N/A	N/A	Develop Roadway Design Manual	\$50,000	Tribal funds
Replace Farm Vehicle Signage on SR 347 with larger signage and supplemental plaques	N/A	N/A	N/A	2	Replace signage (by others)	\$2,500 (by others, not included in cost estimate)	ADOT funding
Carlyle Road improvements	Farrell Rd	Eco Museum Rd	0.33	3	Striping, seal coat	\$104,500	Tribal Transportation Program funds Tribal funds
Farrell Road at Vekol Wash bridge construction	N/A	N/A	N/A	4	Construct a box culvert and approaches at existing dip section	\$1,353,600	Tribal Transportation Program funds
Paving improvement project for airstrip used by crop-dusting planes	N/A	N/A	TBD	N/A	Paving Improvement project	\$890,900	Tribal funds
TOTAL COST						\$21,089,500	

* Note: If the Ak-Chin Parkway or any other roads in this listing are classified on the FHWA system as collectors or arterials, they will be eligible for Surface Transportation Block Grant Program funding.

** Note: One unique feature of Tribal Transportation Program funds is that they can be used as the match for other Federal funds that require a match.

12.4. MID-RANGE TRANSPORTATION PLAN

Mid-range projects are shown in **Table 12-3**. Mid-range projects are those that may be implemented in the five-year period from FY 2021-2025. These projects would need committed funds to be built.

Major mid-range projects include preventive maintenance and resurfacing projects as well as pathway and trail projects. Mid-range transportation projects are shown graphically in **Figure 12-2**. Mid-range projects total approximately \$4.3 million.

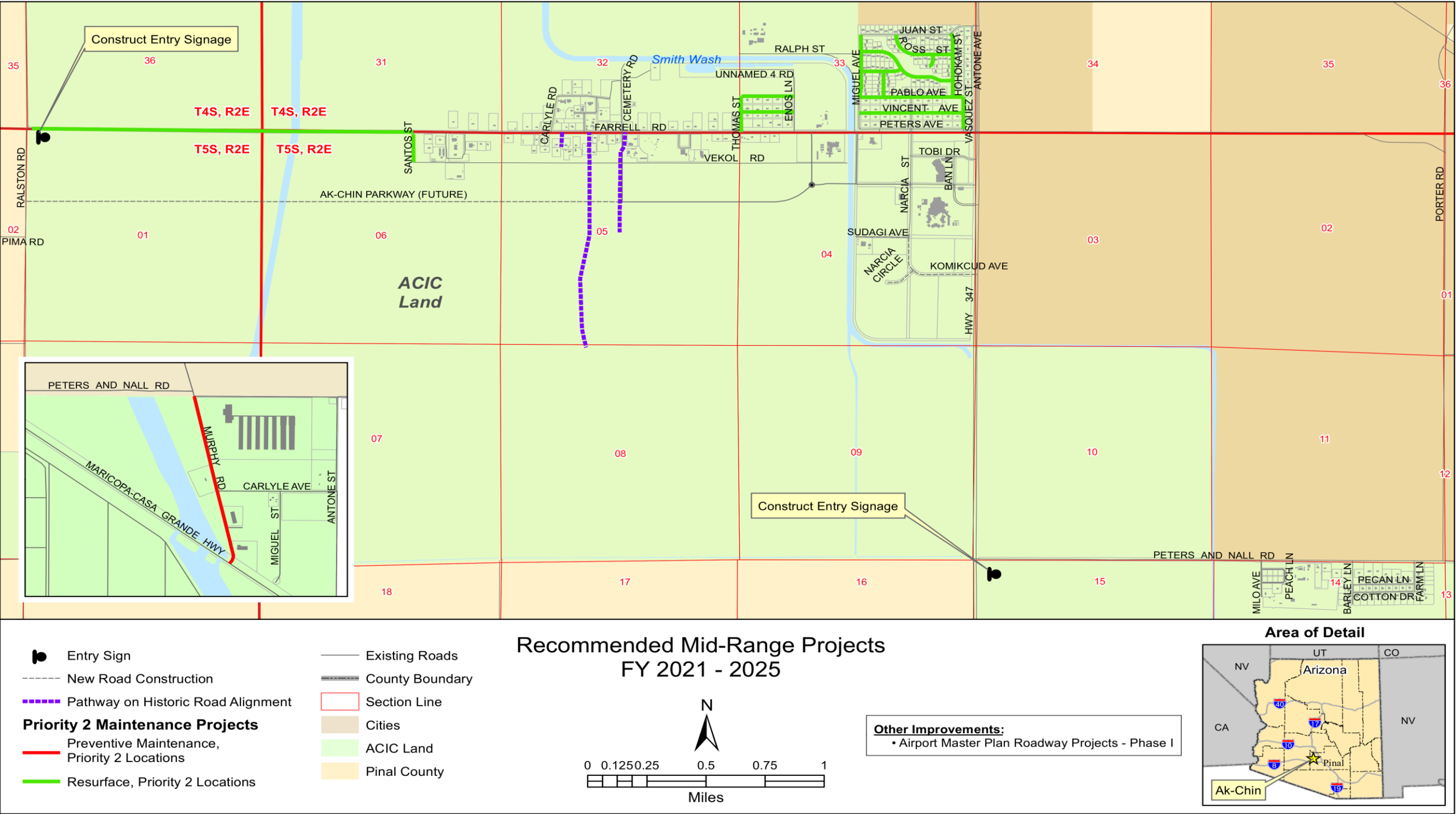


Figure 12-2: Mid-Range Transportation Projects

Table 12-3: Mid-Range Improvement Recommendations, 2021-2025

Project and Street or Location	From	To	Project Length (miles)	BIA Road Functional Classification	Proposed Improvement Description	Design and Construction Cost (\$)	Potential Funding Sources
Community signage at two locations	N/A	N/A	N/A	N/A	Install Community signage at two locations	\$50,000	Tribal Transportation Program funds Tribal funds
Decomposed granite pathways at various locations	N/A	N/A	6.2	N/A	Construct pathways	\$923,945	Tribal Transportation Program funds Tribal funds Federal transportation Alternatives funds
Maintenance program for Priority 2 ranked locations					Locations include Farrell Road (Ralston Rd to Santos Street), Vasilio St, Hohokam St, Jose St, Miguel Ave, Milton St, Pablo Ave, Peters Ave, Ralph St, Ross St, Santos St, Thomas St, Vasquez St, Vincent Ave, Murphy Rd, Vincent Ave	\$3,280,543	Tribal Transportation Program funds Tribal funds
TOTAL COST						\$4,254,488	

12.5. LONG-RANGE PROJECTS

Long-range projects are those that are recommended for implementation in the ten-year period from 2026-2035. Major long-range projects include completion of the Ak-Chin Parkway, widening of previously constructed segments of the Parkway, as traffic demand warrants, and on-going road maintenance. Long-range projects total approximately \$26.7 million. These projects are summarized in **Table 12-4**.

Long- range transportation projects are shown graphically in **Figure 12-3**.

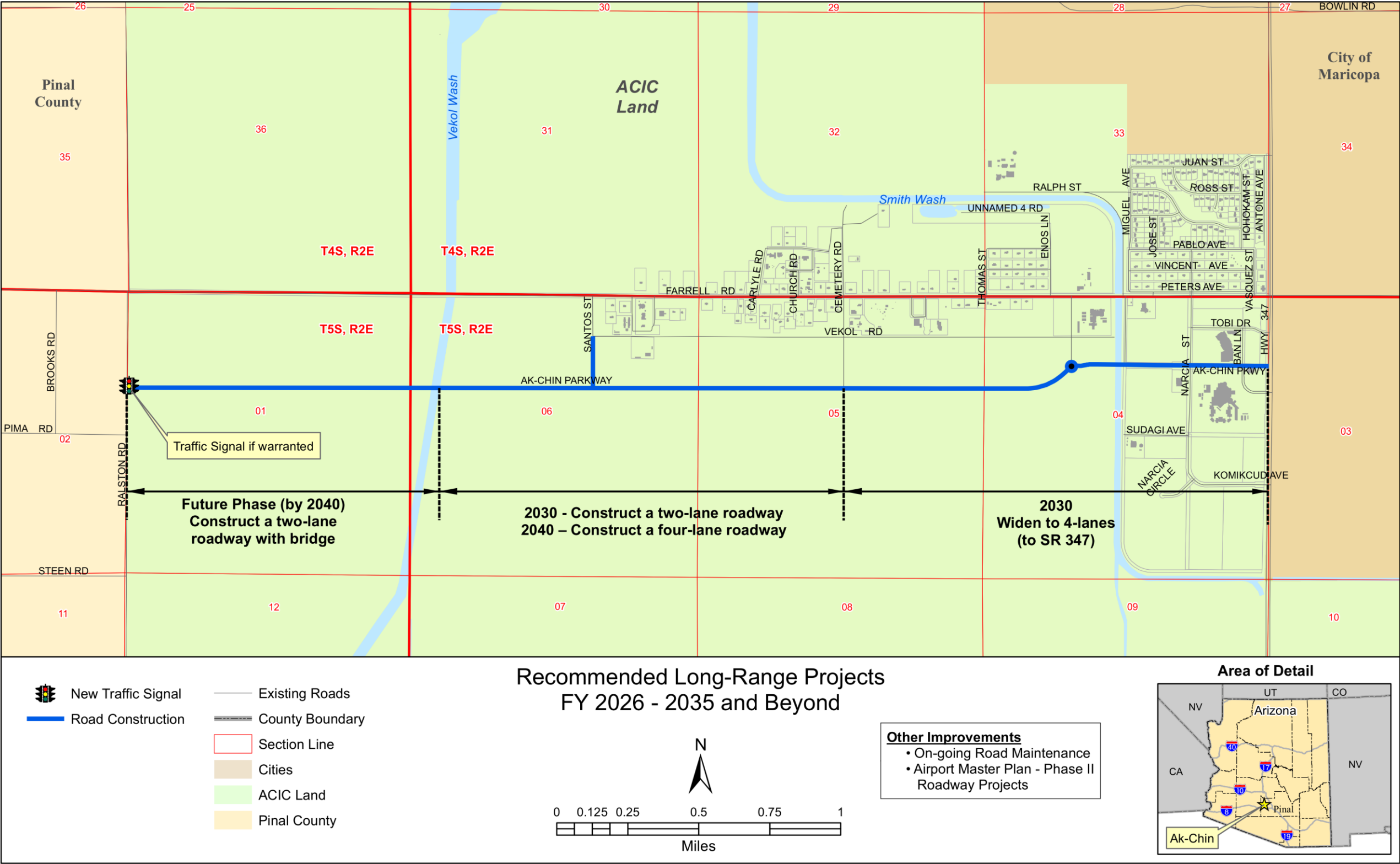


Figure 12-3: Long-Range Transportation Projects

Table 12-4: Long Range Transportation Plan, FY 2026 – 2035 and Beyond

Project and Street or Location	From	To	Project Length (miles)	BIA Road Functional Classification	Proposed Improvement Description	Design and Construction Cost (\$)	Potential Funding Sources
Ak-Chin Parkway construction	Cemetery Road	Vekol Wash	1.4	4	Ak-Chin Parkway constructed as a two-lane 35 mph facility between Cemetery Road and Vekol Wash	\$6,986,700	Tribal Transportation Program funds Tribal funds Surface Transportation Block Grant Program*
Ak-Chin Parkway construction	SR 347	Cemetery Road	1.5	4	Ak-Chin Parkway widened from two lanes (in 2018) to a four-lane facility between SR 347 and Cemetery Rd.	\$3,729,200	Tribal Transportation Program funds Tribal funds Surface Transportation Block Grant Program*
North-South road connection construction	Ak-Chin Parkway	Farrell Road	0.4	3	North-south two-lane connection between Ak-Chin Parkway to Farrell Road east of the Vekol Wash.	\$1,136,300	Tribal Transportation Program funds Tribal funds Surface Transportation Block Grant Program*
Ak-Chin Parkway construction	Vekol Wash	Ralston Road	1.1	4	Ak-Chin Parkway is constructed as a two-lane facility 35 mph facility between the Vekol Wash and Ralston Road, including new bridge	\$8,337,600	Tribal Transportation Program funds Tribal funds Surface Transportation Block Grant Program* Surface Transportation Block Grant Program*
Ak-Chin Parkway construction	Cemetery Road	Vekol Wash	1.4	4	Ak-Chin Parkway is widened to a four-lane facility between the Vekol Wash and Cemetery Road.	\$3,462,200	Tribal Transportation Program funds Tribal funds Surface Transportation Block Grant Program*
On-going maintenance budget (estimate \$300,000 per year)	N/A	N/A	N/A	Varies	Resurfacing and preventive maintenance projects	\$3,000,000	Tribal Transportation Program funds Tribal funds
TOTAL COST						\$26,652,000	

* Note: If the Ak-Chin Parkway or any other roads in this listing are classified on the FHWA system as collectors or arterials, they will be eligible for Surface Transportation Block Grant Program funding.

13. 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.

On December 4, 2015, President Obama signed the Fixing America's Surface Transportation (FAST) Act (Pub. Law. No. 114-94) into law. The *Tribal Transportation Program* under the FAST Act provides \$465 million in FY 2016, increasing to \$505M in 2020 for projects that improve access to and within Tribal lands.

This program generally continues the previous Indian Reservation Roads (IRR) Program, while adding set-asides for:

- Program administration – Up to 5% for program administration, including funding for Tribal Technical Assistance Centers.
- Tribal planning – Up to 2% for transportation planning.
- Tribal bridges – Up to 3% for a nationwide priority program for improving eligible deficient bridges.
- Tribal safety projects – Up to 2% for safety projects, to be allocated to applicant tribal governments for projects eligible under the Highway Safety Improvement Program
- Road maintenance – Up to 25% for road maintenance or \$500,000, whichever is greater.
- Tribal supplemental funding – An amount of funding equal to \$82.5 million, plus 12.5% of the amount by which total TTP funding in a fiscal year exceeds \$275 million. The FAST Act continues to distribute Tribal supplemental funding to BIA regions based on the cumulative tribal shares in each region and then further distributes to Tribes within the region.

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

- Roadway (**Table 13-1**)
- Safety (**Table 13-2**)
- Bicycle, Pedestrian, and Equestrian (**Table 13-3**)
- Transit (**Table 13-4**)

The Community is moving towards a Compact under the Tribal Transportation Self Governance Program established with the FAST Act.

Table 13-1: Roadway 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. 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 August	Stacey Begay, Supervisory Community Planner BIA Western Regional Office BIA Division of Transportation 2600 N Central Ave., Ste. 400, MS-370 Phoenix, AZ 85004 Phone: (602) 379-6782, x1332 Email: Stacy.Begay@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. Funding decisions are made jointly by FHWA and BIA		Stacey Begay See above for contact information
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	Stacey Begay See above for contact information
National Bridge and Tunnel Inventory		Tribal bridges will need to be inspected, classified, and inventoried. 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	Stacey Begay See above for contact information

Program	Administering Agency	Uses of Funds	Funding Level	Program Details	Application Deadline	Contact
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. Arizona will receive about \$206 million in FY 2016, increasing to \$224 million in 2020. Some of the funding is sub-allocated to MPOs and COGs.	Varies by year	Project is scoped and request for funding submitted to CAG. Project is funded if it is added to RTIP and STIP.		Travis Ashbaugh, Transportation Planning Manager Central Arizona Governments 1075 S. Idaho Rd, Suite 300; Apache Junction, AZ 85119 Phone: (480) 474 - 9300 Email: tashbaugh@cagaz.org
State Highway Users Revenue Funding (HURF)	Allocated by formula to ADOT, counties, cities, and towns	Any roadway purpose. Tribes are not eligible for this funding because of provisions in the Arizona State Constitution. However, state, county and city owned roads are. Therefore, improvements to state routes 347 and 238 and the Maricopa - Casa Grande Highway are eligible for HURF funding.	Varies by jurisdiction	Each receiving governmental agency programs the funding allocated to them.	No application required however agencies typically update their program annually.	ADOT District Engineer Pinal County Public Works Department
Planning Assistance for Rural Areas (PARA) Program	ADOT	Multimodal 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 Dan Gabiou Planning Program Manager Phone: (602) 712-7025 dgabiou@azdot.gov http://www.azdot.gov/planning/CurrentStudies/PARASTudies

Program	Administering Agency	Uses of Funds	Funding Level	Program Details	Application Deadline	Contact
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

Table 13-2: 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 CAG	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. Arizona receives between \$42 million and \$46 million per year.	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 Travis Ashbaugh, Transportation Planning Manager Central Arizona Governments 1075 S. Idaho Rd, Suite 300; Apache Junction, AZ 85119 Phone: (480) 474 - 9300 Email: tashbaugh@cagaz.org
Tribal Transportation Program Safety Funds (TTPSF)	FHWA	Funds to be provided based on identification and analysis of highway Safety issues and opportunities on tribal lands. Funding goals have been established in four categories under TTPSF: Safety Planning (40%); Engineering Improvements (30%); Enforcement/EMS (20%); and Education (10%).	Approx. \$9 million/year nationally	To be determined. New program under MAP-21 and increased under the FAST Act	To be determined, the FY 2016 notice for applications has not come out as of June 7, 2016.	Stacey Begay, Supervisory Community Planner BIA Western Regional Office BIA Division of Transportation 2600 N Central Ave., Ste. 400, MS-370 Phoenix, AZ 85004 Phone: (602) 379-6782, x1332 Email: Stacy.Begay@bia.gov

Program	Administering Agency	Uses of Funds	Funding Level	Program Details	Application Deadline	Contact
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/
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 along with supporting documentation and available crash data.	Anytime	Ron Foluch, P.E. Road Safety Assessment Program Coordinator 1615 West Jackson St., Mail Drop 065R Phoenix, AZ 85007-3217 Phone: 602-712-8116 Fax: 602-712-3243 Email: rfoluch@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 13-3: Funding for Pedestrian and Bicycle Projects

Program	Administering Agency	Uses of Funds	Funding Level	Program Details	Application Deadline	Contact
Transportation Alternatives Program	ADOT and CAG	The FAST Act eliminates the MAP-21 Transportation Alternatives Program (TAP) and replaces it with a set-aside of Surface Transportation Block Grant (STBG) program funding for transportation alternatives (TA). These set-aside funds include all projects and activities that were previously eligible under TAP, encompassing a variety of smaller-scale transportation projects such as pedestrian and bicycle facilities, recreational trails, safe routes to school projects, Community improvements such as historic preservation and vegetation management, and environmental mitigation related to stormwater and habitat connectivity.	To be determined	Funded through a competitive process	May 1st	Travis Ashbaugh, Transportation Planning Manager Central Arizona Governments 1075 S. Idaho Rd, Suite 300; Apache Junction, AZ 85119 Phone: (480) 474 - 9300 Email: tashbaugh@cagaz.org

Table 13-4: Transit Funding Sources

Program	Administering Agency	Uses of Funds	Funding Level	Program Details	Application Deadline	Contact
Formula Grant for Rural Areas	ADOT and FTA	Provides capital, planning, and operating assistance to states to support public transportation in rural areas with populations less than 50,000, where many residents often rely on public transit to reach their destinations.	Formula grant	Funded through a competitive process	May 1st	Mike Normand, Transit Manager (602) 712-8243 dnormand@azdot.gov
Tribal Transit Formula Grants - 5311(c)(2)(B)	FTA	Provides funding to federally recognize Indian tribes to provide public transportation services on and around Indian reservations or tribal land in rural areas. Funding is provided as a set-aside within of the Formula Grants to Rural Areas program and allocated both by statutory formula and through a competitive discretionary program.	TBD	Funded through a competitive process	TBD	Office of Program Management Federal Transit Administration 1200 New Jersey Avenue, S.E. Washington, DC 20590 202-366-2053 https://www.transit.dot.gov/funding/grants/grant-programs/tribal-transit-program

14. IMPLEMENTATION RESOURCES

This chapter describes some transportation project implementation resources that the Ak-Chin Indian Community may want to consider in the future.

14.1. PLANNING ASSISTANCE FOR RURAL AREAS PROGRAM FOR THE DEVELOPMENT OF PRE-SCOPING REPORTS

The Planning Assistance for Rural Areas (PARA) program is sponsored by the ADOT Multimodal Planning Division (MPD) to provide assistance to Tribal Government and local public agencies in the development of Preliminary Scoping (Pre-Scoping) Reports and Planning Studies that lead to transportation improvements. “Pre-Scoping” refers to a process where ADOT will assist a Tribal Government or local public agency to develop a realistic scope of work, schedule, and budget for a simple transportation project. Pre-Scoping helps to reduce scope changes and rework during the design phase and improves overall project success.

The PARA Program is competitive and covers 100% of the Pre-Scoping cost, meaning there is no funding match required on the applicant’s part, however the grants are awarded competitively and an application must be submitted. In FY 2016, the application deadline was May 31, 2016.

Eligible Pre-Scoping project examples include:

- Pavement and bridge preservation (less than 2 miles in length)
 - Roadway maintenance
 - Bridge rehabilitation
 - Bridge scour retrofit
- Minor safety and mobility improvements (less than 2 miles in length)
 - ADA, bicycle, and pedestrian improvements
 - Adding roadway shoulder / safety edge
 - Adding sidewalk / shared-use path
 - Adding bus stops or bus pull-outs
 - Adding striping / delineators / rumble strips / guard rail
 - Adding or replacing signs or lighting
 - Road diets
 - Roundabouts
 - Minor drainage improvements

Other project types may be considered depending on complexity

Ineligible project examples include:

- Project with lengths that exceed 2 miles
- Projects that would require extensive right-of-way acquisition
- Projects that require alternatives analysis
- Bridge replacement projects
- Major expansion projects (such as adding a new bridge or roadway)

Other projects may be ineligible based on complexity.

An overview of ADOT and Tribal government responsibilities for the pre-scoping projects are:

- ADOT Responsibilities – The ADOT Project Manager will be responsible for overall Pre-Scoping management, including task management, budget management, consultant selection, administration, and invoicing.
- Tribal government applicant Responsibilities – In general, the LPA will be responsible for providing staff that will perform the following functions:
 - Securing a meeting room for the Pre-Scoping Kick-Off Meeting (KOM) (close to the project site)
 - Attending the Kick-Off Meeting and Field Review
 - Provide local perspectives and input to the Pre-Scoping Team
 - Reviewing and commenting on all materials in a timely manner

A Frequently Asked Questions page is provided on the PARA website at:

<http://www.azdot.gov/docs/planning/para-program-frequently-asked-questions.pdf?sfvrsn=0>

14.2. INTEGRATING STATEWIDE AND TRIBAL TRANSPORTATION PLANNING WORKSHOP CURRICULUM

The ADOT MPD encourages tribal planning staff and leadership to review the curriculum for the recently developed Integrating Statewide & Tribal Transportation Planning Workshop. The development of the workshop is the result of a yearlong project administered by ADOT with input from tribal planning representatives. It is also offered in follow-up to the transportation planning projects completed through the ADOT Planning Assistance for Rural Areas Program for a number of Tribal Communities. The general intent of the workshop is to assist various tribal departmental staff and tribal elected officials to understand what is involved in working through the transportation project planning, programming, implementation (development/construction), and maintenance phases. The workshop provides an interactive approach with understandable material that integrates state and tribal transportation planning processes. The workshop addresses the following topics:

- How do you take a transportation project from an “Idea” or “Concept” from planning to implementation?
- Transportation planning process
- Project prioritization
- Funding sources
- Programming process
- Implementation (Development and Construction) procedures
- Maintenance strategies

The workshop curriculum is available in electronic CD format upon request through the ADOT Multimodal Planning Division Tribal Planning and Coordination Program.