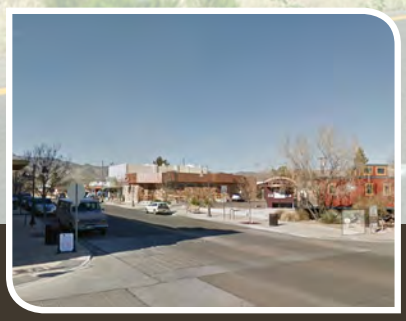
ADOT

Verde Valley Master Transportation Plan








Final Report

September 2016

JACOBS®

This report was funded in part through grants 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.

TABLE OF CONTENTS

Page

1. INTRODUCTION 1
Study Area Overview 1
Purpose and Need 4
Goals and Objectives 4
Study Process 5

2. PREVIOUS STUDIES, REPORTS, AND PLANS 6
Ongoing and Completed Studies 6
Programmed and Scoped Projects 13
State Route 260 Programmed Improvements 15

3. EXISTING AND FUTURE SOCIOECONOMIC CONDITIONS 16
Planned Developments 16
Existing and Future Population and Housing Units 17
Employment Forecasts 18

4. EXISTING AND FUTURE TRANSPORTATION CONDITIONS 23
Existing Roadway Characteristics 23
Existing Traffic Conditions 35
Crash Data Analysis 40
Access Management 46
Future Traffic Conditions 48
Other Modes of Transportation 53
Transportation Issues Summary 62

5. EVALUATION OF IMPROVEMENTS 65
Evaluation Criteria and Process 65
Non-Capacity Related Improvement Options 66
Capacity Related Improvement Options 75
Evaluation of Pedestrian, Bicycle, and Trail Improvements 85
Evaluation of Transit Needs 85

TABLE OF CONTENTS (CONTINUED)

Page

6. STAKEHOLDER AND PUBLIC INPUT 88

Public Involvement 88
Agency/Stakeholder Coordination 91

7. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONCERNS 94

Topography and Geology 94
Vegetation 95
Threatened, Endangered, and Sensitive Species 95
Hydrology 99
Prime and Unique Farmlands 101
Noise Impacts 101
Air Quality 101
Hazardous Materials 102
Visual Resources 103
Cultural Resources 104
Section 4(F) and Section 6(F) 106
Environmental Justice (Title VI) 107

8. TRANSPORTATION IMPROVEMENT PLAN 108

Roadway Improvement Recommendations 108
Near-Term Improvements 108
Mid-Term Improvements 159
Long-Term Improvements 178
Environmental Considerations 186
Congestion Management Strategies 187
Pedestrian, Bicycle, and Trail Improvement Recommendations 188
Transit Service Recommendations 188
Title VI Implications 190

9. IMPLEMENTATION AND FUNDING STRATEGIES 191

Funding Sources 191
Implementation Strategies 201

LIST OF TABLES

Page

2.1: VVMTS Proposed Roadway Improvement Projects 6

2.2: ADOT State Transportation Improvement Program FY 2016 – 2020 13

2.3: NACOG Regional Transportation Improvement Program FY 2015 – 2023 13

2.4: ADOT Airport Capital Improvement Program FY 2016 – 2020 14

3.1: Projected Study Area Population and Housing Units (2015 – 2040) 17

3.2: Projected Study Area Employment (2015 – 2040) 18

4.1: FHWA Functional Classification Definition 23

4.2: International Roughness Index (IRI) 28

4.3: Roadway Segments in Fair or Poor Condition 28

4.4: Roadway Segments with Narrow Shoulders 31

4.5: Bridge Condition Rating 33

4.6: Study Area Bridge Conditions 34

4.7: Equivalent Property Damage Only 43

4.8: Funded Roadway Improvement Projects 48

4.9: Existing CAT Ridership Summary 59

4.10: Human Service Transit Providers 60

4.11: Persons Below Poverty Level and Persons with No Vehicles 61

5.1: Evaluation Criteria 65

5.2: Evaluation of Road Surface Treatment Projects 67

5.3: Evaluation of Road Shoulder Improvement Projects 69

LIST OF TABLES (CONTINUED)

Page

5.4: Evaluation of Bridge Improvement Projects 71

5.5: Recommended Complete Street Cross-Sections 74

5.6: Persons Below Poverty Level and Persons with No Vehicles 86

7.1: Special Status Species and Critical Habitats in Project Vicinity 97

7.2: Hazardous Material Sites 103

8.1: Recommended Near-Term Improvement Projects 108

8.2: Recommended Mid-Term Improvement Projects 159

8.3: Recommended Long-Term Improvement Projects 178

8.4: Impacts and Advantages of Recommended Projects to Title VI Populations 190

9.1: Potential Funding Sources 192

LIST OF FIGURES

Page

1.1: Study Area 2

1.2: Study Process 5

2.1: Scheduled State Route 260 Widening Project 15

3.1: Potential Growth Areas 16

3.2: Projected 2025 Housing Unit Density 19

3.3: Projected 2040 Housing Unit Density 20

3.4: Projected 2025 Employment Density 21

3.5: Projected 2040 Employment Density 22

4.1: FHWA-Approved Functional Classification 24

4.2: Number of Lanes 26

4.3: Posted Speed Limits and Traffic Control Devices 27

4.4: Pavement Conditions 30

4.5: Shoulder Conditions 32

4.6: Bridge Conditions 33

4.7: Level of Service 35

4.8: Existing Traffic Counts 38

4.9: Existing Roadway Congestion Levels 39

4.10: Crash Trends by Jurisdiction from January 2009 to October 2014 40

4.11: Number of Crashes per Location 41

4.12: Crash Density and Fatal Crash Locations 42

4.13: West Sedona and Cottonwood Driveway Spacing 47

4.14: Scheduled State Route 260 Widening Project 48

4.15: 2025 Nobuild Level of Congestion 51

4.16: 2040 Nobuild Level of Congestion 52

4.17: Existing Pedestrian, Bicycle, and Trail Facilities 54

4.18: Cottonwood Area Transit Service Routes 56

LIST OF FIGURES (CONTINUED)

Page

4.19: Cottonwood Area Transit Routes Schedules 57

4.20: Verde Lynx Service Route 57

4.21: Yavapai-Apache Transit Service Route 58

4.22: Existing Cottonwood Area Transit Total Ridership 59

4.23: Existing Roadway Issues and Concerns 63

4.24: Existing Multimodal Transportation Issues, Concerns, and Needs 64

5.1: Road Surface Treatment Projects 66

5.2: Shoulder Widening Projects 68

5.3: Bridge Improvement Projects 70

5.4: Alternative 1 77

5.5: Alternative 1 Level of Congestion 78

5.6: Alternative 2 80

5.7: Alternative 2 Level of Congestion 81

5.8: Alternative 3 82

5.9: Alternative 3 Level of Congestion 84

5.10: Pedestrian, Bicycle, and Trail Improvements 87

7.1: Wildlife Corridors and Hydrologic Features 98

7.2: Hazardous Materials Sites 102

8.1: Recommended Near-Term Improvement Projects 113

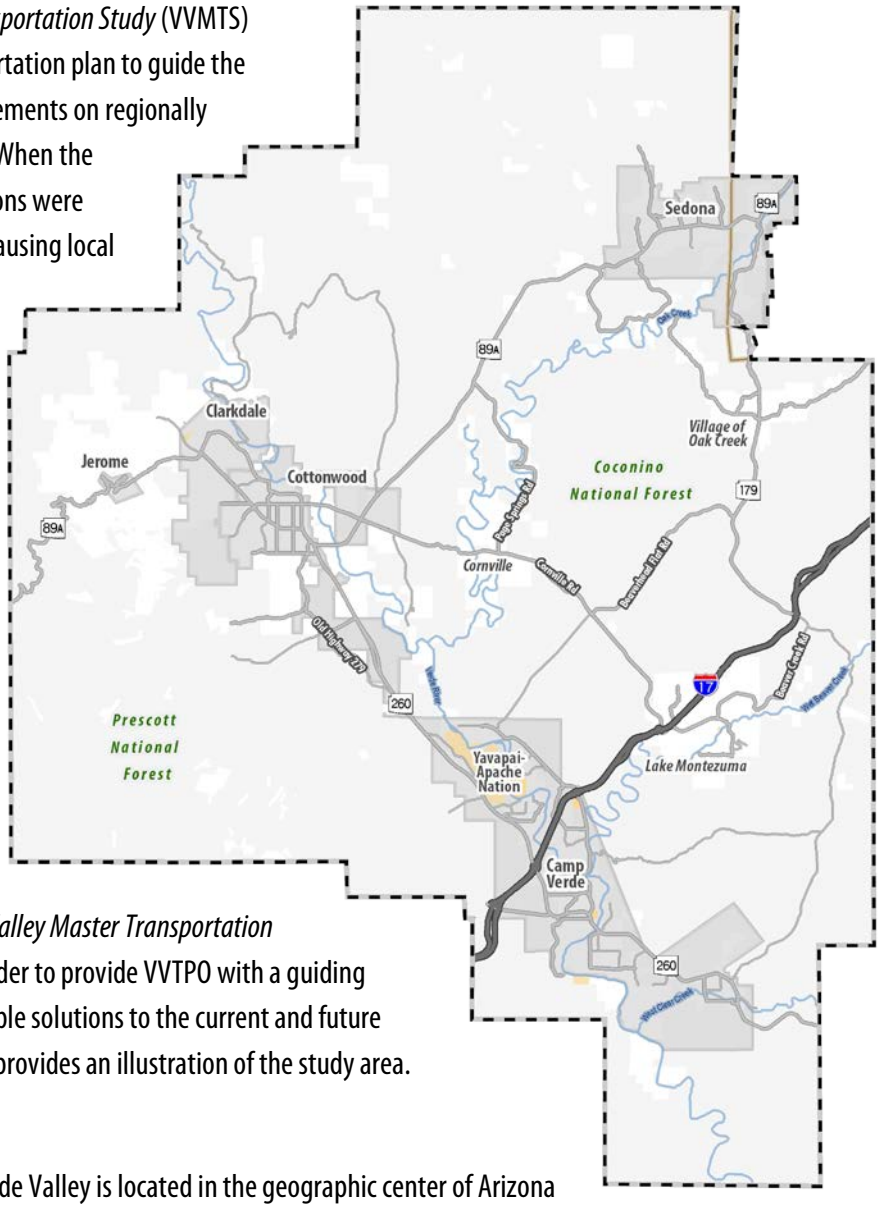
8.2: Recommended Mid-Term Improvement Projects 161

8.3: Recommended Long-Term Improvement Projects 179

8.4: Recommended Pedestrian, Bicycle, and Trail Improvements 189

Chapter 1 Introduction

In 2009, the *Verde Valley Multimodal Transportation Study* (VVMTS) established a long-range regional transportation plan to guide the implementation of transportation improvements on regionally significant roadways in the Verde Valley. When the VVMTS was developed, economic projections were optimistic and funding levels were high, causing local agencies and the Verde Valley Transportation Planning Organization (VVTPO) to expect significant growth and numerous transportation improvements. Since the economic downturn, growth trends and funding availability have altered dramatically. Additionally, the US Census Bureau has released updated population data, and numerous planning studies and General Plans have been updated/developed for VVTPO member agencies. With the ultimate goal of developing a regionally cohesive framework of multimodal transportation improvements, the *Verde Valley Master Transportation Plan* aims to update the 2009 VVMTS in order to provide VVTPO with a guiding document that provides realistic and feasible solutions to the current and future multimodal needs of the area. Figure 1.1 provides an illustration of the study area.



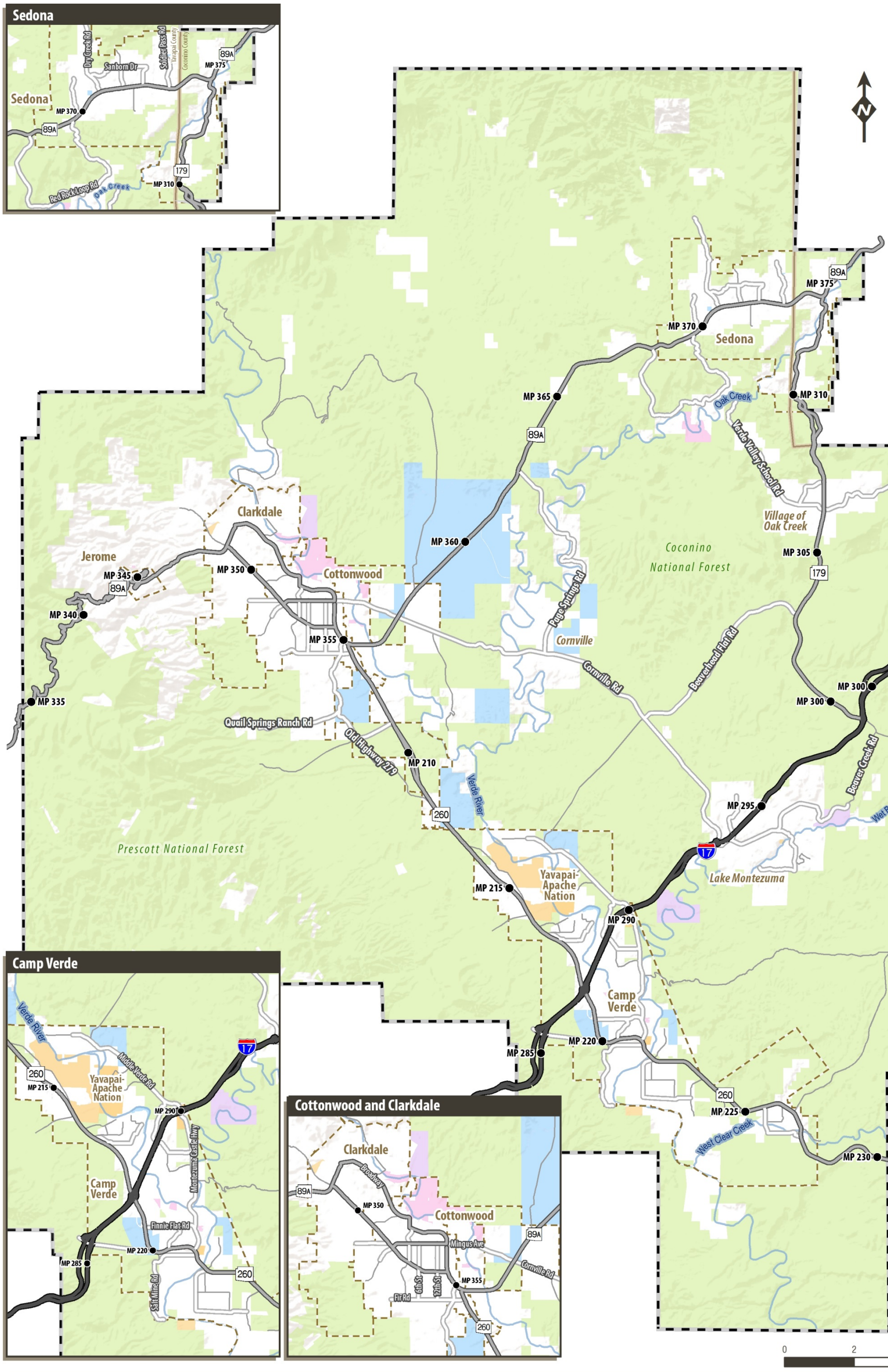
STUDY AREA OVERVIEW

Covering 673 square miles of land, the Verde Valley is located in the geographic center of Arizona approximately 100 miles north of the Phoenix metropolitan area. Voted by the USA Weekend as "America's Most Beautiful Place", the Verde Valley is situated along the scenic Verde River and incorporates portions of the Coconino and Prescott National Forests. Due to the region's natural, historical, and cultural attractions, the area sustains a thriving tourist industry. Connected by a network of state and local roads, the Verde Valley includes the following communities:

Town of Camp Verde

Established in 1865 as a first military post, Camp Verde is the earliest community in the Verde Valley thus providing the Town with a long and rich history. Described as the gateway to the Verde Valley, Camp Verde is located at the junction of I-17 (principal route between Phoenix and Flagstaff) and SR 260 (scenic route to the Mogollon Rim east of the Study Area). Starting in 2001, the Town initiated the redevelopment of their historic downtown by installing thematic streetscape to preserve and enhance the historic character of Camp Verde and to promote economic activity.

Figure 1.1: Study Area



Town of Clarkdale

Founded by the United Verde Copper to provide housing and services to their employees, Clarkdale is an early example of a planned community. Clarkdale's Downtown Business District is recognized as a Historic District on the National Register of Historic Places. Originally the rail line for the United Verde Copper, the Verde Canyon Railroad is now a major tourist attraction that offers four-hour scenic tour of the Sycamore Canyon Wilderness Area. Northeast of Clarkdale is the Tuzigoot National Monument, an 800 year old Sinagua pueblo, that attracts over 74,000 visitors a year.

City of Cottonwood

Located along the Verde River, Cottonwood was named for the cottonwood trees lining the river's valley. Following mining developments in nearby Jerome and Clarkdale, Cottonwood was established as an alternative to the company owned mining towns. As one of the economic hubs of the Verde Valley, Cottonwood serves as the Verde Valley's center of retail, commercial, medical, educational, and government services.

Town of Jerome

Located on top of Cleopatra Hill, between Prescott and Clarkdale, Jerome was originally established in 1876 as a copper mining camp. Located next to what was once the largest copper mine in Arizona, Jerome was formerly the largest city in Arizona. When the Phelps Dodge Mine closed in 1953, Jerome was called the world's "biggest ghost city." Designated as a National Historic District, Jerome now is a thriving artist community with a wide variety of antique shops, art galleries, and boutiques.

City of Sedona

Often referred to as the "most beautiful place in America", Sedona is surrounded by spectacular red rock formations and canyons. Incorporated in 1988, Sedona is divided between Coconino and Yavapai counties with resident's having local control. Due to the city's majestic landscape, it has become one of the largest tourist destinations in Arizona. According to the city's visitor bureau, Sedona attracts nearly 4 million visitors per year. Major tourist attractions in Sedona include Oak Creek Canyon, Slide Rock State Park, Chapel of the Holy Cross, and countless recreational hiking trails.

Yavapai-Apache Nation

The Yavapai-Apache Nation consists of two distinctive Tribes that speak two indigenous languages. The Yavapai-Apache Nation Indian Reservation was established by Executive Order from the President of United States on February 27, 1875. The Cliff Castle Casino, owned and operated by the Tribe, includes a casino, hotel, and dining facilities and is one of the largest employers in the Verde Valley.

Cornville

Cornville is a rapidly growing area that serves as a bedroom community for nearby Sedona and Cottonwood. Located along Oak Creek, the Cornville area has grown into a very successful wine producing region with numerous vineyards.

Lake Montezuma

Lake Montezuma is a Census Designated Place located northeast of Camp Verde. Originally Lake Montezuma started as a planned development around the Beaver Creek Golf Course and now includes the communities of Rimrock and McGuireville.

Village of Oak Creek

Once a sleepy retirement community, the Village of Oak Creek is a fast growing urban area south of Sedona. Tourism and services for retirees and second-home owners is the basis of this community's economy.

Verde Village

Verde Village is a Census Designated Place located southeast of Cottonwood. Developed in the 1970s, Verde Village is a retirement community with eight separate subdivisions.

PURPOSE AND NEED

The primary purpose of this study was to develop a regionally cohesive, long-range transportation plan that serves as a guide for Verde Valley Transportation Planning Organization's (VVTPO) participating agencies when making future land use and multimodal transportation improvement project decisions. The need for this study stems directly from VVTPO member jurisdiction's need to determine existing system performance, increase economic vitality, improve community livability, and enhance transportation conditions along the regional transportation routes.

The *2009 Verde Valley Multimodal Transportation Study* (VVMTS) was originally developed to guide the implementation of transportation improvements in the Verde Valley. Optimistic economic projections and the ability to obtain project funding led local agencies and the VVTPO to presume that the region would experience significant growth that would require numerous transportation improvements. Due to the slowing of economic growth, dramatic changes in funding availability, and updated local planning studies, it is essential that VVTPO member agencies have an accurate assessment of the performance of major roads in their respective jurisdictions as well as a planning tool for programming the region's transportation improvements.

WHY IS THIS PLAN NEEDED?

ESTABLISH A REGIONALLY COHESIVE FRAMEWORK

Establish a vision for an efficient, seamless transportation system that links communities in the Verde Valley by all modes of transportation.

ENHANCE MOBILITY AND IMPROVE SAFETY

Population growth coupled with increased commuter and tourist traffic has amplified congestion and safety concerns.

SUPPORT PLANNED LAND USE AND FUTURE GROWTH

Planned growth will require updated facilities to accommodate traffic and to promote multimodal transportation.

ADDRESS SAFETY AND OPERATIONAL NEEDS

The roadway network needs to be evaluated to identify solutions to improve safety, mobility, and to optimize traffic operations.

PROMOTE ECONOMIC GROWTH AND COMMUNITY LIVABILITY

Develop a plan for investments that strengthens local businesses, spurs business growth, encourages activities, and promotes tourism.

GOALS AND OBJECTIVES

With the overall goal to improve safety and mobility, the primary goals and objectives of this study are:

IDENTIFY EXISTING AND FUTURE NEEDS AND DEFICIENCES

- Analyze existing roadway conditions to determine areas in need of improvements

DEVELOP FRAMEWORK FOR SAFE AND EFFICENT TRANSPORTATION

- Reduce congestion on local and regionally significant routes
- Incorporate strategies to promote safety for all travel modes

CREATE PLAN TO IMPROVE CONNECTIVITY AND MOBLITY

- Increase connectivity between modes
- Increase access to activity centers and communities
- Provide alternative routes

FOSTER LIVABILITY, QUALITY OF LIFE AND SUSTAINABLE DEVELOPMENT

- Coordinate with partners and other jurisdictional plans and objectives
- Support area economic developments
- Enhance livability in rural and urban communities

INCREASE MULTIMODAL OPTIONS

- Identify corridors and sites that need transit service
- Enhance non-automobile modes for travel and recreation

PRIOIRTIZE INVESTMENT STRATEGIES

- Preserve and maximize the utilization of existing infrastructure
- Consider cost-effectiveness and constructability

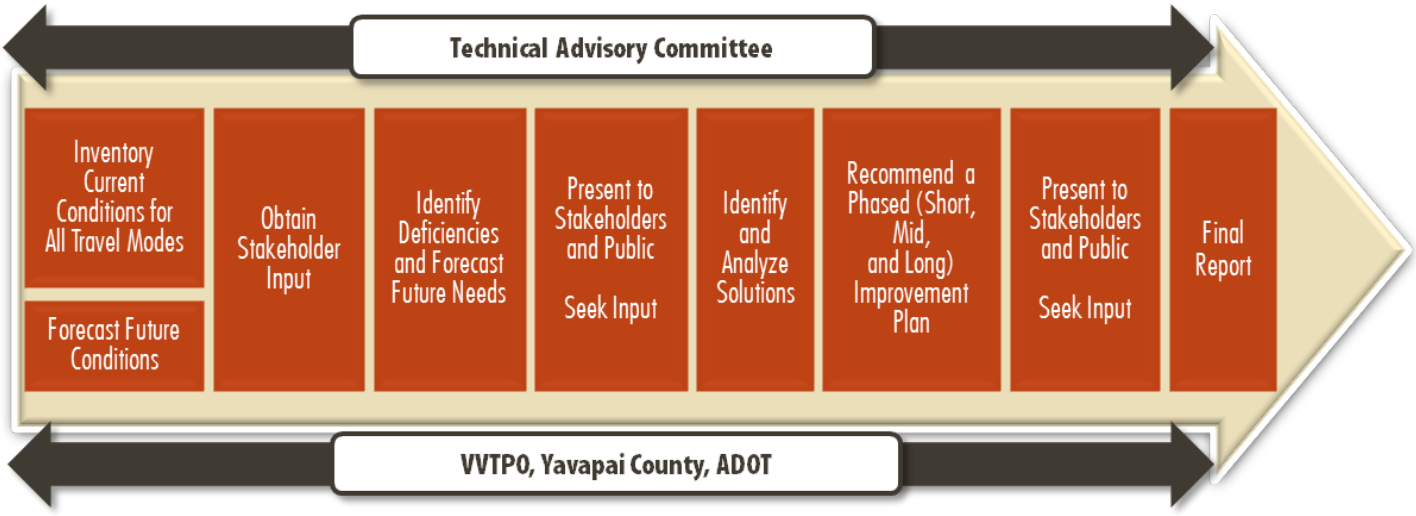
STUDY PROCESS

The development of a transportation plan is a technical, collaborative process that involves affected parties within the Verde Valley, including local jurisdictions, regional agencies, stakeholders, and the general public. For this study, six key stages are followed in order to ultimately develop a regionally cohesive, fiscally constrained improvement plan. Throughout the process, the study team maintained consistent contact with the TAC, and stakeholders and conducted extensive public outreach efforts. Figure 1.2 illustrates the process that is utilized for this study.

The first working paper, *Working Paper 1: Existing Conditions* presented an inventory and analysis of current socioeconomic and transportation conditions in the study area. The existing conditions inventory and analysis presented in Working Paper 1 assists in identifying existing transportation system deficiencies, issues, and needs. The second working paper, *Working Paper 2: Future Conditions*, documented population, housing, and employment forecasts and the impacts of potential growth on the area's transportation system. Working Paper 2 assessed the potential strain on the study area's transportation system for the 2025 and 2040 horizon years *if no transportation improvements are implemented*.

Working Paper 3: Draft Transportation Improvement Plan presented improvement concepts to address future multimodal travel demand which was developed utilizing deficiencies and needs identified in Working Papers 1 and 2. The Transportation Improvement Plan is a phased, multimodal transportation improvement plan for regionally significant routes in the Verde Valley.

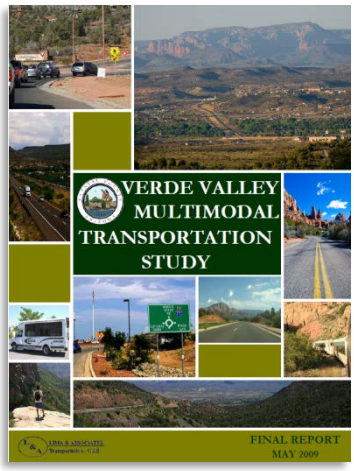
Figure 1.2: Study Process



This chapter presents a review of studies, plans, and programs relevant to this study. Review of completed and current planning efforts often provides an insight into previously identified transportation issues and potential transportation improvements. This chapter also summarizes approved future transportation improvements within the study area.

ONGOING AND COMPLETED STUDIES

2009 Verde Valley Multimodal Transportation Study



Funded by Yavapai County, the 2009 *Verde Valley Multimodal Transportation Study* (VVMTS) was developed to serve as a guide for the implementation of transportation improvements of regional significance in the Verde Valley. The study included analysis of I-17, State Routes, county roadways, and some local city and town streets. In order to accurately assess traffic conditions for the existing, short-, mid-, and long-term phases a detailed travel demand model was developed with over 250 Traffic Analysis Zones (TAZ) and a comprehensive roadway network. Based on data analysis and input received from study stakeholders, TAC members, the study team, and the public produced a three-phased multimodal transportation improvement plan. Table 2.1 summarizes the recommended improvement projects as well as each project's current status.

Table 2.1: VVMTS Proposed Roadway Improvement Projects

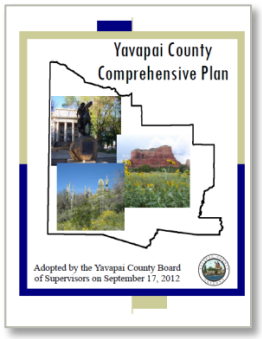
Project Location	Recommended Improvement	Project Status
Cornville Road: SR 89A to Tissaw Road	Widen to four lane major collector	Not programmed
Cornville Road: Tissaw Road to I-17	Multimodal and traffic flow spot improvements	Not programmed
West Loop Road: Black Hills Drive to Fir Street	Construct new two-lane road connecting Black Hills Drive to Fir Street	Not programmed
SR 260 Bypass: Fir Street to SR 89A	Four-lane bypass of the SR 260, SR 89A intersection	Not programmed
Beaver Creek Road: I-17 (McGuireville) to Montezuma Lake Road	Upgrade to a major arterial	Not programmed
Beaver Creek Road: Montezuma Lake Road to N.F. 119	Pave road and upgrade to a major collector	Not programmed
Lake Montezuma: Brocket Ranch Road to Beaver Creek Road	Construct a new emergency route and low water crossing	Not programmed
SR 260: Thousand Trails Road to I-17	Widen to four lanes	Programmed for construction in 2016
Groseta Ranch Road: SR 89A to Old SR 89A	Upgrade to a two-lane minor collector	Completed
Main Street (Cottonwood): Mingus Avenue to Willard Street	Reduce travel lanes to two lanes	Two lanes from Willard to 10th Street
Main Street (Cottonwood): Mingus Avenue to SR 89A	Safety and capacity enhancements	Not programmed
Montezuma Castle Highway: Yavapai-Apache Nation to Finnie Flat Road	Widen to include a center turn lane	Not programmed
I-17: MP 282 to MP 304	Widen to three lanes in each direction	Not programmed

Source: 2009 Verde Valley Multimodal Transportation Study

Table 2.1: VVMTS Proposed Roadway Improvement Projects (Continued)

Project Location	Recommended Improvement	Project Status
SR 89A Bypass: SR 179 and SR 89A	Construct a two-lane bypass of the "Y" intersection at or west of Brewer Road	Not programmed
Beaverhead Flat Road: SR 260 to Cornville Road	Construct new two-lane major collector. Construction would include a new bridge over the Verde River	Not programmed
SR 260 Bypass: Thousand Trails to General Crook Trail	Right-of-way preservation for future construction of four-lane roadway	Not programmed
Quail Springs Ranch Road: Old SR 279 to SR 260	Extend road east to SR 89A	Not programmed
SR 89A Bypass: Cornville Road to Bill Gray Road	Construct four-lane minor collector bypass	Not programmed
Finnie Flat Road: SR 260 to Montezuma Castle Highway	Widen to four lanes	Not programmed
West Loop Road: Fir Street to Quail Springs Ranch Road	Construct two lane minor arterial	Not programmed
Middle Verde Extension: Middle Verde Road to Beaverhead Flat Road	Extend Middle Verde Road to Beaverhead Flat Road Extension	Not programmed

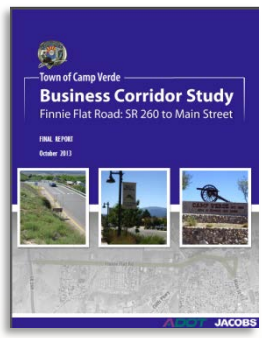
Source: 2009 Verde Valley Multimodal Transportation Study



2012 Yavapai County Comprehensive Plan

The 2012 *Yavapai County Comprehensive Plan* serves as a guide for the future development in the unincorporated areas of Yavapai County that promotes sustainability, balanced and high quality growth. Key elements in the Comprehensive Plan include:

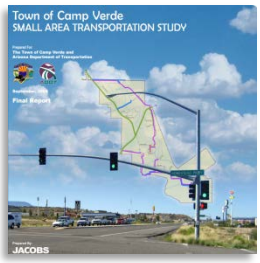
- Potential developable lands include Arizona State Trust land south of Cottonwood, along SR 89A east of Cottonwood, and along Cornville Road.
- Lake Montezuma, Village of Oak Creek, and portions of Cottonwood are identified as Municipal Growth Areas (MGA). MGAs are areas that have the potential to be incorporated or annexed by an adjacent city/town, provide regional commercial services, and have the necessary facilities to support the community.
- Major County roads include: County Route 30 (Mingus Avenue and Cornville Road) and County Route 78 (Beaverhead Flat Road).
- Major long-term regional roadway projects include: widening I-17 to three lanes in both directions and installing turn lanes, shoulders, and passing lanes on SR 179.
- The study's main transportation goals are: Design roadways to complement Yavapai County vision; provide public transportation; and to implement county-wide and community system for pedestrians and bicyclists.



2013 Town of Camp Verde Business Corridor Study

ADOT, in conjunction with the Town of Camp Verde, conducted a long-range corridor study for the Finnie Flat Road Business Corridor from SR 260 to the tri-intersection. Key study elements include:

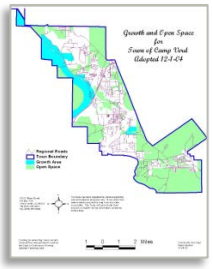
- By 2031, the Town of Camp Verde is projected to have a total population of 18,288 and total employment of 6,723.
- The Town lacks sidewalk connectivity and has no local or regional transit system.
- The Study recommends widening Finnie Flat Road in the mid-term to two-lanes in each direction.



2009 Town of Camp Verde Small Area Transportation Study

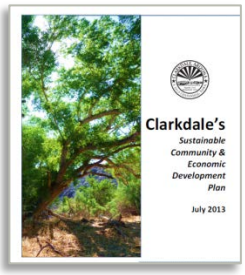
The 2009 *Town of Camp Verde Small Area Transportation Study* examined existing transportation and circulation issues within the Town and recommended improvement scenarios to meet future demand. Key study elements include:

- Employment growth is projected along SR 260 west of I-17, Finnie Flat Road, and Montezuma Castle Highway. Residential growth is projected primarily west of Middle Verde Road, in Verde Lakes, and south of Old Church Road.
- Major recommended improvements included: developing alterative safety/emergency routes, access and safety improvements along SR 260, and establishing a local and regional transit system.



2004 Town of Camp Verde General Plan

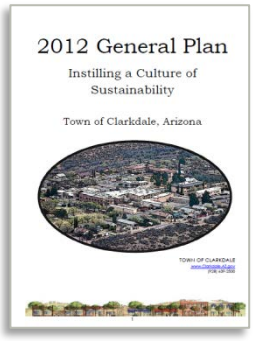
Approved in 2004, the *Camp Verde General Plan* is the guiding blueprint to the future growth and development of the Town. The plan integrates the vision of Town residents, businesses, and elected officials. The top qualities that the Town would like to preserve were identified as friendliness, historic nature, western/rural character, small town, and maintained roads. In addition, the three greatest future concerns for area residents were identified as water quality/quantity, increase in traffic, and lack of medium priced homes.



2013 Clarkdale's Sustainable Community & Economic Development Plan

The purpose of Clarkdale's *Sustainable Community and Economic Development Plan* is to provide a road map for the community's economic future and to monitor Clarkdale's progress. Key study elements include:

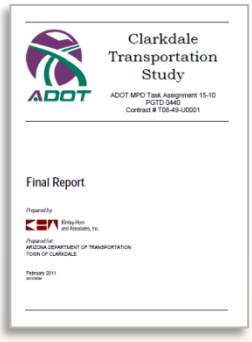
- 201 businesses were registered in Clarkdale, with construction representing the largest sector.
- The Plan recommends redesigning the Main Street and Broadway Road intersection.



2012 Town of Clarkdale General Plan

The Town of Clarkdale's General Plan guides short- and long-term growth and development within the Town. Key elements include:

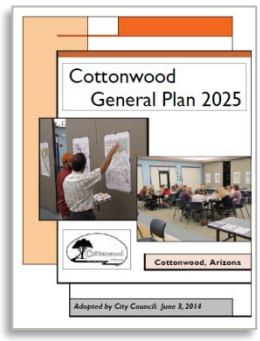
- Five growth areas are identified: Clarkdale Parkway Gateway District, Broadway Tuzigoot Gateway, industrial development in the Historic Industrial Railroad District, commercial development along State Route 89A, and along the south side of State Route 89A to Jerome.
- 450 acres owned by the Clarkdale Metals Corporation are set for annexation, which will expand the Town to the northwest. The area will remain an industrial/commercially-zoned land owned by Clarkdale Metals. The Plan states that at least 600 homes will be constructed on the land with 250 acres of industrial and commercial land.



2011 Town of Clarkdale Transportation Study

The *Clarkdale Transportation Study* was conducted to identify transportation system improvements that are needed to better integrate existing and planned developments into the local transportation system. Key elements included:

- The study utilizes the same projected future socioeconomic conditions as developed in the *Verde Valley Multimodal Transportation Study*.
- The study recommends constructing an alternative SR 89A connection, construct a two-lane road between Clarkdale Metals and Cement Plant Road, construct a two-lane road between Industrial Road and 11th Street, and to construct a roundabout at Main Street and North Broadway Road.



2015 City of Cottonwood General Plan

The objective of the *Cottonwood General Plan* is to guide and direct future growth and development decisions. Key elements included:

- Transportation system deficiencies identified included: west movement across the Verde Valley, limited north-south arterial road options, heavy reliance on few arterial streets, excessive driveways along SR 89A and Main Street, and absence of road shoulders and sidewalk facilities.
- Potential growth areas include State Trust land south of SR 260 and along SR 89A, as well as west of Cottonwood and along SR 89A towards Clarkdale.
- Recommended short-term improvements include: 12th Street enhancements, reducing North Main Street to two lanes, and constructing a roundabout at Main Street and 10th Street intersection.
- Recommended long-term improvements include: improving Groseta Ranch Road, upgrades to Cornville Road between Tissaw Road and SR 89A, constructing a new collector road to connect SR 89 & Vine between Cornville Road/Tissaw Road and SR 89A, connect Old 279 to SR 260 at Godard Road, and construct a west loop road that connects Fir Street to Black Hills Drive.



2009 City of Cottonwood Bicycle Plan

The objective of the *Cottonwood Bicycle Plan* is to encourage and enhance opportunities for bicycling within the City of Cottonwood. Key elements included:

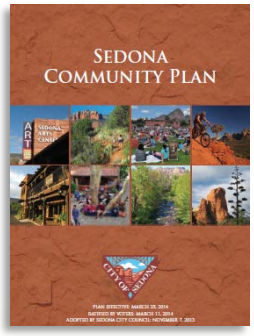
- Narrowing North Main Street to two lanes north of Mingus Avenue to accommodate bike lanes and turn lanes.
- Develop a citywide bicycle network that includes shared-use lanes, bike lanes, and trails.



2009 Cottonwood Middle School Travel Plan

The 2009 *Cottonwood Middle School Travel Plan* was developed to identify improvements to encourage students to walk and bicycle safely to and from school. Key elements included:

- On average, 89 students walk to schools, 117 walk home, and 20 bike to/from school. Traffic volumes and the safety of intersections and crossings were cited as top reasons children do not walk to school.
- The action plan developed included: completing sidewalks on Mingus Avenue, 10th Street, and collector streets within walking boundary; modify traffic flow patterns during dismissal, implement *Cottonwood Bicycle Plan*, and encourage carpooling.



2015 City of Sedona Community Plan

The 2015 *Sedona Community Plan* is an expression of the Sedona citizens' vision on the desired conditions for the future of the community and is intended to guide growth. Key elements included:

- Five key visions for the future growth in Sedona are: Environmental stewardship, improved traffic flow, community connections, walkability, economic diversity, and sense of place.
- Circulation improvements identified include evaluating the extension of Ranger Road as a replacement for the Brewer Road/SR 89A intersection, implementing traffic mitigation measures in the Uptown area, and conducting a transit feasibility study to reduce congestion in Oak Creek Canyon.



2008 SR 179/SR 89A "Y" Traffic Operations

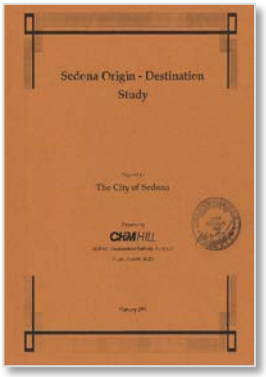
In 2008, a detailed traffic analysis was conducted to determine traffic operations at the SR 179/SR 89A intersection. The study evaluated the impacts on operations of the intersection if it were signalized or converted to a roundabout. The analysis found that the split-phasing of the traffic signal reduces the total green time available on the SR 179 northbound approach, whereas the two-lane roundabout provides more opportunities to enter the intersection results in free-flowing traffic movements. Additionally, the analysis determined that the roadway grade at the SR 179/Ranger Road intersection was too steep for the intersection to function appropriately. Design recommendations were made to remove the SR 179/Ranger Road roundabout.



2007 Soldier Pass Road Area Traffic Study

The Solders Pass Area Traffic Study was conducted to identify solutions within the study area to provide convenient access to SR 89A. The study provided six concepts to reduce traffic congestion and improve circulation in the area. The three preferred alternatives included the following elements:

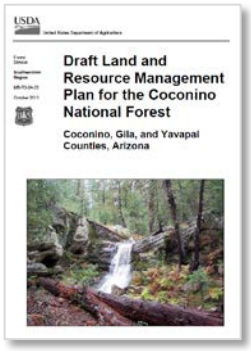
- **Javelina Alternative:** two signalized intersections at Airport Road and Saddlerock Circle with roadway improvements to North Airport Road.
- **Coyote Alternative:** three roundabout intersections at Airport Road, Soldiers Pass Road, and Posse Ground Road. The alternative requires a realignment of Posse Ground Road to align with the intersection of Birch Road.
- **Jackrabbit Alternative:** roadway connections south of SR 89A that provide access to the fourth (south) leg of the Soldiers Pass Road intersection.



1996 Sedona Origin – Destination Study

In 1996 an origin-destination study was conducted to identify the trip patterns of local residents, the volumes of trips that would utilize a new link between SR 179 and SR 89A, key destinations that would support a transit system, and additional travel patterns and needs of tourists and local residents. Key survey findings included:

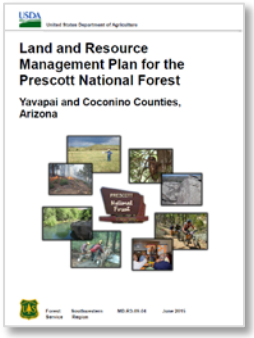
- Trips that generate within the city are primarily to Uptown Sedona or West Sedona. Trips generated outside of the city limits come primarily from the Village of Oak Creek.
- Approximately half of the commuter trips on SR 89A are generated from Cottonwood and the Village of Oak Creek.
- SR 179 is primarily utilized by tourists, whereas SR 89A is primarily a commercial and business corridor for local residents.
- Approximately 25% of traffic on SR 179 and 10% of traffic on SR 89A consists of commuters, business trips, and shopping trips from the Village of Oak Creek to West Sedona and Cottonwood.



Land and Resource Management Plan for the Coconino National Forest

This plan was developed to provide strategic guidance for project and activity decision making by providing direction not already provided by existing law, regulation, or policy. The Plan identified four Management Areas (MA) in the study area: Verde Valley, Sedona Neighborhoods, House-Mountain Lowlands, and Sedona-Oak Creek. Key plan elements:

- Base for exchange lands are located in: Chapel of the Holy Cross area, Slide Rock Area, Village of Oak Creek Golf Course area, and the Dells area (300 acres)
- Dry Creek Road should be maintained in a rough conditions to retain character of land
- Casner Canyon Research Natural Area (RNA), located north, protects the ecological integrity of a pure stand of Arizona cypress along with Supai sandstone. RNAs are only suitable for nonmotorized travel.
- Verde Valley Botanical Area (BA) preserves a unique, limestone dependent desert community containing Arizona cliffrose, which has been greatly reduced by human conversion of its habitat. BAs are only suitable for nonmotorized travel.
- Existing and recommended Wilderness Areas include: Munds Mountain, Wet Beaver, Sycamore Canyon, Red Rock Secret Mountain, and Walker Mountain (Recommended)



Land and Resource Management Plan for the Prescott National Forest

This plan provides guidance and information for the responsible land management and to assist in project and activity decision making in the Prescott Nation Forest. The study area is located within the Prescott National Forest's Verde Valley Management Area. Key plan elements:

- Recreation use within the Verde Valley Management Area is concentrated primarily at areas along the Verde River corridor and on top of Mingus Mountain.
- Land acquisition and exchange opportunities should emphasize retaining or adding to Prescott NF lands in the Verde Valley and on the east side of the Black Hills between Cottonwood and Camp Verde
- The viewshed associated with the State Highway 89A Scenic Byway should retain its scenic qualities and natural character.
- 40 miles of the Verde River south of Camp Verde is designated as Wild and Scenic. The Upper Verde River, upstream from Clarkdale to the Prescott National Forest Boundary, is determined to be eligible for wild and scenic river designation.
- The Management Area contains portions of two Inventories Roadless Areas (IRAs): Black Canyon Inventoried IRA and Grief Hill IRA. As identified in the 2001 Roadless Area Conservation Rule, road construction and timber harvest activities are restricted in IRAs.



Beaver Creek School: School Route Travel Plan

The purpose of this study was to provide Safe Routes to School (SRTS) program implementation guidance so that Rimrock children may safely bicycle and walk to Beaver Creek School. Key improvements proposed in the Plan included:

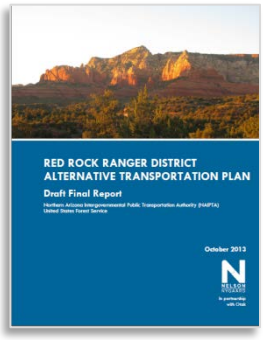
- Relocate crosswalks to Beaver Creek School Road, the northeast side of the school driveway, and to the east side of Beaver Creek School Road. Install school crossing signs at the crosswalks.
- Construct an asphalt concrete sidewalk and bike lanes along Beaver Creek Road from Bentley Drive to Beaver Creek School Road.
- Formalize start/end of Beaver Creek Road school zone with installation of flashing "School Zone" beacons and signage. Install "No Pick-up/Drop-off" signs adjacent to the school's driveway.



2015 Human Services & Public Transit Coordinated Transportation Plan

This study was conducted to identify and document the transportation needs of individuals with disabilities, older adults and people with low income; public transit services; strategies for meeting local needs; and priorities for funding and implementation. Key study findings include:

- Shuttle and taxi services available in the Verde Valley includes: Flagstaff Shuttle and Charter, Sun Taxi and Tours, and A Friendly Cab.
- Over 25% of the population in Clarkdale, Cottonwood, and Sedona are over the age of 65. Over 15% of the population in Camp Verde, Cottonwood, Cornville, and Lake Montezuma is below the poverty level.
- Cottonwood Area Transit operates two fixed routes in the Upper Verde Valley and the intercommunity commuter routes known as the Verde Lynx. The CAT also offers ADA para-transit service to/from Cottonwood, Clarkdale, Verde Village, and Bridgeport. Due to limited staff, the City of Cottonwood does not administer a voucher program; rather Cottonwood offers the Verde Valley Caregivers Coalition (VVCC). Currently the CAT has 11 buses and an annual ridership of 127,000. Coordination goals for CAT include continue service contracts; liaise with the Yavapai-Apache Transit by sharing bus pull-outs, cooperative scheduling, and training drivers; partner with local senior centers to provide intra-community transportation to seniors.
- The Yavapai Apache Nation began the Yavapai-Apache Transit (YAT) service in 2012. The service utilizes two 16-passengers bus to provide a modified, fixed route circulator service. YAT has established transfer points with local stakeholders/communities including: Cliff Castle Casino (Beaver Creek Transit), Camp Verde, Cottonwood (CAT), and Clarkdale. Coordination goals for YAT include: continue collaborating with partners; prepare for local subsidy in future years once implementation grant is closed; engage CAT to share City's transfer stations to increase service options; investigate service to Cornville and Verde Lakes.
- The study also outlines services provided by 15 different human service providers within the study area. Human service options available in the Verde Valley range from volunteer operated community transportation to transportation services provided by private facilities: Rainbow Acres, Verde Valley Caregivers Coalition, and the Veterans Transportation service have the highest number of annual passenger trips.
- There are seven private funded shuttles and taxi companies that offer service within the Verde Valley region and to Flagstaff, Prescott, and the Phoenix metropolitan area.
- Priorities identified by the study include: Coordination and provision of long distant transportation, driver training, passenger safety, and services to address gaps; fleet management through improved fleet utilization; and information and referral through directories, outreach, and advocacy.



2013 Northern Arizona Intergovernmental Public Transportation Authority (NAIPTA) Red Rock Ranger District Alternative Transportation Plan

This study was conducted to identify transportation alternatives within Oak Creek Canyon that reduce traffic congestion and reduce ecological impacts of visitor parking along SR 89A. The study provided three transit alternatives to reduce traffic congestion in the area:

- **Alternative 1:** High-frequency, limited-stop service traveling along SR 179/SR 89A corridor focusing on day-trip travelers
- **Alternative 2:** Sedona-centric service providing access to top visitor attractions and key destinations within Sedona
- **Alternative 3:** On-demand small van service providing basic mobility in the Sedona area

PROGRAMMED AND SCOPED PROJECTS

ADOT's Multimodal Planning Division publishes the Arizona State Transportation Improvement Program (STIP), which identifies priority transportation projects that utilize federal funds over a five-year timeframe. The ADOT MPD Planning and Programming section compiles the STIP from a list of projects from regional transportation improvement programs (TIPs). Table 2.2 lists the improvement projects included in the *2016-2020 Five-Year Transportation Facilities Construction Program*. The Five-Year Program acts as a guiding document for future projects and designates the allocation of local, state, and federal funding for projects. Funding of the Five-Year Program is generated primarily through the gasoline and vehicle license tax.

Table 2.2: ADOT State Transportation Improvement Program FY 2016 – 2020

Year	Project Location	Type of Improvement, Equipment, Structure, etc.	Total Costs
2016	I-17: South of McGuireville (MP 292)	Rockfall mitigation	$2,035,000
2016	SR 260: Thousand Trails to I-17 (MP 211 -219)	Construct corridor improvements	$52,000,00
2016	SR 260: Industrial Drive (MP 219)	Construct Roundabout and Traffic Signal	$1,300,000
2017	I-17: Verde River Bridge #1731 & 505 (MP 287)	Scour Retrofit	$550,000

Source: ADOT Multimodal Planning Division

Table 2.3 lists the roadway improvement projects in the Verde Valley area as identified in the *NACOG FY 2015 - 2023 Regional Transportation Improvement Program (TIP*).

Table 2.3: NACOG Regional Transportation Improvement Program FY 2015 – 2023

Year	Project Name/Location	Type of Work	Total Costs
2017	Boynton - Dry Creek Overlay	Dry Creek overlay	$1,210,513
2017	Camp Verde: Main Street and Montezuma Castle Highway	Reconstruction/overlay	$357,709
2015	Camp Verde: SR 260 / Industrial Drive intersection	Reconstruction	$450,000
2015	Camp Verde: Finnie Flat Road	Enhancement design	$128,231
2015	Camp Verde: Finnie Flat Road	Enhancement construction	$702,809
2015	Clarkdale: Main Street / Broadway	Design and reconstruction	$1,009,544
2018	Clarkdale: Main Street and Broadway	Overlay design	$15,668
2021	Clarkdale: Main Street and Broadway	Overlay construction	$626,723
2015	Clarkdale: Clarkdale Parkway	Design/construction	$452,799
2017	Cottonwood: Mingus Avenue	Reconstruction	$3,365,000

Source: ADOT Multimodal Planning Division

Table 2.3: NACOG Regional Transportation Improvement Program FY 2015 – 2023 (Continued)

Year	Project Name/Location	Type of Work	Total Costs
2017	Sedona: Sanborn Drive/Thunder Mountain Road	Overlay design	$78,824
2019	Sedona: Sanborn Drive/Thunder Mountain Road	Overlay construction	$623,722
2016	Sedona: Dry Creek	Overlay design	$78,824
2018	Sedona: Dry Creek	Overlay construction	$441,076

Source: ADOT Multimodal Planning Division

In conjunction with the Federal Aviation Administration (FAA) and public airports, ADOT develops a Five-Year Airport Capital Improvement Program (ACIP) for airport development. Funding for the Airport Program is mainly derived from flight property tax, aircraft lieu tax, aircraft registration, and aviation fuel tax. Table 2.4 lists the improvement projects included in the *2016-2020 Five-Year Airport Capital Improvement Program.*

Table 2.4: ADOT Airport Capital Improvement Program FY 2016 – 2020

Year	Type of Improvement	Total Costs
Cottonwood Airport		
2016	Increase height of security fence between the apron and the skydive area.	$150,000
2016	Apron repair/resurfacing	$1,900,000
2016	ALP Narrative and Master plan update	$125,000
2017	Environmental assessment for Jet A fuel tank	$150,000
2017	Design and implement declared distances and extend taxiway A as needed, per revised ALP	$320,000
2018	Environment assessment, design and construct aircraft wash rack	$200,000
2019	2019 (2014LCD) crack seal and rubberized asphalt emulsion seal coat RW1432CT 10	$182,618
2019	Design and Construct Taxiway A Pavement Preservation	$210,000
2019	Environmental assessment for land acquisition	$240,000
2019	Design/construct runway 32 extension	$365,000
2019	Design, environmental assessment for extension of Runway 32	$80,000
Sedona Airport		
2016	Crack seal and rubberized asphalt emulsion seal coat RW321SD 10	$256,909
2016	Design Apron D rehabilitation (14,000 SY)	$95,000
2017	Construct Apron D rehabilitation (14,000 SY)	
2019	Construct auxiliary parking lot (8,000 SY)	
2020	Design Taxiway A extension (7,350 SY)	
2020	Design and construct perimeter road (5,500 ft x 20 ft)	

Source: ADOT Multimodal Planning Division

STATE ROUTE 260 PROGRAMMED IMPROVEMENTS

ADOT is currently in the beginning phases of upgrading a nine-mile segment of SR 260 from a two-lane roadway to a four-lane, divided highway between Thousand Trails Road and I-17 in Camp Verde (mile posts 209.08-218.39). When complete, SR 260 will be a continuous four-lane divided highway between I-17 and Cottonwood and includes the construction of seven roundabouts. Key project elements include:

- Construction is expected to begin in spring 2016; project estimate for construction is $62 million.
- Construction of seven full-access roundabout intersections at Thousand Trails Road (MP 211.22), Coury Drive (MP 211.95), MP 214, MP 215, Cherry Creek Road (MP 215.93), Horseshoe Bend Road (MP 216.74) and Wilshire Drive (MP 218.30)
- Each roundabout is approximately 35 feet larger in diameter than the Cottonwood, Clarkdale and Sedona roundabouts and will allow a WB-67 truck (semi-trucks with 53 foot trailers) to stay in their dedicated lane while traveling through the roundabout.

Figure 2.1: Scheduled State Route 260 Widening Project



Source: ADOT Multimodal Planning Division

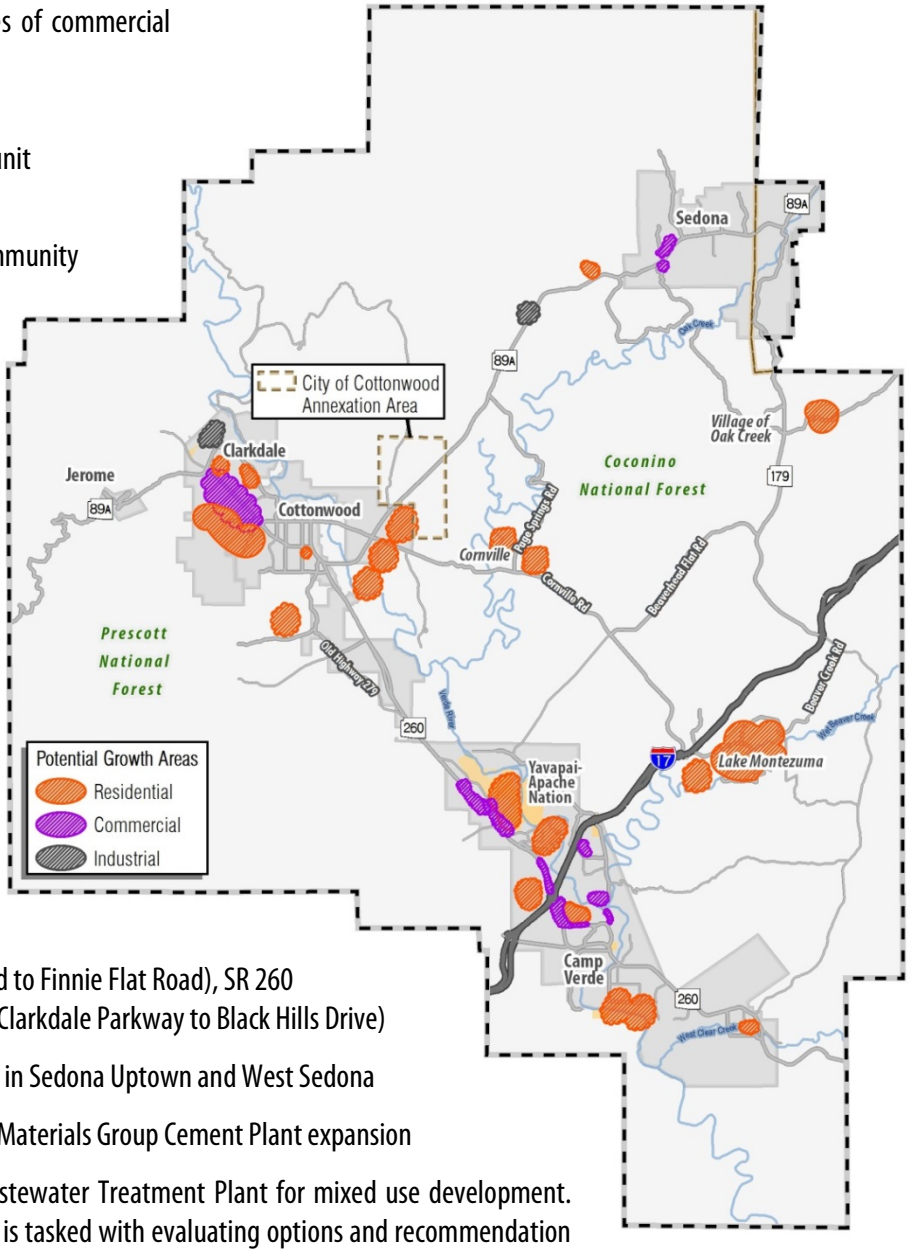
Creating an inventory of the study area's socioeconomic characteristics and understanding this data is a critical element for any transportation planning study. Socioeconomic data is one of the primary inputs to the travel demand modeling process that is used to determine future traffic volumes in the study area. Development of rational projections for population, housing units, and employment for each horizon year is vital to the process of forecasting realistic traffic volumes.

PLANNED DEVELOPMENTS

Based on previous planning documents and input received from local officials, planned developments and potential timeframes were identified. Additionally, private lands with the potential for development were also identified. Figure 3.1 illustrates planned development and potential growth areas. Major developments in the area include:

- 89 & Vine (southeast of SR 89A/Cornville Road) – master plan community that could support 2,050 residences and 118 acres of commercial development
- Mesquite Hills (southwest of SR89A/Mingus Avenue) – 425 unit residential subdivision
- Mountain Gate master plan community (Clarkdale) – buildout
- Grey Fox (Main Street Cottonwood) – 99-unit residential subdivision
- City of Cottonwood has plans to annex land south-west of SR 260
- Potential annexation of State Trust Land by the City of Cottonwood northwest of SR 89A/Cornville Road
- Yavapai-Apache Nation commercial development along SR 260
- Commercial development along SR 260 (Cherry Creek Road to Finnie Flat Road), SR 260 (South of SR 89A), and SR 89A (Clarkdale Parkway to Black Hills Drive)
- Commercial and tourist lodging in Sedona Uptown and West Sedona
- Clarkdale Metals and Salt River Materials Group Cement Plant expansion
- 200 acres south of Sedona Wastewater Treatment Plant for mixed use development. The Dells Land use Work Group is tasked with evaluating options and recommendation for land use at the Wastewater Treatment Plant

Figure 3.1: Potential Growth Areas



EXISTING AND FUTURE POPULATION AND HOUSING UNITS

In accordance to Executive Order 2011-04, population estimates and forecasts developed by the Arizona Department of Administration (ADOA) should be utilized by all government agencies for planning purposes. The State Demographer's Office, a part of ADOA, develops yearly population estimates and 25-year population forecasts for the State of Arizona. A Council of Technical Solutions, comprised of representatives from State universities, regional councils, and state agencies, provides technical guidance on the quality, methodology, standards, and analytical techniques.

STUDY AREA OVERVIEW

Land Area: 673 sq. mi.
Population (2015): 69,913
Housing Units (2015): 36,712
Median Age (2010): 49.7

Based on previous planning documents, local jurisdictions General Plans, and input received from local officials, planned developments and potential timeframes were identified. Socioeconomic projections developed by the State Demographer's Office for the 2025 and 2040 horizon years were disaggregated at the Traffic Analysis Zone (TAZ) level to reflect the planned residential, commercial, and employment developments. The State Demographer's Office estimates that the Verde Valley study area will have a population of 83,371 by 2025 and a population of 97,124 by 2040. Table 3.1 shows a tabular summary of the historical and projected population and housing units in the study area.

Table 3.1: Projected Study Area Population and Housing Units (2015 – 2040)

	2015 Estimates		2025 Estimates		2040 Estimates	
	Total Pop.	Housing Units	Total Pop.	Housing Units	Total Pop.	Housing Units
Unincorporated Yavapai County (Study Area Only)	32,068	16,811	40,210	20,992	47,803	24,956
Town of Camp Verde	11,191	4,864	12,789	5,559	14,497	6,301
Town of Clarkdale	4,251	2,136	5,023	2,524	5,848	2,939
City of Cottonwood	11,649	6,066	13,574	7,068	15,633	8,141
Town of Jerome	442	290	442	290	442	290
City of Sedona	10,312	6,545	11,333	7,193	12,901	8,189
Study Area	69,913	36,712	83,371	43,626	97,124	50,816

Source: Arizona Department of Administration – Employment and Population Statistics

For the purposes of this study, population and employment data were inventoried into Traffic Analysis Zones (TAZ). TAZs are geographic subdivisions of the study area that group socioeconomic data for traffic modeling purposes. Population, housing units, and employment data were distributed to each TAZ to assist in understanding the demand placed on the transportation system. For this study, a regional travel demand model was utilized to estimate current traffic volumes and to forecast future traffic conditions for the 2025 and 2040 horizon years. The model included a total of 206 TAZs.

Figures 3.2 and 3.3 illustrate the projected housing unit densities for 2025 and 2040, respectively. As illustrated in the figures, the highest population and housing unit densities will remain in Cottonwood, Sedona, and the Village of Oak Creek. Due to surrounding land being managed by the USDA Forest Service, communities are limited to their growth area and many locations will have no housing units.

EMPLOYMENT FORECASTS

Tourism, retail, medical services, casinos, and seasonal residents are the primary drivers of the region's economy. ReferenceUSA data was compiled to identify primary employment industries and current employment levels within the study area. Based on the ReferenceUSA database, there are approximately 29,543 employees within the study area. Verde Valley Medical Center is cited as the largest employer in the study area with 800 employees. Approximately 31% of all employers identified by ReferenceUSA are located within Cottonwood and 30% in Sedona.

EMPLOYMENT OVERVIEW

Approximate Employment: 29,543

Major Employers *(total employees)*:

- Verde Valley Medical Center *(800)*
- Cliff Castle Casino Hotel *(520)*
- Enchantment Resort *(430)*
- Walmart Supercenter *(394)*
- Yavapai County Sherriff *(270)*

There are no known sources for future employment projects; however, utilizing planned development data provided by local jurisdictions future employment projections can be developed. Currently, the study area has an employment to population ratio of 0.40. For this study, it is assumed that this ratio will remain constant for the future horizon years. Based on this assumption the study area is expected to have a total employment of 33,817 by 2025 and an employment of 38,971 by 2040. Table 3.2 shows a tabular summary of the historical and projected employment within the study area. Figures 3.4 and 3.5 illustrate the projected employment densities for 2025 and 2040, respectively.

Table 3.2: Projected Study Area Employment (2015 – 2040)

	2015		2025 Estimates		2040 Estimates	
	Total Pop.	Total Employ.	Total Pop.	Total Employ.	Total Pop.	Total Employ.
Unincorporated Yavapai County (Study Area Only)	32,068	5,413	40,210	6,371	47,803	7,531
Town of Camp Verde	11,191	4,869	12,789	5,564	14,497	6,307
Town of Clarkdale	4,251	1,205	5,023	1,437	5,848	1,690
City of Cottonwood	11,649	9,112	13,574	10,618	15,633	12,228
Town of Jerome	442	295	442	322	442	395
City of Sedona	10,312	8,649	11,333	9,505	12,901	10,820
Study Area	69,913	29,543	83,371	33,817	97,124	38,971

Employment projections were distributed into categories based on the type of services provided by the employer. For this study, the following employment categories were utilized: retail, office, service, industrial, public, elementary/middle/high school, college, lodging, and casino. Employment associated with tourism and services are assumed to continue to dominate employment trends through 2040.

Figure 3.2: Projected 2025 Housing Unit Density

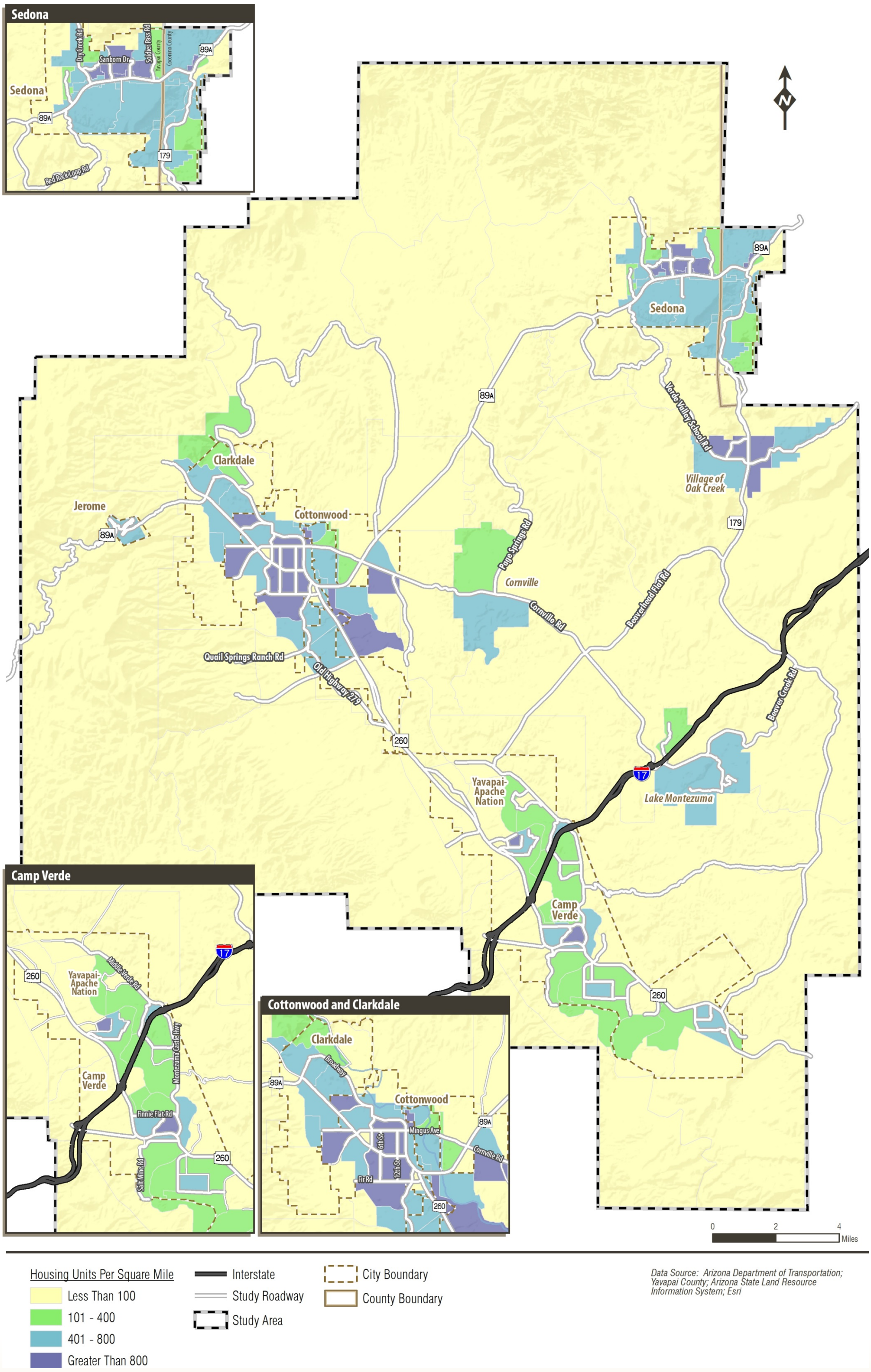


Figure 3.3: Projected 2040 Housing Unit Density

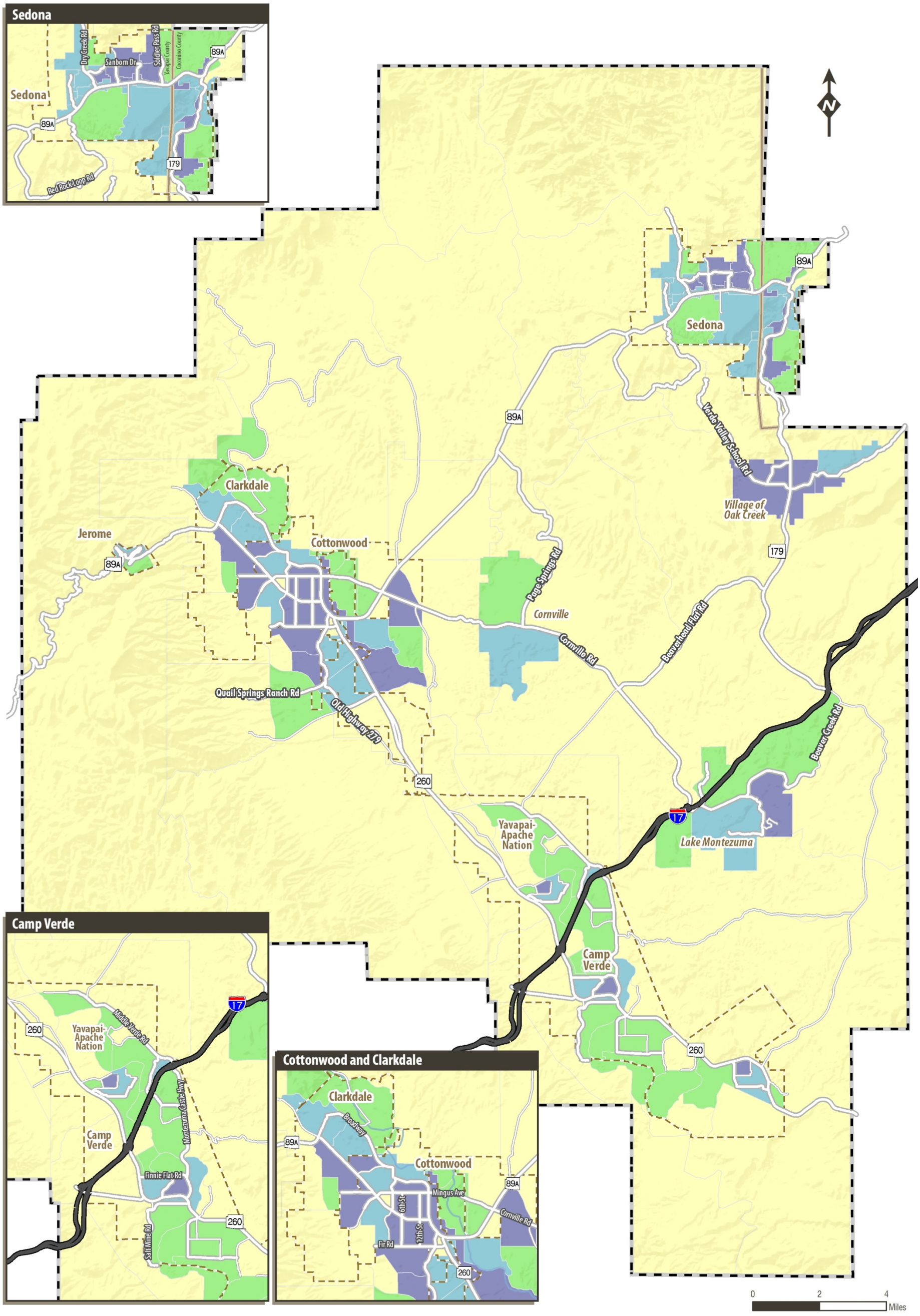


Figure 3.4: Projected 2025 Employment Density

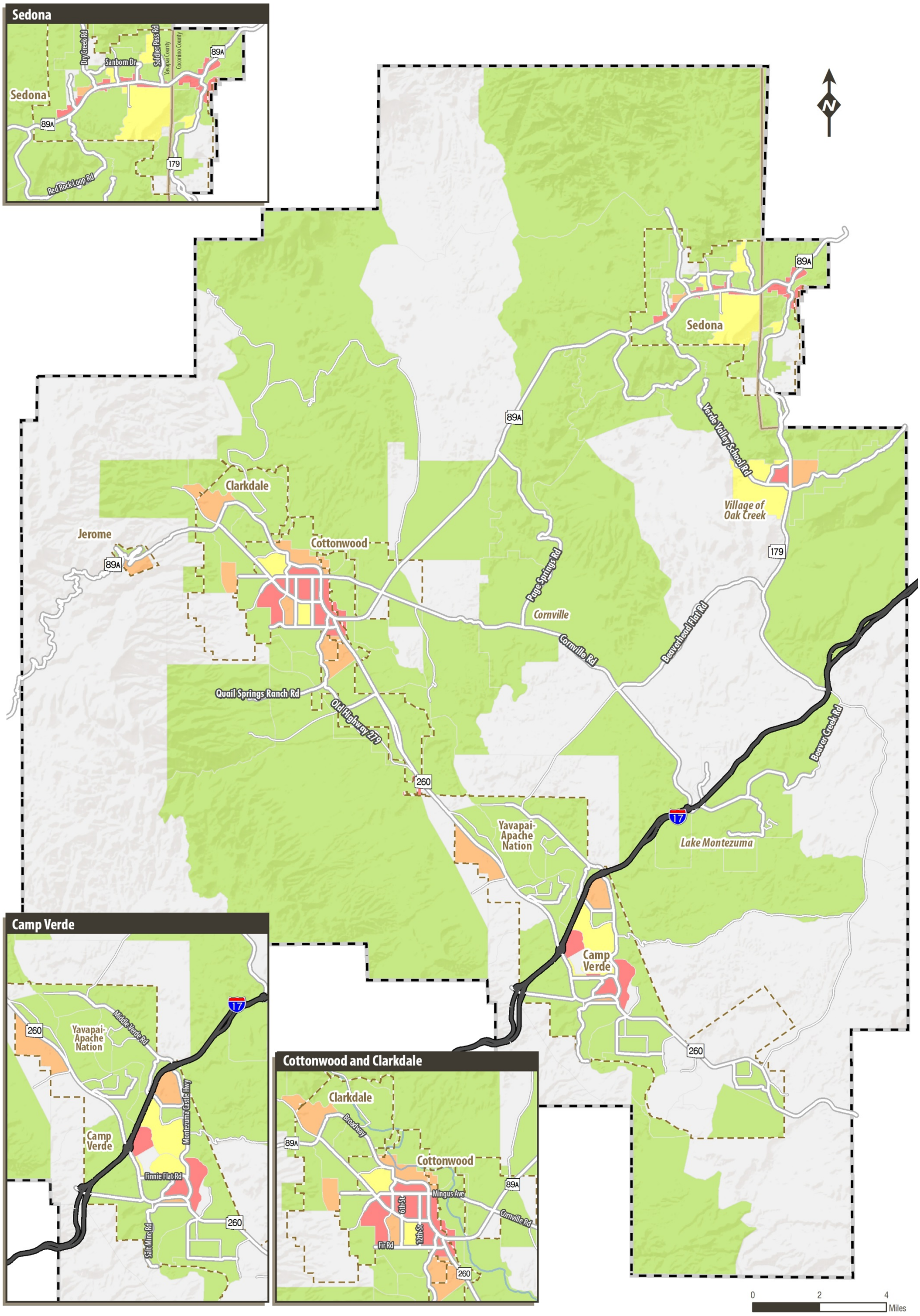
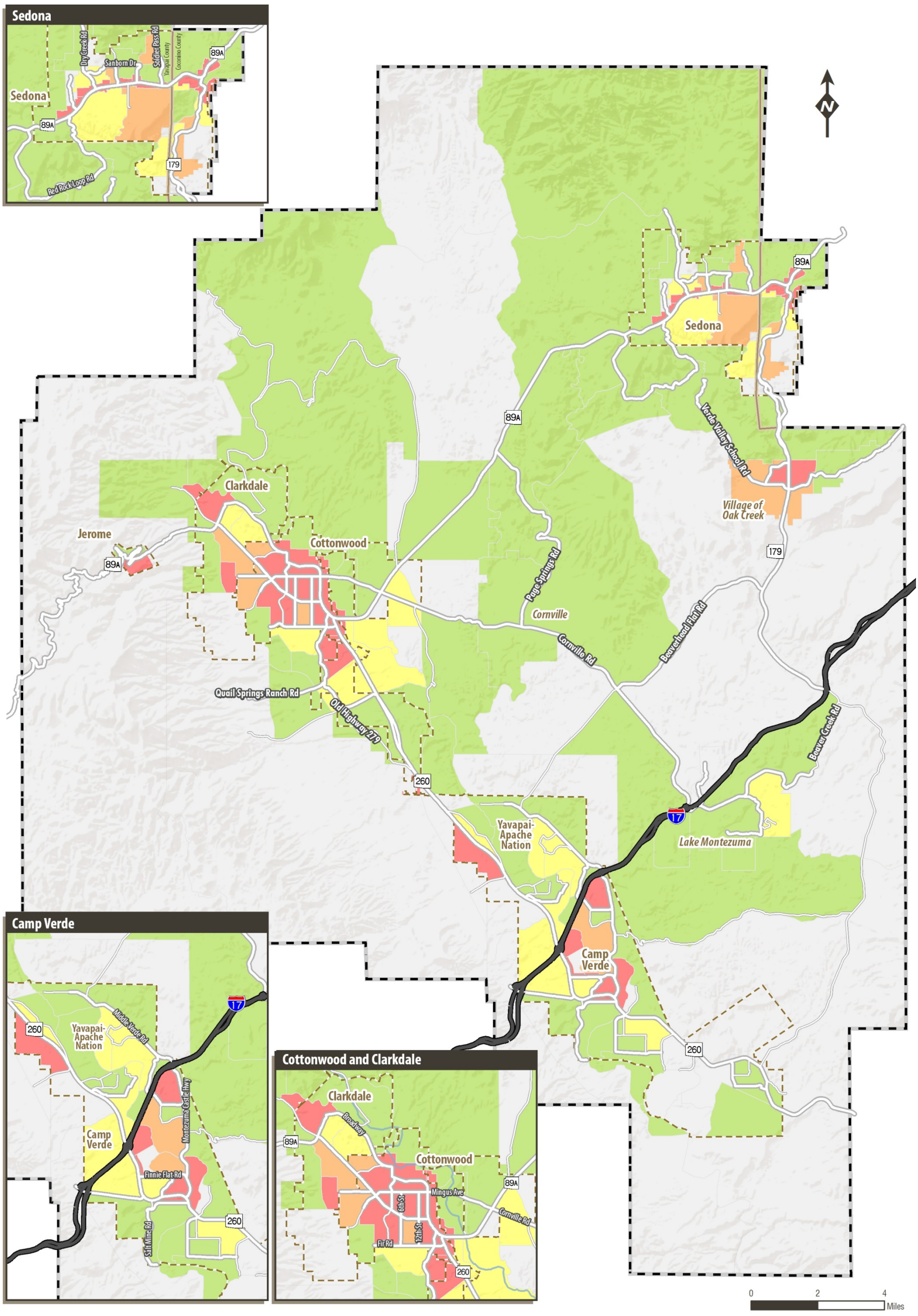


Figure 3.5: Projected 2040 Employment Density



EXISTING ROADWAY CHARACTERISITCS

The study area is comprised of a network of over 900 miles of paved and unpaved roadways. Regional roadways that serve the Verde Valley include a network of roadways that connect residential areas with employment and activity centers. Major roads serving the Verde Valley include:

- **Interstate 17:** Four-lane interstate highway that connects regional traffic between Phoenix and Flagstaff.
- **State Route 89A:** Regional state highway that connects Flagstaff to Prescott. The corridor is a major tourist route that notably transverses through scenic Mingus Mountain, Sedona, and Oak Creek Canyon. In addition, commuters and locals heavily rely on the route to access employment and activity centers.
- **State Route 179:** State highway that provides the primary access for tourists and locals between I-17 and Sedona. Referred to as the Red Rock Scenic Byway, SR 179 has been designated by the US Department of Transportation as an All-American Road due to its scenic vistas of the region's red rock formations.
- **State Route 260:** State highway that provides local and regional access between Cottonwood, Camp Verde, Payson, Show Low, and Springerville.
- **Cornville Road:** Yavapai County maintained roadway that serves as a major route between Cottonwood and I-17.
- **Beaverhead Flat Road:** Yavapai County maintained paved roadway that provides an alternative route between Cornville Road and SR 179.

Functional Classification

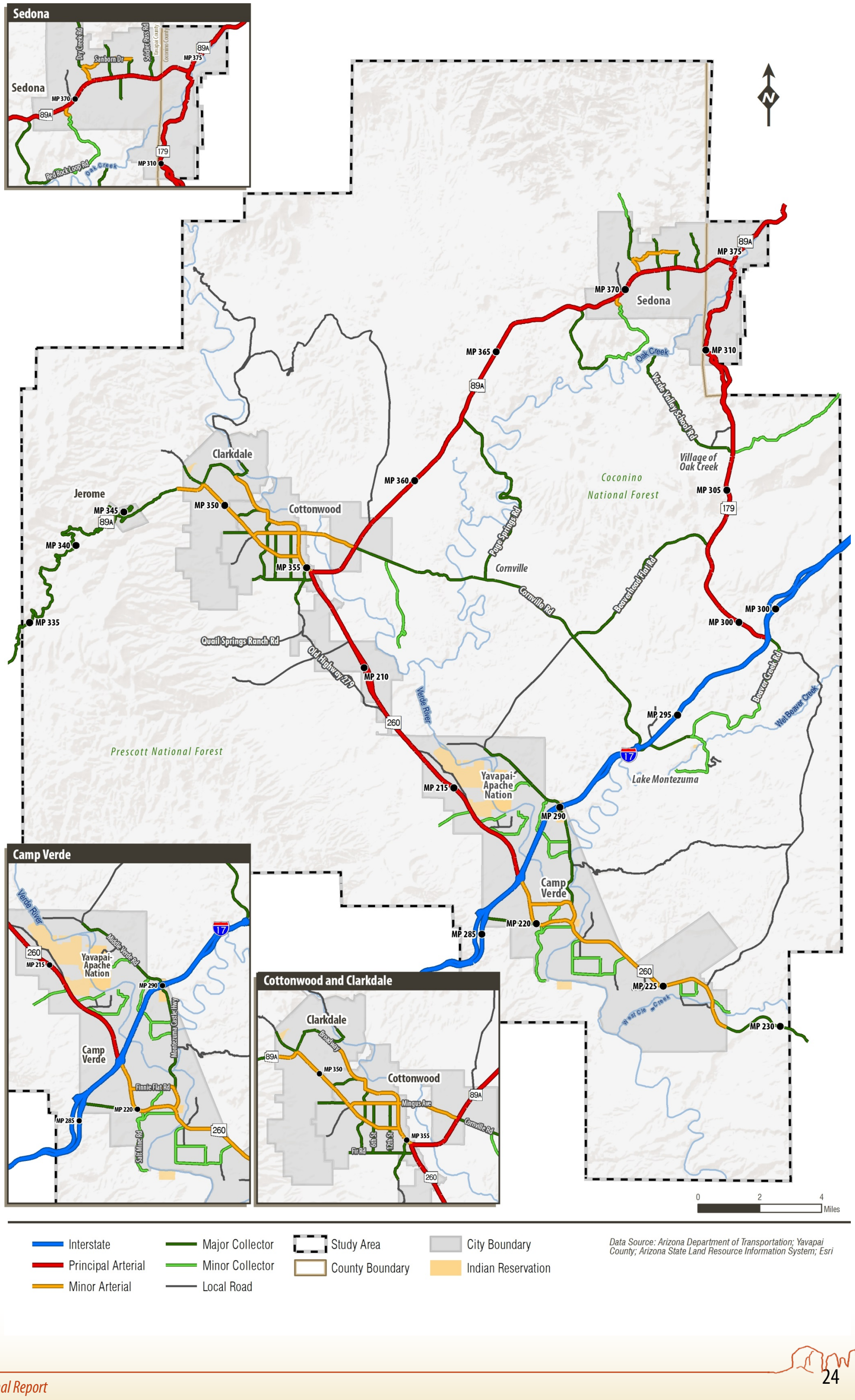
Functional classification is the process by which streets and highways are grouped into classes according to their role of moving traffic through a roadway network. Planners and engineers utilize this hierarchy to establish a roadway's design standards, speed, capacity, access management features, and land use development. Functional classification also impacts a roadway's eligibility for federal transportation funds for road improvements and maintenance. Table 4.1 provides an overview of each FHWA approved classifications. Approved FHWA functional classifications for the study area are presented in Figure 4.1.

Table 4.1: FHWA Functional Classification Definition

Classification	Description
Interstate	Interstates are the highest classification of Arterials and were designed and constructed with mobility and long-distance travel in mind. Roadways in this functional classification category are officially designated as Interstates by the Secretary of Transportation.
Principal Arterial	These roadways serve major centers of metropolitan areas, provide a high degree of mobility and can also provide mobility through rural areas. Principal Arterial roadways include driveways to specific parcels and at-grade intersections with other roadways.
Minor Arterial	Minor Arterials provide service for trips of moderate length offer connectivity to the higher Arterial system. Minor Arterials in rural areas are typically designed to provide relatively high overall travel speeds, with minimum interference to through movement.
Collector	Collectors generally serve primarily intra-county travel and predominantly have shorter travel distances than on Arterial routes. Major Collector routes are longer in length, lower driveway densities, higher speed limits; higher traffic volumes, and may have more travel lanes than Minor Collectors.

Source: FHWA

Figure 4.1: FHWA-Approved Functional Classification



Number of Lanes

A field review was conducted to inventory the number of lanes for major roadways in the study area. As illustrated in Figure 4.2, the majority of roadways are two-lane facilities except the following:

- **Two Lanes in Each Direction with Center Turn Lane**
  - SR 89A: Rocking Horse Ranch Road to Black Hills Drive
  - SR 89A: Brewer Road to Juniper Drive
  - SR 260: Ogden Ranch Road to SR 89A
  - SR 260: Reeves Road to General Crook Trail
  - Main Street (Cottonwood): SR 89A to Mingus Avenue
- **Two Lanes in Each Direction**
  - SR 89A: Forest Road to Brewer Road
  - SR 89A: Juniper Drive to Rocking Horse Ranch Road
  - SR 89A: Black Hills Drive to Clarkdale Parkway
  - SR 260: Thousand Trails Road to Ogden Ranch Road (I-17 to Thousand Trails Road is scheduled for widening in 2016)
  - SR 260: General Crook Trail to I-17
  - SR 260: East of Reeves Road
  - Main Street (Cottonwood): Mingus Avenue to 8th Street
  - Montezuma Castle Highway: within Yavapai Apache Nation
- **One Lane in Each Direction:** SR 179 is a divided highway with one-lane in each direction, with the occasional passing lane from SR 89A to south of the Village of Oak Creek.

Traffic Control and Posted Speed Limits

A field review was conducted to inventory the posted speed limits and traffic control devices (signals, roundabouts, stop signs, etc.) for major roadways in the study area. Speed limits along regional corridors vary greatly from 65 mph on SR 89A between Cottonwood and Sedona to 20 mph on SR 89A west of Jerome. Local roadways typically have speed limits ranging from 25 mph to 45 mph. Stakeholders commented that high vehicle speeds often occur on SR 260 north of I-17, SR 89A west of Jerome, SR 89A from Cornville Road to Upper Red Rock Loop Road, SR 179 south of the Village of Oak Creek, and Cornville Road.



Delays at SR 179/Beaverhead Flat Road intersection



Common potential safety conflicts in roundabouts

The usage of traffic control devices is the primary method of ensuring orderly traffic flow at intersections and along roadway networks. Within the Verde Valley study area, roundabouts are widely utilized to allow for free flow traffic while improving the overall safety of an intersection. As previously stated in Chapter 2, State Route 260 is scheduled to be upgraded to a four-lane divided highway with seven new roundabouts between Thousand Trails and I-17. In addition, the Town of Camp Verde has approved the construction of roundabouts at SR 260/Goswick Way/Industrial Drive intersection. Figure 4.3 illustrates posted speed limits and traffic control devices installed along the study corridors. Based on a comprehensive field review and input from stakeholders and TAC members, the following intersections experience congestion and/or safety issues:

- Main Street/Broadway (Clarkdale) – particularly when the Verde Valley Railroad passengers disembark
- SR 89A/Main Street/Cottonwood Street
- SR 89A/12th Street (Cottonwood)
- SR 89A/SR 260 (Cottonwood)
- SR 89A/Cornville Road
- SR 89A/Page Springs Road
- SR 89A/SR 179 Roundabout (Sedona)
- SR 179/Beaverhead Flat Road
- I-17Interchange/Montezuma Lake Road
- Cornville Road/Beaverhead Flat Road (Lake Montezuma)
- Finnie Flat Road/Main Street/Montezuma Caste Highway (Camp Verde)

Figure 4.2: Number of Lanes

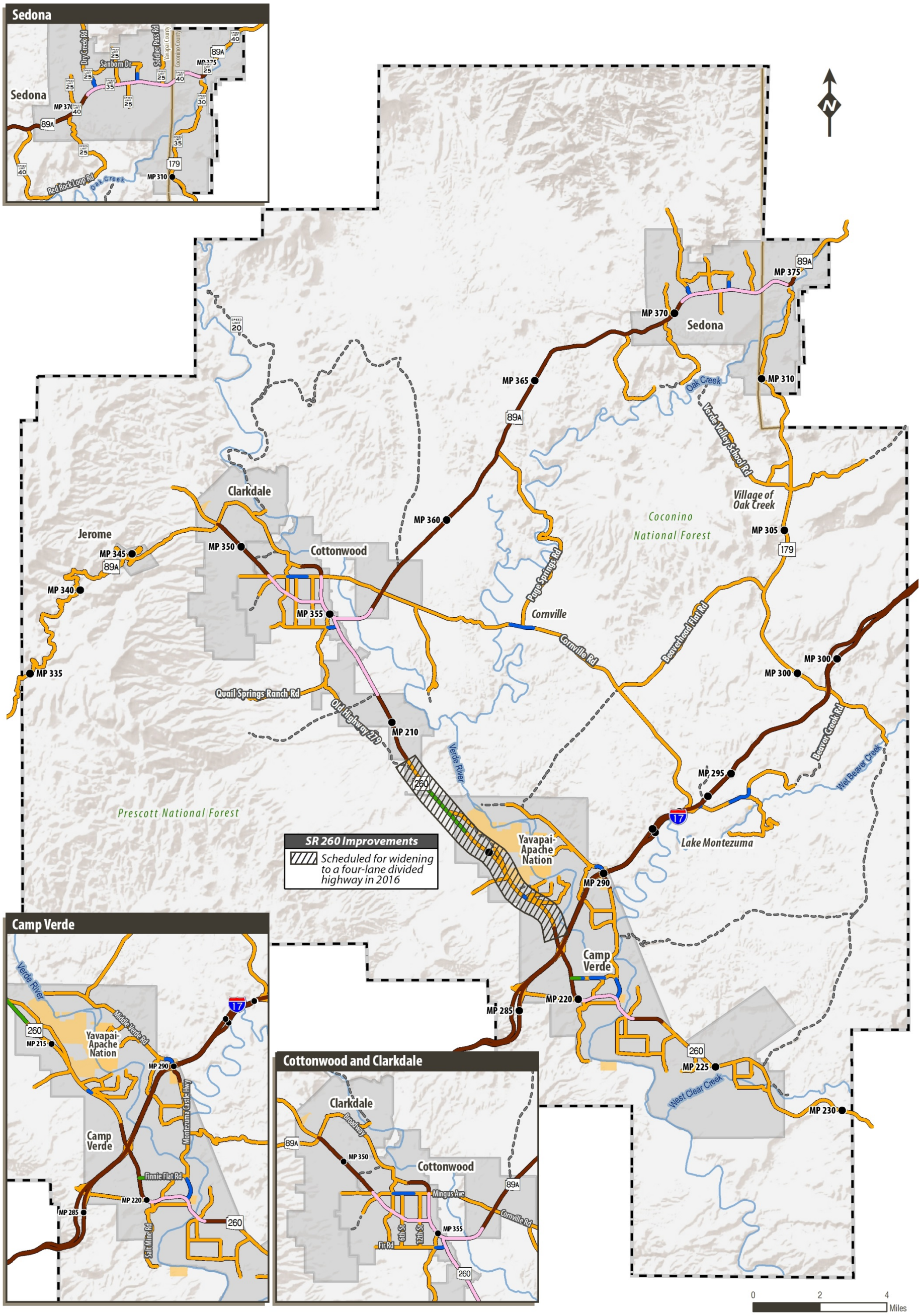
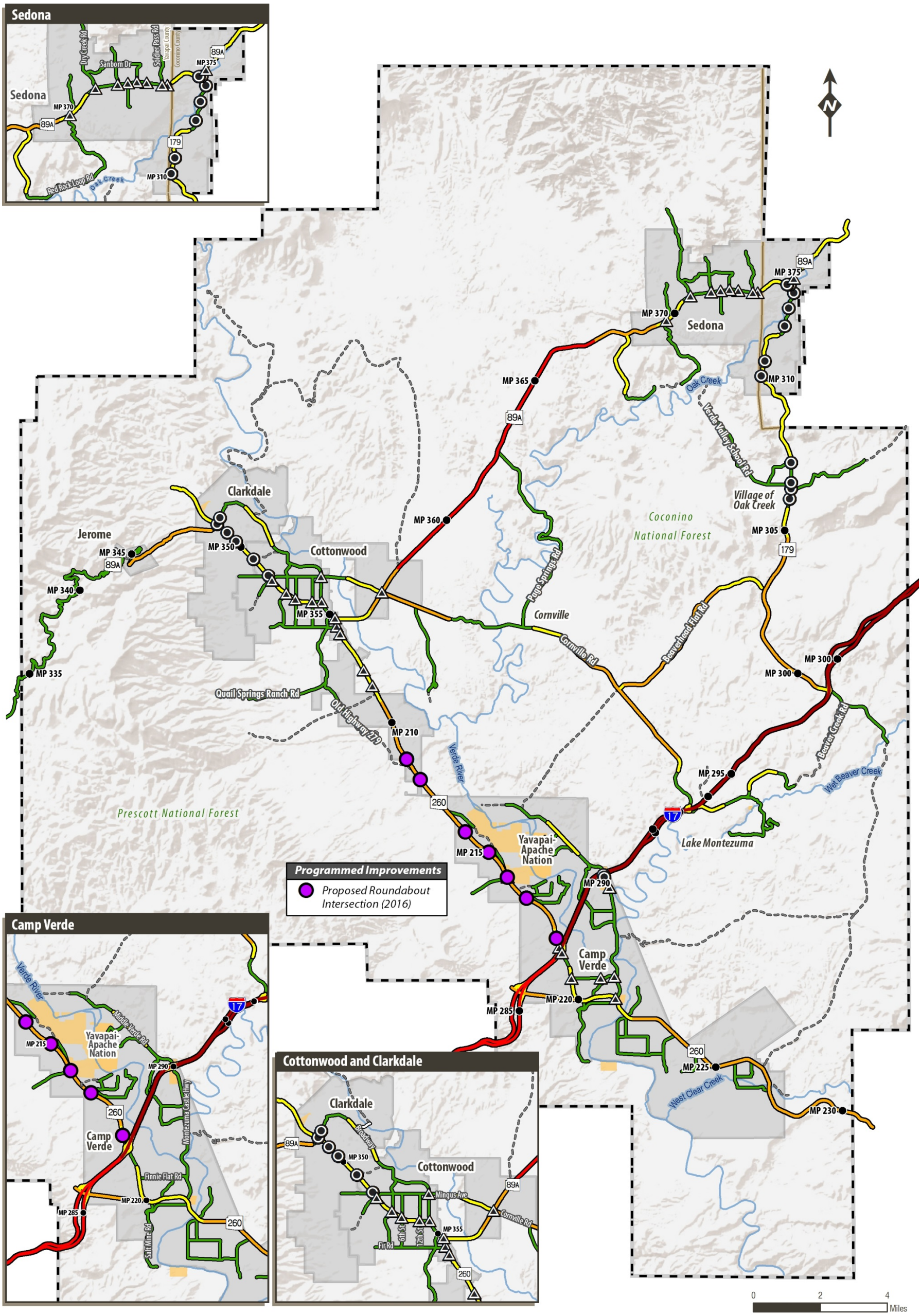


Figure 4.3: Posted Speed Limits and Traffic Control Devices



Pavement Conditions

Pavement conditions for ADOT owned facilities were obtained from the ADOT Pavement Management System. Pavement conditions are derived from the International Roughness Index (IRI). IRI is a standardized pavement measurement indicating the overall smoothness of a roadway and is expressed in terms of inches per mile. Low IRI values (0-94) indicate a very smooth riding quality, while higher IRI values (above 117) are on roadways with a rougher ride. Table 4.2 provides a summary of FHWA IRI rating standards. Non-ADOT maintained roadway conditions were determined through visual inspection during the field review. Roadway conditions at the time of the field review were defined as:

- **Good Condition:** Like new pavement with few defects as perceived by field reviewers, no sign of cracking and pavement deterioration, no maintenance is required as cracks are barely visible or well-sealed, liquid asphalt is barely noticeable.
- **Fair Condition:** Slight rutting, and/or cracking, and/or roughness that became noticeable by field reviewers. Cracking in different directions is more than ¼ in wide. The road may also be bumpy from corrugations but not enough to reduce vehicle speed, and may have some pavement raveling.
- **Poor Condition:** Multiple cracks, potholes, roughness, and/or bleeding are apparent on roadway. Cracks in different directions are preventing easy steering of the vehicle. Roadway may be uncomfortable to vehicle occupants and drivers may need to correct or avoid road defects. Corrugated ripples cause vehicle to reduce speed and rutting prevents easy steering of the vehicle. Previous fixes on the road are deteriorated and require maintenance.

Table 4.2: International Roughness Index (IRI)

IRI Rating	Condition
< 95	Good Condition
> 95 and <117	Fair Condition
> 117	Poor Condition

Source: ADOT



Bleeding, cracking, and deterioration on Broadway


Poor pavement conditions on SR 179

Figure 4.4 provides an overview of pavement conditions in the study area and Table 4.3 provides a summary of roadway segments that have fair/poor pavement conditions.

Table 4.3: Roadway Segments in Fair or Poor Condition

Road Name	From	To	Length (MI)	Condition
Interstate 17				
Interstate 17 (NB)	MP 285.9	MP 286	0.1	Fair
	MP 287.9	MP 288.1	0.2	Fair
	MP 288.5	MP 288.7	0.2	Fair
	MP 288.9	MP 289.2	0.3	Fair
Interstate 17 (SB)	MP 287	MP 287.1	0.1	Fair
	MP 293.4	MP 293.5	0.1	Fair
	MP 299	MP 299.1	0.1	Fair

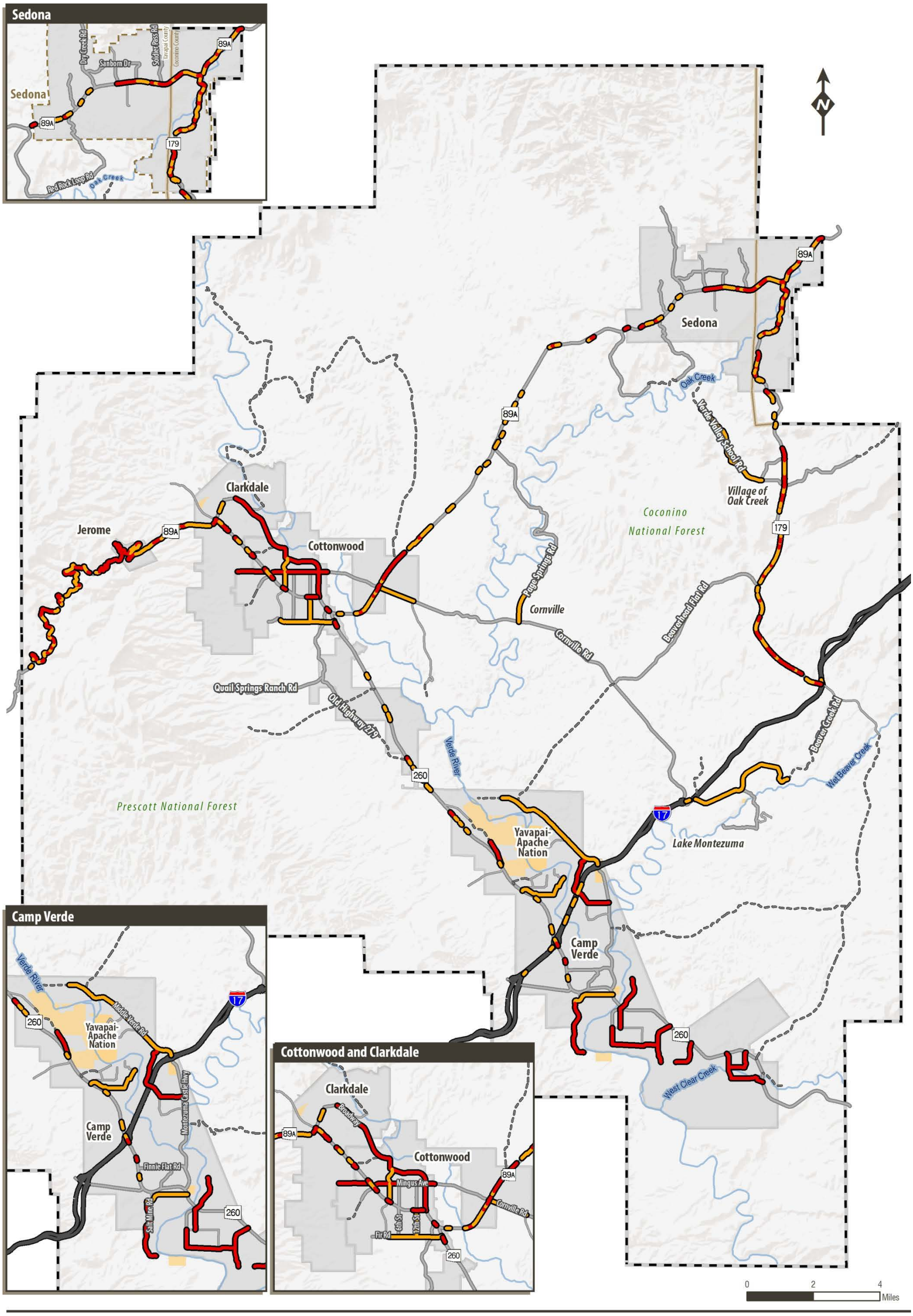
Source: ADOT Pavement Management System

Table 4.3: Roadway Segments in Fair or Poor Condition (Continued)

Road Name	From	To	Length (MI)	Condition
SR 89A				
State Route 89A	MP 335	350.6	15.6	Fair to Poor
	MP 351	MP 352	1	Fair to Poor
	MP 352.7	MP 353	0.3	Poor
	MP 355	MP 359.5	4.5	Fair to Poor
	MP 360	MP 360.4	0.4	Fair
	MP 361.7	MP 364.5	2.8	Fair
	MP 366	MP 367.5	1.5	Fair to Poor
	MP 368.5	MP 369.7	1.2	Fair to Poor
	MP 370	MP 370.5	0.5	Fair
	MP 371.5	MP 376	4.5	Fair to Poor
State Route 179				
State Route 179	MP 299	MP 305	6	Fair to Poor
	MP 305.5	MP 307.3	1.8	Fair to Poor
	MP 308	MP 308.4	0.4	Fair
	MP 309	MP 310.7	1.7	Fair to Poor
	MP 311.1	MP 313.4	2.3	Fair to Poor
State Route 260				
State Route 260	MP 206.7	MP 206.9	0.2	Poor
	MP 208.6	MP 208.7	0.1	Fair
	MP 209.7	MP 210.2	0.5	Fair
	MP 211.3	MP 212.6	1.3	Fair to Poor
	MP 213.5	MP 214.3	0.8	Fair to Poor
	MP 215.7	MP 215.8	0.1	Fair
	MP 217.2	MP 217.3	0.1	Fair
	MP 218.2	MP 219.1	0.9	Fair to Poor
	MP 219.5	MP 219.6	0.1	Fair
Local Roadways				
Arena del Loma	Middle Verde Rd	Montezuma Castle Hwy	2.3	Poor
Aspen Way	SR 260	Catclaw Drive	0.5	Poor
Black Hills Dr	SR 89A	0.9 mi west of SR 89A	0.9	Poor
Beaver Creek Rd	Montezuma Lake Rd	2.2 mi east of Montezuma Lake Rd	2.2	Fair
Broadway/Main Street	Main Street (Cottonwood)	SR 89A	4.4	Poor
Catclaw Drive	Aspen Way	Verde Lakes Drive	0.5	Poor
Clinton Ln	Verde Lakes Drive	SR 260	1	Poor
Cornville Rd	SR 89A	Tissaw Rd	1.2	Fair
Fir St	SR 260	Willard St	1.6	Fair
Horseshoe Bend Dr	SR 260	Bronco Dr	1.6	Fair
McCracken	SR 260	1.0 mi north of SR 260	1	Poor
Middle Verde Rd	I 17	1.8 mi west of Beauty St	3.8	Fair
Mingus Avenue	SR 89A	0.3 mi east of Broadway	1.7	Poor
Montezuma Lake Rd	0.5 mi east of I 17	Beaver Creek Rd	1.5	Fair
Murdock Rd	SR 260	Stolen Blvd	0.6	Poor
Old State Hwy 279	SR 260	0.7 mi northwest of SR 260	0.7	Poor
Page Springs Rd	Cornville Rd	1.0 mi north of Cornville Rd	1	Fair
Quarterhorse Ln	Stolen Blvd	Verde Park Dr	1.9	Poor
Salt Mine Rd	SR 260	1.8 mi south of Oasis Rd	3.1	Fair
Sierra Verde Rd	SR 260	0.9 mi south of SR 260	0.9	Poor
Twelfth St	SR 89A	Fir Rd	0.8	Fair
Willard St	SR 89A	Broadway	1	Fair
Verde Lakes Drive	SR 260	Clinton Ln	0.8	Poor
Verde Park Dr	SR 260	0.5 mi south of Quarterhorse Ln	1.3	Poor
Verde Valley School Road	2.1 mi west of SR 179	2.2 mi west of SR 179	0.1	Fair

Source: ADOT Pavement Management System

Figure 4.4: Pavement Conditions



Data Source: Arizona Department of Transportation; Yavapai County; Arizona State Land Resource Information System; Esri

Shoulder Conditions

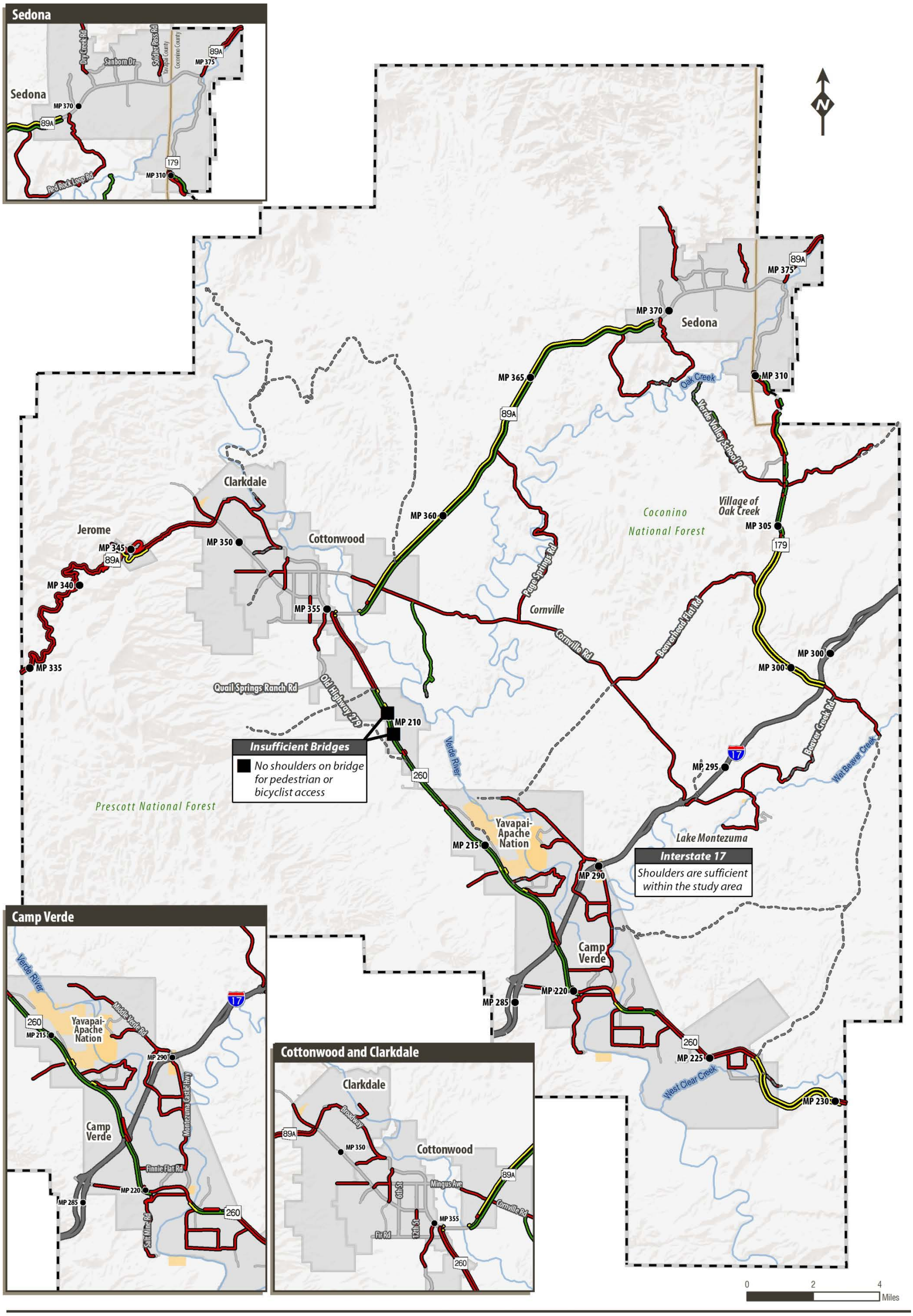
Roadside shoulders are an important safety feature that provide safe locations for disabled vehicles, allow vehicles to pull over for emergency service vehicles, and provide bicyclists and pedestrians with a safe buffer zone from vehicular traffic. Shoulder widths for the study roadways were compiled utilizing ADOT data. According to AASHTO Guide for the development of Bicycle Facilities a usable width of four-feet measured from the longitudinal joint to the center of the bike lane is recommended. Based on ADOT data and field review observations, several locations within the study area have shoulders that are too narrow, forcing bicyclists to utilize travel lanes. Based on the comprehensive field review, ADOT data, and stakeholder input, areas with shoulders in critical condition are presented in Figure 4.5 and Table 4.4.

Table 4.4: Roadway Segments with Narrow Shoulders

Location	Location
SR 89A	SR 179
Western study boundary to MP 343.2	MP 304.6 to MP 304.7 SB
MP 343.3 to MP 344.5	MP 305.9 to MP 306 SB
MP 344.5 to MP 346.6 SB	MP 306.1 to MP 306.2 SB
MP 346.6 to MP 349.0	MP 306.3 to MP 306.5 SB
MP 374.0 to eastern study boundary	MP 306.9 to MP 308.2 SB
SR 260	MP 308.3 to MP 308.6 SB
SR 89A to MP 209.1	MP 308.8 to MP 308.9 SB
MP 211.2 to MP 211.3	MP 309.3 to MP 310 SB
MP 211.9 to MP 212 SB	MP 309.7 to MP 309.8 NB
MP 213.1 to MP 213.4 SB	MP 310 to MP 310.1
MP 218.1 to 219.9 NB	Camp Verde
MP 220.2 to MP 221.5 NB	*The majority of local study roadways are deficient and have shoulders which are less than 4 feet wide*
MP 222 to MP 222.4 NB	Clarkdale
MP 222.9 to MP 226.4	Phoenix Cement Co Road SR 89A to Clarkdale town boundary
MP 230.1 to study boundary	Clarkdale Parkway – SR 89A to Broadway Road
Yavapai County	Broadway Road – Clarkdale Parkway to Groseta Ranch Road
Cornville Road – SR 89A to Tissaw Road, Aspaas Road to I-17	Groseta Ranch Road – SR 89A to Broadway Road
Page Springs Road – Cornville Road to SR 89A	Tuzigoot National Monument Road – Broadway Road to Sycamore Canyon Road
Beaver Creek Road – Montezuma Lake Road to Beaver Creek Ranger Street	Sycamore Canyon Road – Tuzigoot National Monument Road to 0.3 mi northwest
Beaverhead Flat Road – Cornville Road to SR 179	*Additional study roadways are typically curbed or have shoulder widths greater than 4 FT*
Montezuma Avenue	Sedona
Beaver Creek Road – Montezuma Lake Road to Beaver Creek Ranger Street	Lower Red Rock Loop Road
Cottonwood	Red Rock Loop Road
Black Hills Drive – west of SR 89A	Upper Red Rock Loop Road
Willard Street – SR 89A to Broadway Road	Dry Creek Road – North of Thunder Mountain Road
Mingus Avenue – SR 89A to Willard Street	Soldier Pass Road – 0.3 mi north of SR 89A to road end
Camino Real- SR 89A to 1.3 mi south	*Additional study roadways are typically curbed or have shoulder widths greater than 4 FT*
12th Street – SR 89A to Fir Road	
Additional study roadways are typically curbed or have shoulder widths greater than 4 FT	

Source: ADOT

Figure 4.5: Shoulder Conditions



Data Source: Arizona Department of Transportation; Yavapai County; Arizona State Land Resource Information System; Esri

Bridge Conditions

FHWA's National Bridge Inventory database was used to identify the locations of all bridges in the study area. The sufficiency rating, which is indicative of bridge sufficiency to remain in service, is expressed as a percentage in which 100% would represent an entirely sufficient bridge and zero percent would represent an entirely insufficient bridge. Bridge rehabilitation involves major work required to restore the structural integrity of a bridge and to correct safety defects; to be eligible for rehabilitation, a bridge must have a Sufficiency Rating of 80 or less. To be eligible for replacement a bridge must have a Sufficiency Rating less than 50. Table 4.5 provides a summary of bridge condition ratings per FHWA standards. Within the study area a total of 101 bridges were identified:

- One bridge is eligible for replacement – Cornville Road/I-17 highway overpass bridge has a sufficiency rating of 42.8
- 33 bridges are eligible for rehabilitation
- 67 bridges are in good condition
- To access the Verde Canyon Railroad and industrial businesses located on Broadway (north of Main Street in Clarkdale) motorists and heavy trucks must use a one-lane bridge

Table 4.6 lists the ADOT sufficiency rating and condition of bridges within the study area. Bridge location and conditions are further illustrated in Figure 4.6.

Figure 4.6: Bridge Conditions

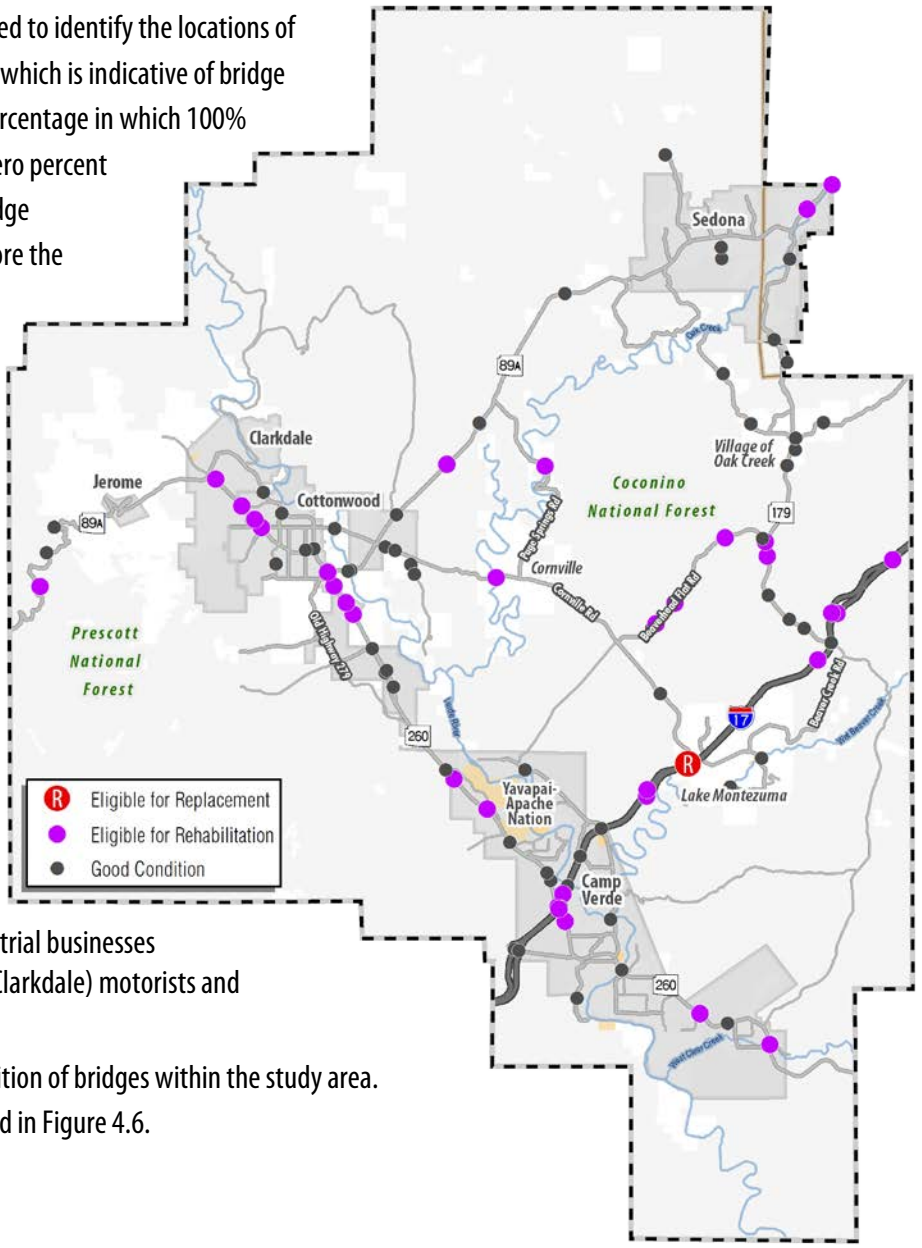


Table 4.5: Bridge Condition Rating

Condition	Rating	Description
Good	> 80	No problems to some minor deterioration of structural elements
Fair	50 to 80	All primary structural elements are sound but may have deficiencies such as minor section loss, deterioration, cracking, spalling, or scour.
Poor	< 50	Advanced deficiencies such as section loss, deterioration, cracking, spalling, scour, or seriously affected primary structural components.
Structurally Deficient	S	Bridges are considered structurally deficient if significant load carrying elements are found to be in poor condition due to deterioration and/or damage, or the adequacy of the waterway opening provided by the bridge is determined to be extremely insufficient.
Functionally Obsolete	F	A bridge can be categorized functionally obsolete when the deck geometry, load carrying capacity, clearance, or approach roadway alignment no longer meet the usual criteria for the system of which it is an integral part.

Source: FHWA

Table 4.6: Study Area Bridge Conditions

Crossing Feature	Mile Post	Structure Type	Structure Number	Sufficiency Rating	Condition
SR 89A					
Midgely/Wilson Canyon	375.66	Bridge	232	62.9	Eligible for Rehabilitation
Silver Springs	352.48	Culvert	6183	65	Eligible for Rehabilitation
Del Monte Wash	351.22	Culvert	6184	65	Eligible for Rehabilitation
Mescal Gulch	350.4	Culvert	6185	65	Eligible for Rehabilitation
Wash	349.33	Culvert	6186	65	Eligible for Rehabilitation
Soldier Wash	373.93	Culvert	6580	69.9	Eligible for Rehabilitation
Wash	339.16	Bridge	133	77.9	Eligible for Rehabilitation
Sheephead	360.14	Culvert	5195	69.9	Eligible for Rehabilitation
SR 179					
Dry Beaver Creek	302.5	Bridge	736	60.6	Eligible for Rehabilitation
Wash	302.96	Culvert	5064	70	Eligible for Rehabilitation
SR 260					
Cherry Creek	215.05	Bridge	966	59.9	Eligible for Rehabilitation
Wash	218.85	Culvert	7213	69.3	Eligible for Rehabilitation
Wash	219.2	Culvert	7214	69.3	Eligible for Rehabilitation
Wash	213.69	Culvert	5118	70	Eligible for Rehabilitation
Wash	207.98	Culvert	5120	70	Eligible for Rehabilitation
Wash	207.58	Culvert	5121	70	Eligible for Rehabilitation
Wash	206.95	Culvert	5122	70	Eligible for Rehabilitation
Oak Wash	206.51	Culvert	5123	70	Eligible for Rehabilitation
I 17	287.27	Bridge	2575	77.8	Eligible for Rehabilitation
Wickiup Wash	224.43	Bridge	2300	78	Eligible for Rehabilitation
West Clear Creek	227.05	Bridge	2301	79	Eligible for Rehabilitation
I-17					
Wash	298.27 (NB & SB)	Culvert	5758	69.9	Eligible for Rehabilitation
Wash	298.65	Culvert	5759	69.9	Eligible for Rehabilitation
Gaddis Wash	287.16 (NB & SB)	Culvert	6681	70	Eligible for Rehabilitation
Wash	291.66 (NB)	Culvert	5756	80	Eligible for Rehabilitation
Wash	291.81 (SB)	Culvert	5757	80	Eligible for Rehabilitation
Hog Tank Wash	299.85 (SB)	Culvert	6562	80	Eligible for Rehabilitation
Hog Tank Wash	302.43 (SB)	Culvert	6563	80	Eligible for Rehabilitation
Beaverhead Flat Road					
Unnamed Wash	NA	Culvert	10728	80	Eligible for Rehabilitation
Unnamed Wash	NA	Culvert	10729	80	Eligible for Rehabilitation
Unnamed Wash	NA	Culvert	10730	80	Eligible for Rehabilitation
Cornville Road					
I 17	293.26	Bridge	652	42.6	Eligible for Replacement
Oak Creek	NA	Bridge	9100	64.9	Eligible for Rehabilitation
Page Springs Road					
Oak Creek	NA	Bridge	9102	74.7	Eligible for Rehabilitation

Source: ADOT

EXISTING TRAFFIC CONDITIONS

Existing traffic conditions were evaluated for this study to identify current congestion levels and to anticipate deficiencies.

Average Annual Daily Traffic (AADT)

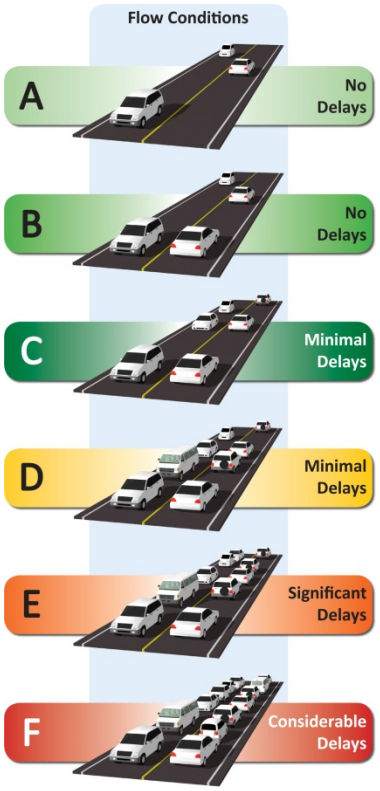
Average Annual Daily Traffic (AADT) is the annualized average 24-hour volume of vehicles on a specific roadway segment. To measure a roadway segment's AADT, traffic counts are collected manually or by an automated traffic counter and individual day counts are individually factored and then averaged to produce the AADT. Figure 4.8 illustrates AADTs compiled from ADOT, Yavapai County, and local jurisdictions. The highest traffic volumes in the study area are located on:

- I-17 *(17,898 - 22,598 AADT)*
- SR 89A: Mingus Avenue to Cornville Road *(12,159-22,495 AADT)*
- SR 89A: Upper Red Rock Loop Road to SR 179 *(17,882-23,804 AADT)*
- SR 260: South of Fir Street *(19,062 AADT)*
- SR 260: North of I-17 *(16,297 AADT)*
- SR 179: South of SR 89A *(10,392 – 12,339 AADT)*
- SR 179: Verde Valley School Road to Bell Rock Blvd *(12,660 AADT)*

Current Level of Congestion

Traffic congestion levels of major roadways within the study were estimated using existing traffic count data. For a planning level analysis, a roadway's Level of Service (LOS), or degree of congestion, is determined based on the ratio of traffic volume on the road to capacity of the road. Capacity of the road is a function of the number of lanes, functional classification, speed, and roadway geometrics and provides thresholds for the maximum number of cars allowed to travel on a lane for the peak or daily conditions. Each level of service is given a letter grade based on its level of congestion, ranging from "A" through "F", with LOS A representing free flowing traffic conditions and LOS F represents failure conditions where vehicles experience long delays. Figure 4.7 is an illustration of the LOS types. Road segment LOS is characterized by the HCM as follows:

Figure 4.7: Level of Service



- **LOS A:** Best, free flow operations (on uninterrupted flow facilities) and very low delay (on interrupted flow facilities). Freedom to select desired speeds and to maneuver within traffic is extremely high.
- **LOS B:** Flow is stable, but presence of other users is noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver within traffic.
- **LOS C:** Flow is stable, but the operation of users is becoming affected by the presence of other users. Maneuvering within traffic requires substantial vigilance on the part of the user.
- **LOS D:** High density but stable flow. Speed and freedom to maneuver are severely restricted. The driver is experiencing a generally poor level of comfort and convenience.
- **LOS E:** Flow is at or near capacity. All speeds are reduced to a low, but relatively uniform value. Freedom to maneuver within traffic is extremely difficult. Comfort and convenience levels are extremely poor.
- **LOS F:** Worst, facility has failed, or a breakdown has occurred.

In general for rural areas, LOS A and B represent little to no congestion, or that the roadway is "below capacity". Heavy congestion refers to a roadway that's nearing or above the capacity levels of a roadway. Road segments that have the highest traffic volumes are not necessarily the most congested, as some segments can carry higher amounts of traffic if the number of lanes is higher. Figure 4.9 illustrates existing roadway capacity levels in the study area. Roadways that are reaching capacity levels and may experience congestion include:

- **At or Above Capacity (LOS E & LOS F)**
  - SR 179 (SR 89A to Schnebly Hill Road)
  - SR 179 (south of Schnebly Hill Road)
  - Cornville Road (SR 89A to 0.2 mi east of SR 89A/Cornville Road intersection)

- **Near Capacity (LOS C & LOS D)**
  - SR 89A(Clarkdale Parkway to Black Hills Drive)
  - SR 89A(Twelfth Street to SR 260)
  - SR 89A(Shelby Drive to SR 179)
  - SR 179 (Schnebly Hill Road to Verde Valley School Road)
  - SR 260 (Old Highway 279 to I-17)
  - SR 260 (SR 89A to Del Rio Drive)
  - Beaver Creek Road
  - Bell Rock Blvd
  - Black Hills Drive
  - Camino Real (Cottonwood)
  - Cornville Road (0.2 mi east of SR 89A/Cornville Road intersection to east of Page Springs Road)
  - Dry Creek Road
  - Finnie Flat Road
  - Jacks Canyon Road
  - Lake Montezuma Avenue/Beaver Creek Road
  - Main Street (Camp Verde)
  - Mingus Avenue (East of Main Street)
  - Montezuma Castle Highway
  - Page Springs Road (North of Cornville Road)
  - Sixth Street (Cottonwood)

- **Below Capacity (LOS A & LOS B):** All other roadways perform at a LOS of B or greater

Roadway and Intersection Congestion Concerns

Based on input from stakeholders, TAC members, and observations made during the field review, the following roadway and intersection congestion issues were identified.

- SR 89A (West of Jerome) – popular commuter and tourist corridor between Prescott and Jerome.
- SR 89A (Clarkdale Parkway to Cornville Road) - heavy commuter traffic, residents accessing commercial and activity centers, and significant tourist traffic created severe traffic congestions.
- SR 89A (Dry Creek Road to Uptown Sedona) – high tourist, resident, and commuter traffic through Sedona coupled with the high number of intersections and driveways creates significant traffic delays. Stakeholders and TAC members commented that an alternative route between SR 179 and SR 89A or from SR 89A to Uptown Sedona may relieve some congestion along the routes.
- SR 179 (Village of Oak Creek to Sedona) – high tourist traffic along the corridor creates significant congestion; particularly on weekends and during the high tourism season. Emergency service personnel commented that congestion on SR 179 often hinders emergency response time.



Traffic congestion on SR 179 in the Village of Oak Creek



Intersection delays at SR 89A/Shelby Drive in Sedona

- SR 260 (I-17 to Cottonwood) – significant regional and commuter traffic occurs along the corridor. The widening of the roadway to a four-lane roadway will enhance safety and relieve congestion; however, additional development along the route may necessitate an alternative route to alleviate congestion. Additionally, safety turn-outs are needed for tourists to pull over.
- Cornville Road – high tourist and regional traffic creates significant congestion issues. Potential developments will further increase congestion on the corridor.
- Broadway and Main Street (Clarkdale and Cottonwood) – Verde Valley Railroad disembarks at 4 PM, adding additional congestion onto Broadway and Main Street during afternoon rush hours.
- Montezuma Castle Highway (Camp Verde) – congestion due to the lack of center turn lane can occur during peak periods.
- Intersections that experience heavy delays include:
  - SR 89A/SR 260 (Cottonwood)
  - SR 89A/SR 179
  - SR 89A/Main Street (Cottonwood)
  - SR 260/Fir Street (heavy bottlenecking during AM, lunch, and PM periods due to students and parents accessing the school)
  - SR 89A/Cornville Road
  - Broadway/Main Street (Clarkdale)
  - Mingus Avenue/Main Street
  - Beaverhead Flat Road/SR 179 (high vehicle speeds on SR 179 make it difficult for motorists to turn onto SR 179)

Figure 4.8: Existing Traffic Counts

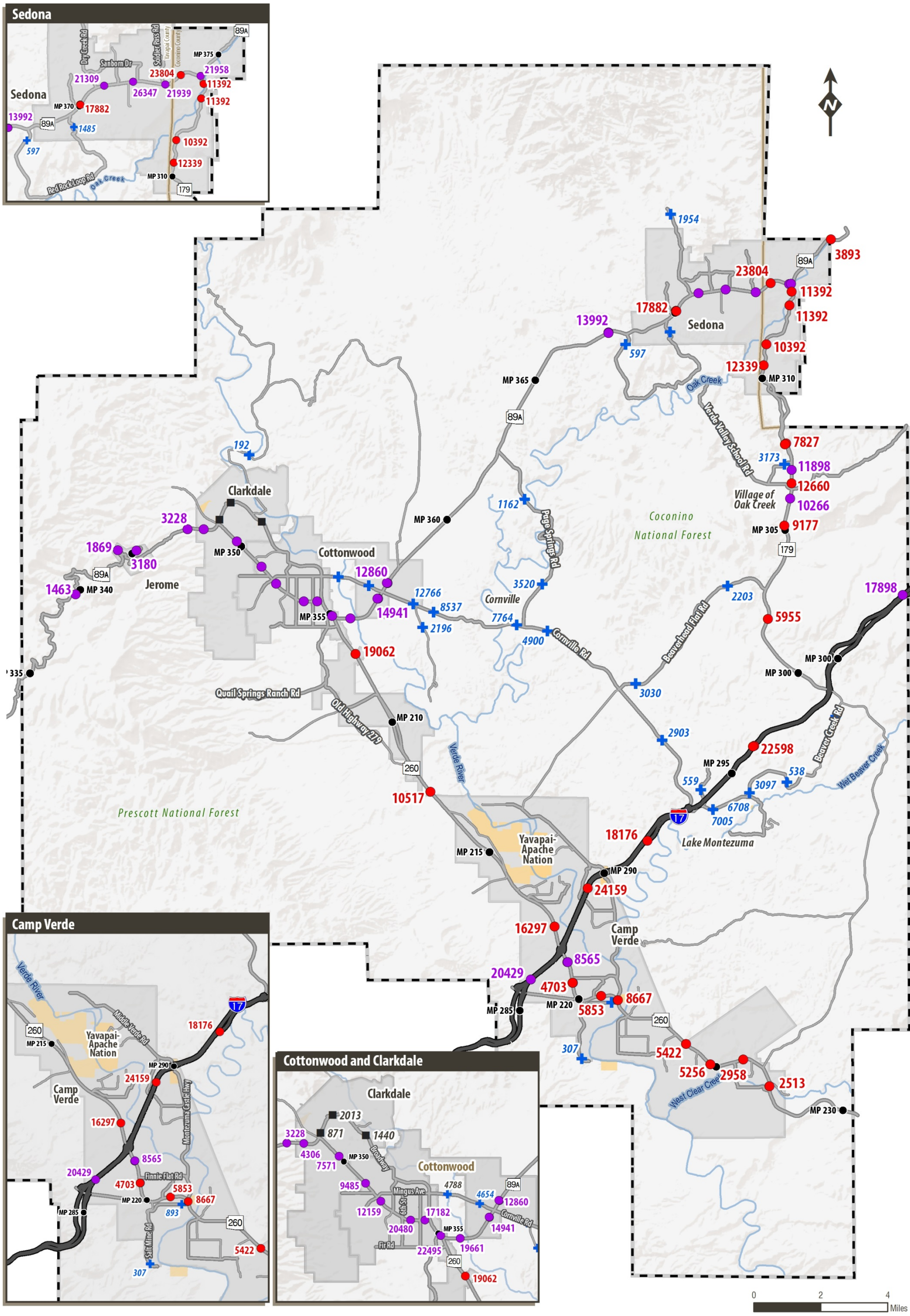
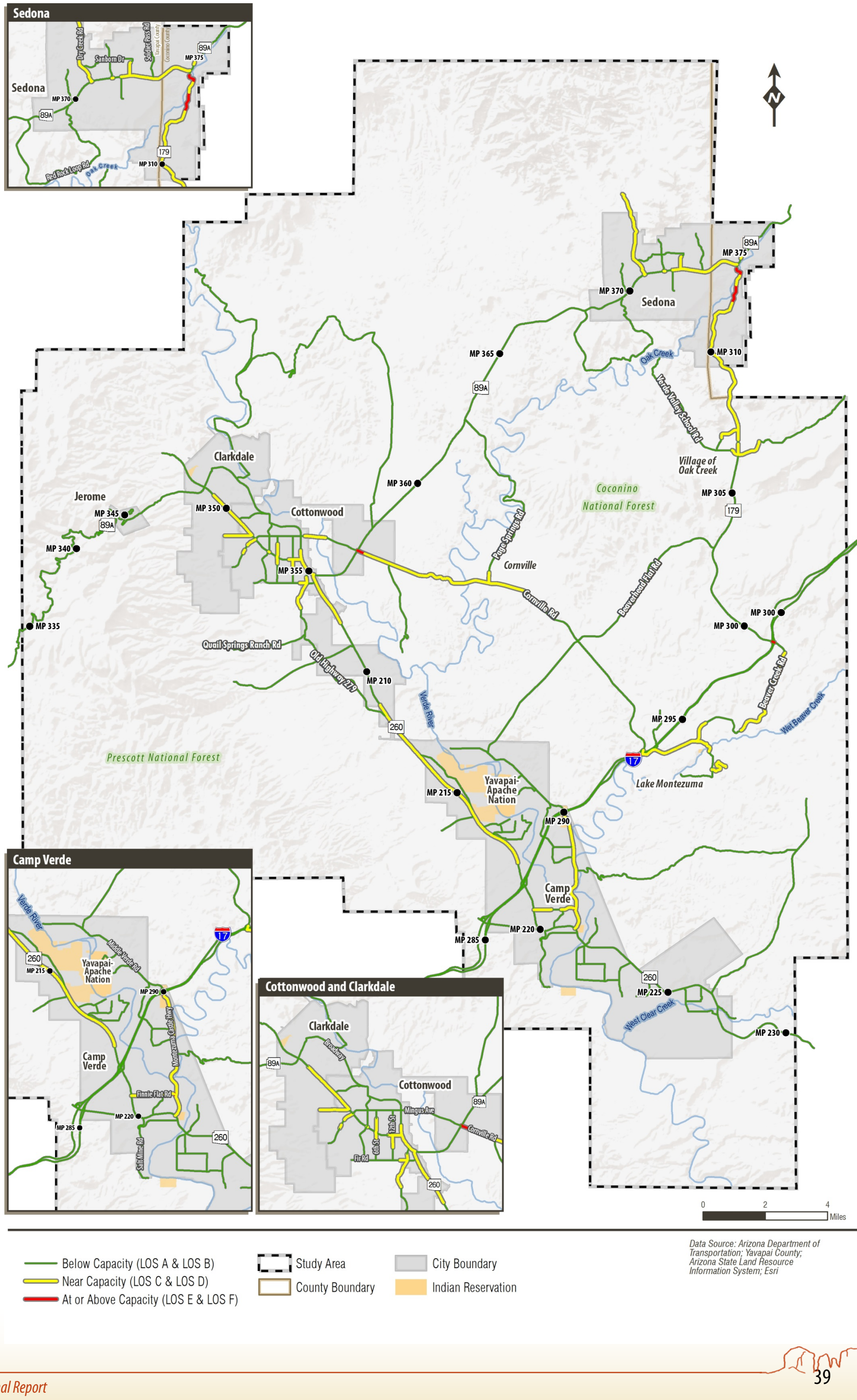


Figure 4.9: Existing Roadway Congestion Levels

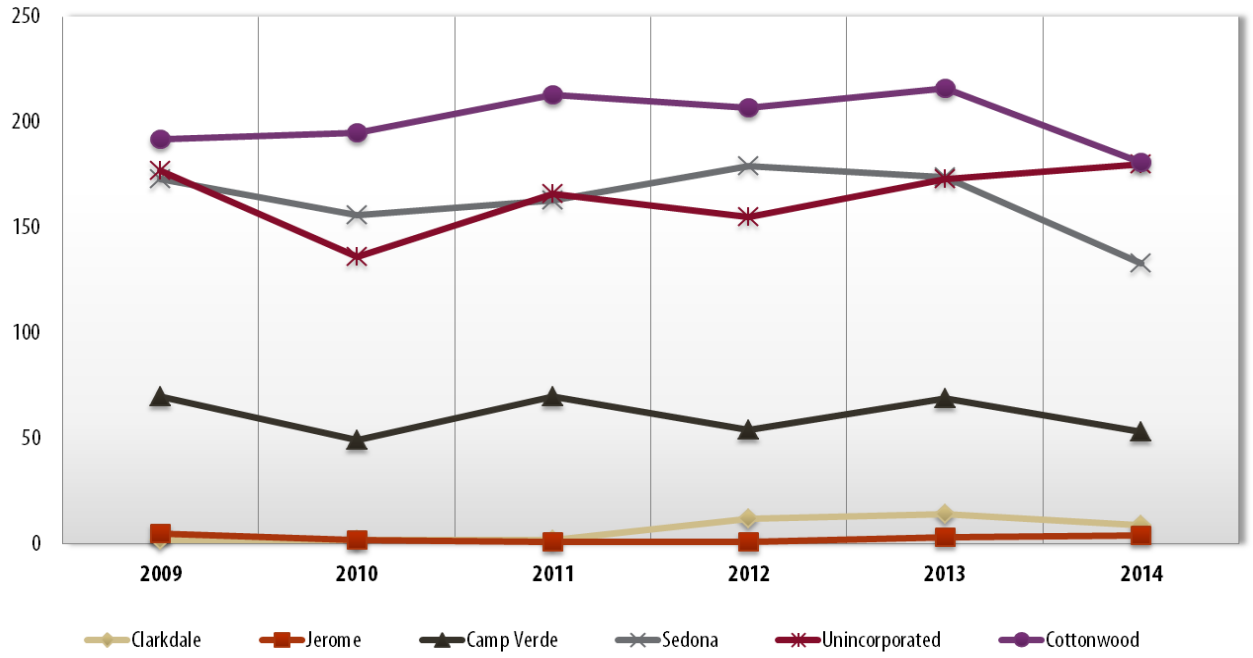


CRASH DATA ANALYSIS

Crash analysis was conducted for the study corridor to identify trends, patterns, predominant crash types, and high crash rate intersections and corridors. The purpose of the crash analysis is to discover safety hazard locations that need to be addressed to improve area safety. Data for crashes occurring between January 2009 and October 2014 was obtained from ADOT's Accident Location Identification Surveillance System (ALISS) database. During the five year period a total of 4,250 incidents occurred within the Verde Valley study area roadways, of which 618 (14.5%) occurred on I-17.

Figure 4.10 compares the crash data of the roadways within the study area by jurisdiction from January 2009 and October 2014. As illustrated in the Figure, unincorporated portions of the Verde Valley have seen an increase in crashes since 2013; this is significant since the 2014 does not include November and December data. Cottonwood and Sedona, on the other hand, have seen a significant decrease in crashes since 2013.

Figure 4.10: Crash Trends by Jurisdiction from January 2009 to October 2014



Note: Data does not include crashes that occurred on Interstate 17
Source: ADOT Accident Location Identification Surveillance System (ALISS) January 2009 – October 2014

Major Crash Locations

Identifying crash locations and the type of crashes for each roadway corridor aids in identifying deficiencies and developing safety improvement scenarios. Figure 4.11 illustrates the locations of crashes within the study area by the number of crashes occurring at each location, and Figure 4.12 presents the overall crash density as well as the locations of fatal crashes.

Approximately 7.4% of all crashes occurred on SR 89A, with the highest density of crashes occurring between Main Street and SR 260 in Cottonwood (122 crashes within 0.6 miles). Additional high density crash locations include: SR 89A (Andante Drive to Soldier Pass Road), SR 260 (Fir Street to Ogden Ranch Road), and SR 179 (Schnebly Hill Road to SR 89A). Locally, Cornville Road, Main Street (Cottonwood), and Page Springs Road had a high number of crashes. The highest number of intersection related crashes occurred at SR 89A/SR 179, SR 89A/SR 260, and SR 260/Fir Street.

Figure 4.11: Number of Crashes per Location

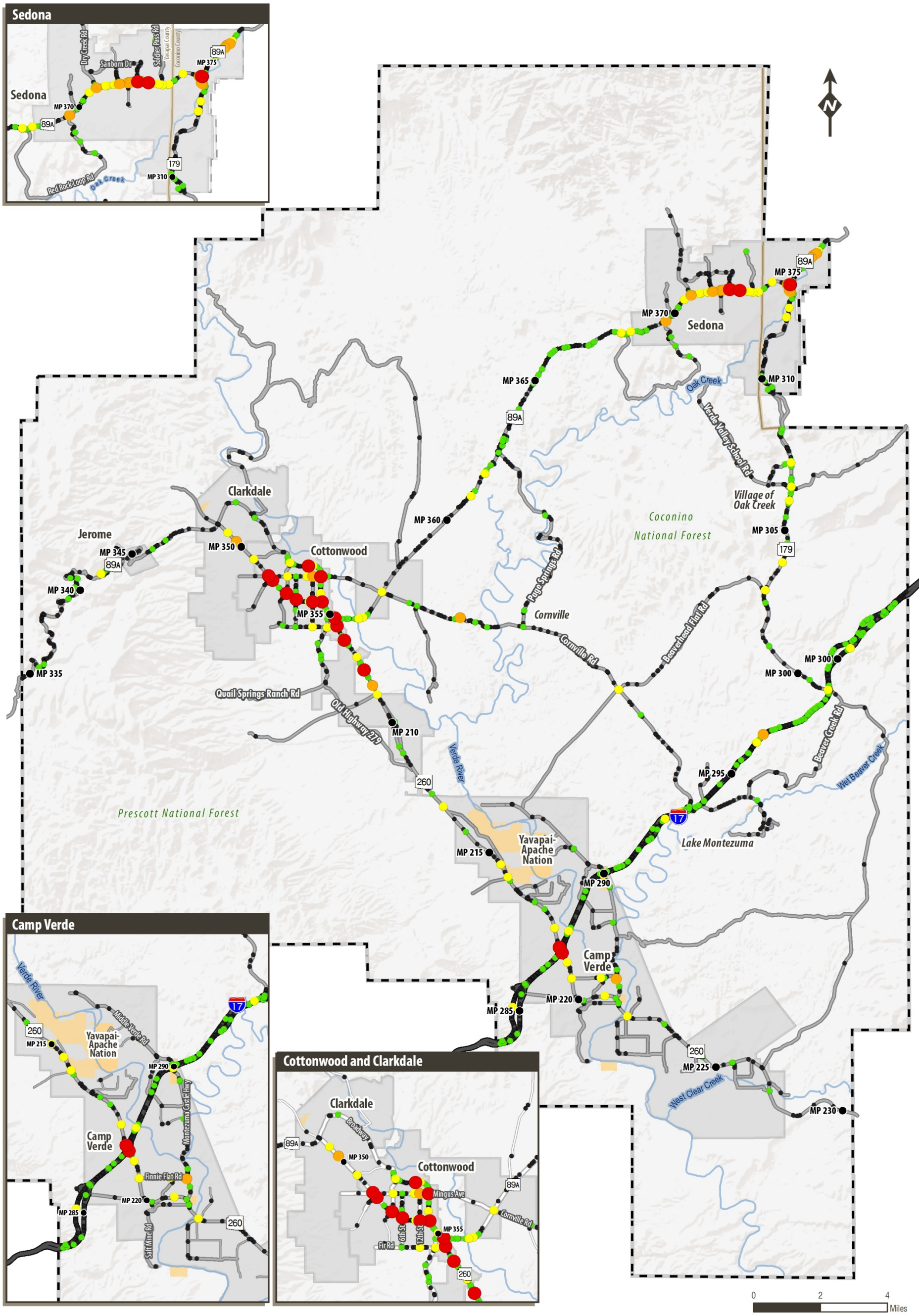
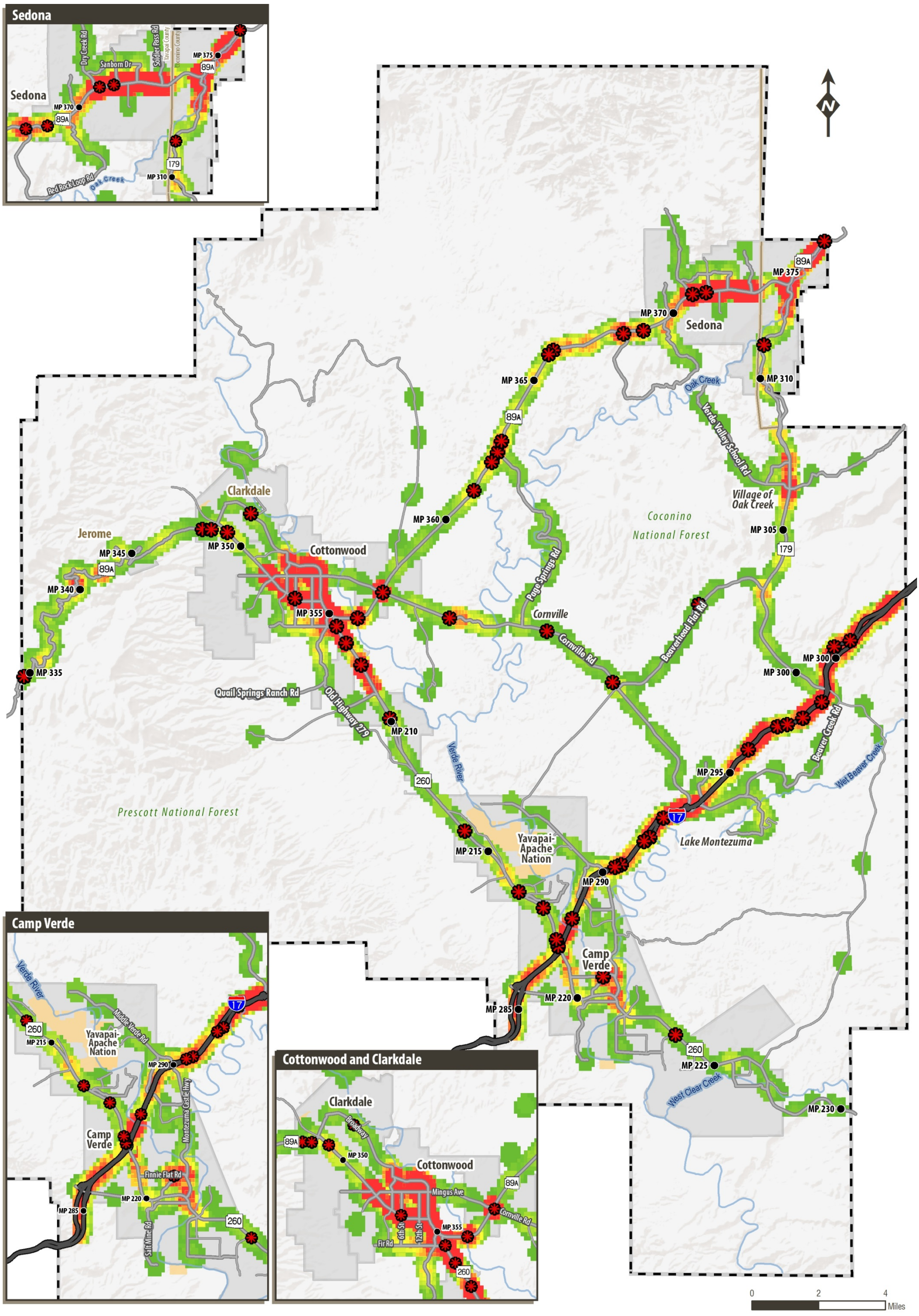


Figure 4.12: Crash Density and Fatal Crash Locations



Crash Rates

The crash rate method aims to normalize the frequency of crashes in regards to traffic volumes and corridor lengths. Crash rates for roadway segments are expressed in terms of crashes per million vehicle miles traveled. Crash rate is a function of the number of vehicles utilizing a roadway; therefore, a higher total number of crashes does not always result in a high crash rate. Within the study area, the highest crash rates occurred at:

- SR 89A (West of Jerome)
- SR 89A (Main Street to SR 260)
- SR 89A (Dry Creek Road to SR 179)
- SR 89A (SR 179 to MP 376)
- SR 179 (Schnebly Hill Road to SR 89A)
- SR 260 (SR 89A to Fir Street)
- SR 89A/SR 179 intersection
- SR 89A/SR 260 intersection
- Main Street (Yuma Road to SR 89A)
- Mingus Avenue (SR 89A to Main Street)
- Fir Street (Cottonwood)
- 12th Street (Cottonwood)
- Andante Drive (Sedona)
- Coffee Pot Drive (Sedona)
- Upper Red Rock Loop Road (Sedona)

Injury Severity

During the analysis period there were 36 fatal crashes on local roadways and 13 on I-17. Figure 4.12 provides an illustration of the locations of crashes that resulted in a fatality. Utilizing the Equivalent Property Damage Only (EPDO) method, road segments which have the highest probability of injury can be identified. The EPDO method is a system of scoring corridors/intersections in terms of safety by taking into account the total number of crashes at a location and the severity of each crash. The system is point based with different severity levels receiving different point values; Table 4.7 provides an overview of the EPDO point values. As shown in the table, EPDO scoring provides greater weight to fatal and injury crashes over Property Damage Only crashes. The severity index (SI) of a crash is equal to the total equivalent property damage only (EPDO) divided by the number of crashes. Corridors and intersections with a high crash severity index include:

Table 4.7: Equivalent Property Damage Only

Crash Injury	EPDO Value
Fatal	12
Severe Injury	7
Minor Injury	4
Possible Injury	2
Property Damage Only	1

Source: ADOT

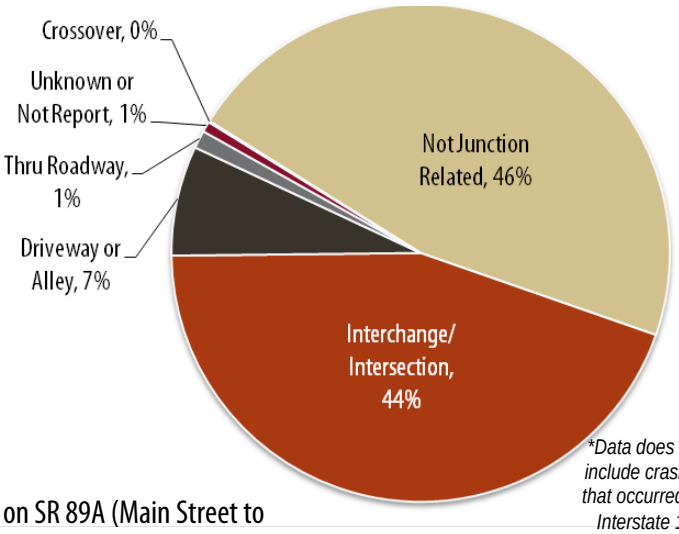
- Interstate 17 NB (MP 297 to 298): Severity Index = 5.00
- SR 89A/Page Springs Road Intersection: Severity Index = 4.45
- Cornville Road (Page Springs Road to Beaverhead Flat Road): Severity Index = 3.63
- Montezuma Castle Highway (Camp Verde): Severity Index = 3.56
- State Route 89A (MP 346 to Clarkdale Parkway): Severity Index = 3.33
- Interstate 17 SB (MP 301 - 300): Severity Index = 3.00
- State Route 89A (East of MP 334 to MP 343): Severity Index = 2.93
- Finnie Flat Road (Camp Verde) : Severity Index = 2.86
- SR 89A/Sixth Street Intersection: Severity Index = 2.65
- State Route 89A (MP 343 to MP 346): Severity Index = 2.64
- Mingus Avenue (Main Street to Cornville Road/SR 89A): Severity Index = 2.63

Intersection Related Crashes

Approximately 44% of crashes, or 1,616 out of 3,632 crashes, on local and regional study roadways were identified as being intersection or interchange related. The highest number of intersection related crashes occurred on:

- SR 89A/SR 179 – 151 crashes
- SR 89A/SR 260 – 143 crashes
- SR 260/Fir Street – 63 crashes
- SR 89A/Coffee Pot Drive – 36 crashes
- SR 89A/Black Hills Drive – 36 crashes
- SR 260/I-17 SB Ramp - 35 crashes

Intersection Related Crashes on Local Roadways*



*Data does not include crashes that occurred on Interstate 17

Additionally, a high number of driveway and alley crashes occurred on SR 89A (Main Street to SR 260), SR 89A (12th Street to Main Street), and SR 89A (Coffee Pot Road to Soldier Pass Road).

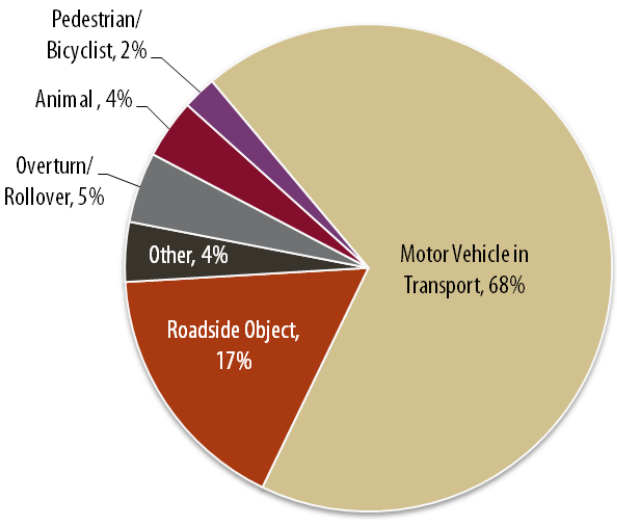
During the field review it was noted that high traffic volumes coupled with close driveway spacing in Cottonwood and Sedona created several turning movement conflicts. Due to the high tourist traffic, motorists may be unfamiliar with roundabout maneuvers or may be inattentive, causing safety concerns. Stakeholders commented that the SR 89A/Foothills Drive intersection is a major concern for the City of Sedona residents.

Leading Crash Causes

Analyzing the crash event assists in identifying hazards that cause safety issues along study roadways. Key observations made from the analysis of crash events include:

- A high percentage of crashes occurred with fixed, roadside objects, such as guardrails, fence, trees, and sign posts.
  - 17% of crashes on local roadways and 35% of crashes on I-17 involved fixed objects
  - High number of fixed roadside object crashes occurred at:
    - SR 89A (Page Springs Road to Red Rock Loop Road)
    - Cornville Road (SR 89A to Page Springs Road)
    - SR 179 (MP 307 to MP 310)
    - SR 89A (MP 340 to MP 3430)
    - Page Springs Road (SR 89A to Cornville Road)
    - I-17 SB (MP 297 to MP 296)
    - I-17 NB (MP 302 to MP 303)

Leading Crash Causes on Local Roadways*

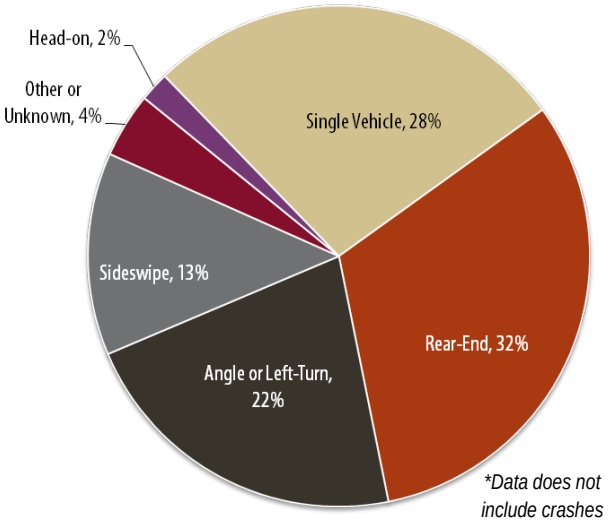


*Data does not include crashes that occurred on Interstate 17

- 143 animal related crashes occurred on local roadways and 52 on I-17.
  - 34% of animal related crashes on local roadways occurred on SR 89A from Page Springs Road to Red Rock Loop Road
  - 12% of animal related crashes on I-17 occurred southbound between MP 300 to MP 299

- The study area experienced a significant number of rear-end, angle, and sideswipe crashes on local roadways.
  - Highest number of rear-end crashes occurred at:
    - SR 89A/ SR 260 intersection – 60% of crashes
    - SR 89A (Andante Drive to Coffee Pot Drive)
    - SR 260 (Fir Street to Ogden Ranch Road)
    - SR 260 (Main Street to SR 260)
    - SR 89A/Cornville Road intersection
    - Main Street (Cottonwood), SR 260/Cherry Creek Road, Cornville Road, Mingus Avenue, and Montezuma Castle Highway also had a high number of rear-end crashes
  - Highest number of angle or left-turn crashes occurred at:
    - SR 89A (12th Street to SR 260)
    - SR 260 (SR 89A to Fir Street)
    - SR 89A (Dry Creek Road to Soldier Pass Road)
    - SR 89A/SR 179 intersection
    - SR 89A/SR 260 intersection
    - SR 89A/Fir Street intersection
    - Main Street (Cottonwood) and Mingus Avenue, and Fir Street also had a high number of angle and left-turn crashes
  - Highest number of sideswipe crashes occurred at:
    - SR 89A/SR 179 intersection
    - SR 89A/SR 260 intersection
    - SR 89A (Dry Creek Road to Andante Drive)
    - (Soldier Pass Road to SR 179) – 13.9% of sideswipe crashes
    - SR 89A (SR 179 to MP 376) – 7.8% of sideswipe crashes

Leading Collision Manner on Local Roadways



*Data does not include crashes that occurred on Interstate 17

- 4.7% of crashes were due to an overturn or rollover. Overturn and rollover accidents were cited as occurring heavily on SR 89A from Cornville Road to Red Rock Loop Road. This high number of crashes may be due to the high travel speeds along the corridor.

Pedestrian and Bicyclist Involved Crashes

Pedestrians were involved in 36 crashes on local roadways and three (3) crashes on I-17. Pedacyclists were cited as being involved in 45 crashes on local roadways. Key observations made from the analysis of crash events include:

- Corridors and intersections with high number of pedalcyclist involved crashes:
  - SR 89A/SR 179 – 10 pedalcyclist involved crashes
  - SR 89A (Andante Drive to Coffee Pot Road)
  - SR 89A/Shelby Drive
  - SR 89A/SR 260
  - SR 89A/Coffee Pot Drive
  - SR 89A (Page Springs Road to Red Rock Loop Road)
  - SR 89A (Main Street to SR 260)
- Corridors and intersections with high number of pedestrian involved crashes:
  - SR 89A/Shelby Drive
  - SR 89A/Fir Street
  - SR 89A/SR 260
  - SR 89A (6th St to 12th St)
  - Main Street (SR 89A to Mingus Avenue)
  - Pedestrian crashes on I-17 primarily occurred in the southbound direction from MP 289-288 and were cited as occurring during dark conditions.

ACCESS MANAGEMENT

Access management is a set of techniques used to proactively manage and regulate the design, spacing, and operation of intersections, driveways, and median openings along a roadway. Roadways with more access points and intersections have more opportunities for conflicts, and significant friction to through traffic, which contributes to congestion and crashes. The objective of access management is to provide access and to enhance the flow of traffic on a corridor or roadway system by improving safety, capacity, and speed.

Effective access management strategies control the number of driveways, decrease the number of crashes, reduce travel time and traffic congestion, preserve the flow of traffic, and improve access to properties. Primary design techniques include increasing driveway spacing, utilizing turning lanes, grade separating intersections, traffic signals, and medians. Applying access management techniques can also enhance the livability of a community, improve pedestrian/bicycle safety, enhance customer safety and convenience to businesses, provide additional areas for streetscaping, and promote efficient land and site design.



High traffic volumes and close driveway spacing on SR 89A

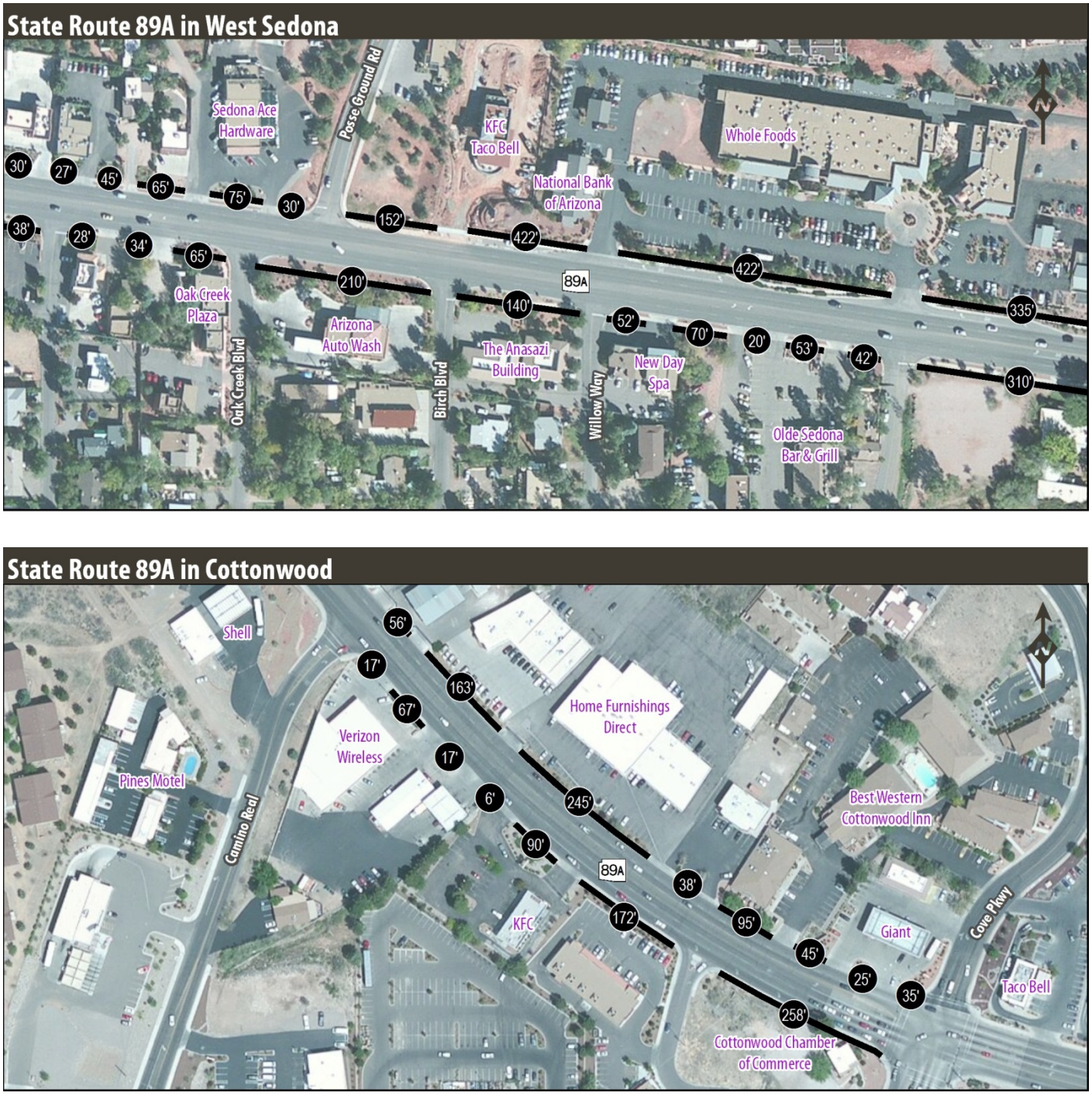


Raised medians control turning movements on SR 179

Access management guidelines for driveway spacing often range between 150 feet to over 300 feet. For instance, the City of Somerton requires driveways along Major Arterials to have a minimum spacing of 200 feet in commercial and residential areas. The City of Casa Grande requires a minimum driveway spacing of 200 feet on Major Arterials in commercial areas and 150 feet on Minor Arterials. Coconino County's Engineering Design and Construction Manual states that driveways are not permitted within 50 feet of a street intersection, 25 feet of a guardrail end, and within 100 feet of a bridge.

Figure 4.13 illustrates approximate driveway spacing along State Route SR 89A in Sedona and Cottonwood. As illustrated in the Figure, driveway spacing within Cottonwood ranges between less than 10 feet to 245 feet, while spacing in Sedona ranges from 20 feet to 420 feet. Close driveway spacing increases potential conflicts, particularly coupled with high traffic volumes and high travel speeds. Guidelines for minimum driveway or local street spacing should consider the speed of the roadway, stopping sight distance, the elimination of right-turn conflicts in the area of the access points.

Figure 4.13: West Sedona and Cottonwood Driveway Spacing



FUTURE TRAFFIC CONDITIONS

Programmed Improvements

Several roadway projects have been funded and programmed for completion. To identify potential future traffic capacity deficiencies, a roadway network of committed improvements were developed for analysis against projected 2025 and 2040 socioeconomic conditions. In the following traffic condition analysis section, this committed network is utilized to assess how well the region's roadway network performs in 2025 and 2040, *if no other roadway improvements are made (No-Build)*. Table 4.8 outlines the funded roadway improvements included in the committed roadway network.

Table 4.8: Funded Roadway Improvement Projects

Project Location	Improvement
SR 260 (Thousand Trails Road to I-17)	Widen to four-lanes with 7 roundabouts
Mingus Avenue (Willard Street to 10th Street)	One lane each direction, center-turn lane, sidewalks, bike lanes
Mingus Avenue (10th Street to SR 89A)	One lane each direction, center-turn lane, sidewalks, bike lanes
SR 260/ Industrial Drive	Construct roundabout

State Route 260 Programmed Improvements

ADOT is currently in the beginning phases of upgrading a nine-mile segment of SR 260 from a two-lane roadway to a four-lane, divided highway between Thousand Trails Road and I-17 in Camp Verde (mile posts 209.08-218.39). When complete, SR 260 will be a continuous four-lane divided highway between I-17 and Cottonwood and includes the construction of seven roundabouts. Key project elements include:

- Construction is scheduled to begin in 2016; project estimate for construction is $62 million.
- Construction of seven full-access roundabout intersections at Thousand Trails Road (MP 211.22), Coury Drive (MP 211.95), MP 214, MP 215, Cherry Creek Road (MP 215.93), Horseshoe Bend Road (MP 216.74) and Wilshire Drive (MP 218.30)
- Each roundabout is approximately 35 feet larger in diameter than the Cottonwood, Clarkdale and Sedona roundabouts and will allow a WB-67 truck (semi-trucks with 53 foot trailers) to stay in their dedicated lane while traveling through the roundabout.

Figure 4.14: Scheduled State Route 260 Widening Project



Source: ADOT Multimodal Planning Division

Traffic Forecasting Methodology

The primary purpose of forecasting traffic volumes is to estimate the additional travel demand added to existing roadways and to forecast congestion levels due to projected population and employment growth. In addition, this analysis provides valuable insight into potential transportation solutions. A regional travel demand model was utilized to estimate future traffic conditions.

Travel demand models are utilized to estimate travel conditions based on population, employment, and roadway network characteristics. These travel demand models utilize trip generations to estimate how many trips are created and attracted between homes and activity centers. Steps to develop a travel demand model include:

- Develop a roadway network of committed improvements (network includes characteristics such as the number of lanes, posted speed limits, functional classification, etc.)
- Allocate projected socioeconomic conditions and land use categories to specific Traffic Analysis Zones (TAZ)
- Generate existing vehicle trips based on land use conditions
- Distribute vehicle trips to TAZs
- Assign the vehicle trips to the street network
- Validate model utilizing existing traffic count data

Future Traffic Conditions

Estimations of traffic conditions were developed based on projected socioeconomic conditions presented in this Chapter 3. The future traffic forecasts presented in this section represent traffic volumes for the committed roadway network (No-Build scenario). This analysis helps evaluate how roadways perform *if no roadway improvements are made* for each of the 2025 and 2040 horizon years. Roadway performance is expressed in terms of Level of Service (LOS). In general for rural areas, LOS A and B represent little to no congestion, or that the roadway is "below capacity". Heavy congestion refers to a roadway that are nearing or above the capacity levels of a roadway. Road segments that have the highest traffic volumes are not necessarily the most congested, as some segments can carry higher amounts of traffic because they have more lanes.

Projected 2025 Traffic Conditions

Figure 4.15 displays the projected 2025 daily traffic volumes and the congestion levels for the committed roadway network, *if no other roadway improvements are made (No-Build)*. Roadways that are reaching capacity levels and may experience congestion include:

- **At or Above Capacity (LOS E & LOS F)**
  - SR 179 (Chapel Road to Ranger Road)
  - Beaver Creek Road (South of I-17)
  - Cornville Road (East of SR 89A)
  - Jacks Canyon Road (East of SR 179)
  - Montezuma Castle Highway/Main Street/Finnie Flat Road
  - Beaver Creek Road (I-17 to Rimrock Airport)
  - Verde Valley School Road (West of SR 179)
- **Near Capacity (LOS C & LOS D)**
  - I-17 (Middle Verde Road to Cornville Road)
  - SR 89A: Cement Plant Road to Black Hills Drive, Main St to SR 179
  - SR 179: Beaverhead Flat Road to Wild Horse Mesa Drive, Verde Valley School Road to Chapel Road
  - SR 260: SR 89A to Western Drive, north of I-17
  - Beaver Creek Road (East of Montezuma Lake Road)
  - Bell Rock Blvd (West of SR 179)
  - Black Hills Drive
  - Camino Real (south of SR 89A)

- Cliffside Trail
- Coffee Pot Road
- Cornville Road (Beaverhead Flat Road to east of SR 89A)
- Dry Creek Road
- Finnie Flat Road
- Fir Street (West of Camino Real)
- Jacks Canyon Road (East of SR 179)
- Main Street (Camp Verde)
- Main Street (Cottonwood): north of SR 89A
- Mingus Avenue: west of SR 89A, Main Street to Cornville Road
- Montezuma Castle Hwy
- Sixth Street (Mingus Avenue to Cottonwood Drive)
- Twelfth Street (south of 89A)
- Montezuma Lake Road (East and West of Beaver Creek Road)
- Page Springs Road

- **Below Capacity (LOS A & LOS B):** All other roadways perform at a LOS of B or greater

Projected 2040 Traffic Conditions

Figure 4.16 displays the projected 2040 daily traffic volumes and the congestion levels for the committed roadway network, *if no other roadway improvements are made (No-Build)*. Roadways that are reaching capacity levels and may experience congestion include:

- **At or Above Capacity (LOS E & LOS F)**
  - SR 89A (North of Black Hills Drive)
  - SR 179 (Intersection with I-17)
  - SR 179 (SR 89A to Bell Rock Blvd)
  - Beaver Creek Road
  - Black Hills Drive (west of SR 89A)
  - Camino Real (south of Fir Street)
  - Cornville Road (east of SR 89A)
  - Dry Creek Road (north of SR 89A)
  - Jacks Canyon Road (east of SR 179)
  - Lake Montezuma Avenue/Beaver Creek Road (I-17 to Rimrock Airport)
  - Montezuma Castle Highway (Portions of Roadway)
  - Montezuma Castle Highway/Main Street/Finnie Flat Road
  - Page Springs Road (north of Cornville Road)
  - Verde Valley School Road (west of SR 179)

Near Capacity (LOS C & LOS D)

- I-17: south of General Crook Trail, SR 260 to Cornville Road
- SR 89A: Clarkdale Parkway to Mingus Avenue, east of Mingus Avenue to SR 179, north of SR 179
- SR 179: I-17 to Bell Rock Blvd, south of SR 89A
- SR 260: west of Verde Park Drive, I-17 to SR 89A
- Aspen Way (south of SR 260)
- Bell Rock Blvd (west of SR 179)
- Black Hills Drive (west of Gale Avenue)
- Boot Hill Road
- Camino Real (south of SR 89A)
- Cliffside Trail
- Coffee Pot Drive
- Cornville Road (Tissaw Rd to Beaverhead Flat Road)
- Dry Creek Road
- Finnie Flat Road
- Fir Street (west of Camino Real)
- Jacks Canyon Road (east of SR 179)
- Main Street (Camp Verde)
- Main Street (Cottonwood): north of SR 89A, west of Willard Street
- Mingus Avenue: west of SR89A, Twelfth Street to SR 89A)
- Montezuma Castle Highway
- Montezuma Avenue (South of Beaver Creek Road)
- Page Springs Road
- Sixth Street (Cottonwood): south of SR 89A to Mingus Avenue
- Soldiers Pass Road
- Tissaw Road (south of Cornville Road)
- Twelfth Street (south of SR 89A)
- Verde Valley School Rd (west of SR 179)
- Yuma Road (east of SR89A)

Below Capacity (LOS A & LOS B): All other roadways perform at a LOS of B or greater

Figure 4.15: 2025 Nobuild Level of Congestion

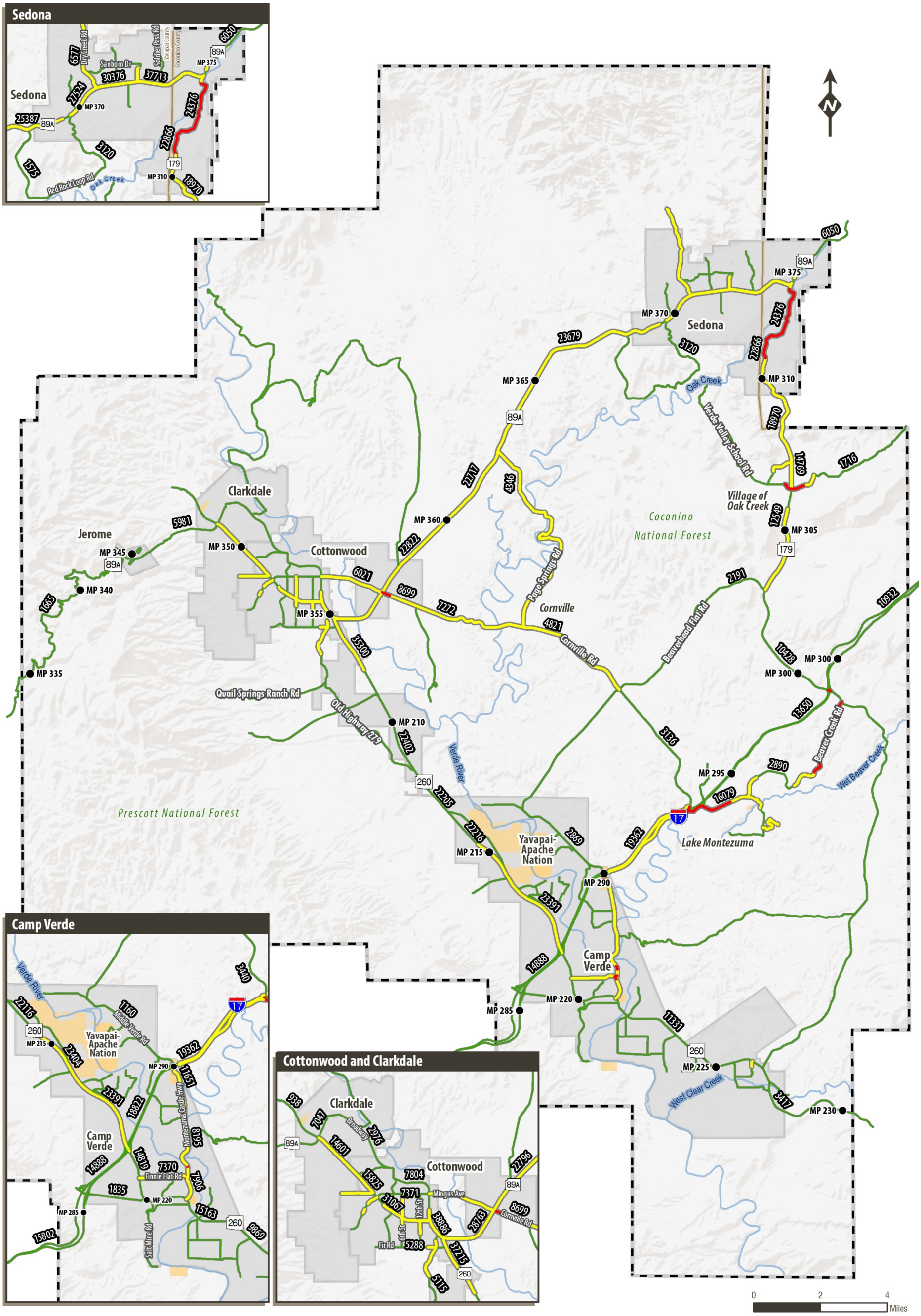
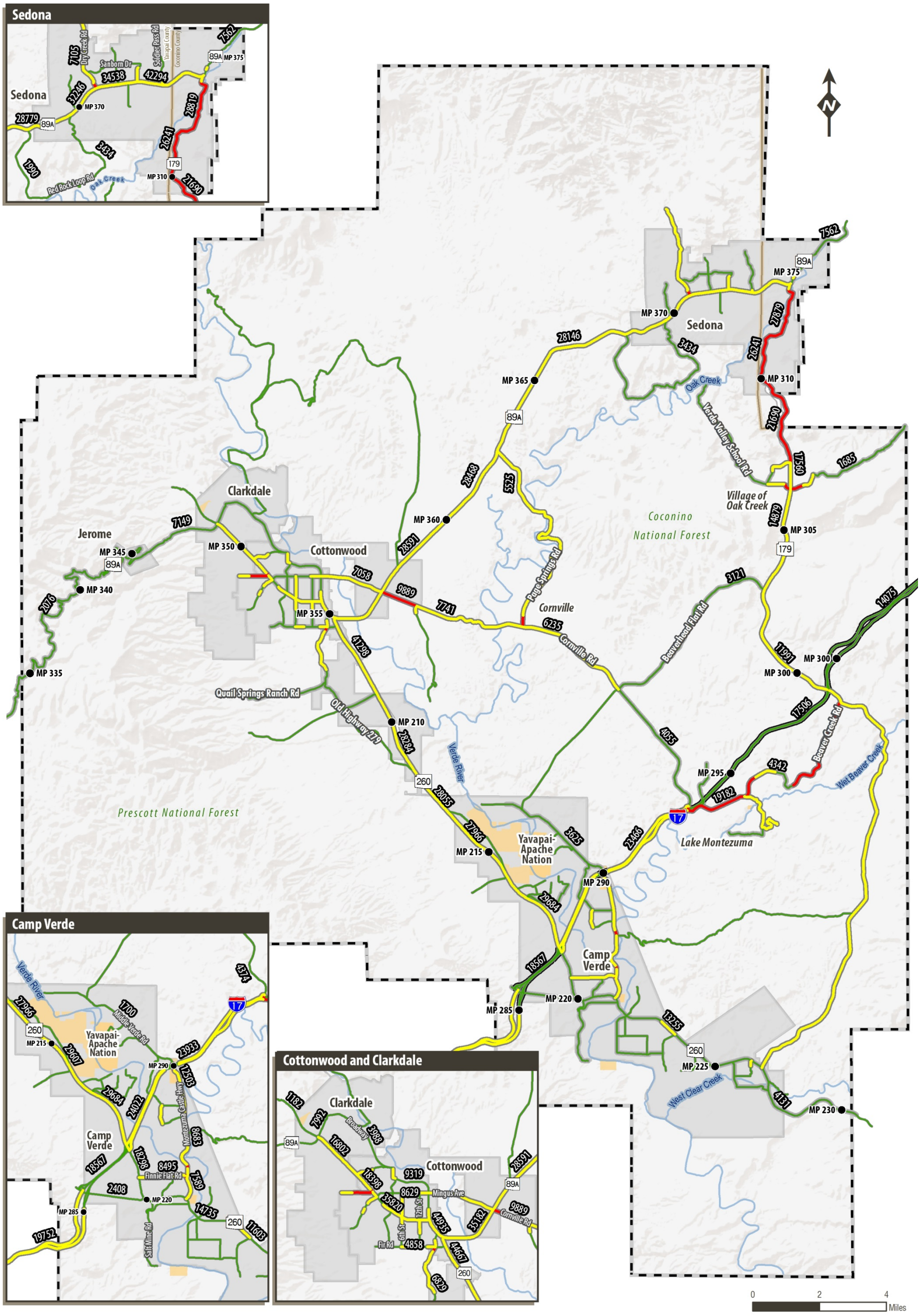


Figure 4.16: 2040 Nobuild Level of Congestion



OTHER MODES OF TRANSPORTATION

Active living is a critical component of the *Verde Valley Master Transportation Plan*. Alternative modes of transportation are an important aspect of the multimodal transportation network as they provide mobility for those not able to operate without access to a vehicle and encourage physical activity. This section analyzes the existing pedestrian, bicycle, and transit services and facilities.

Existing Pedestrian, Bicycle, and Trail Facilities

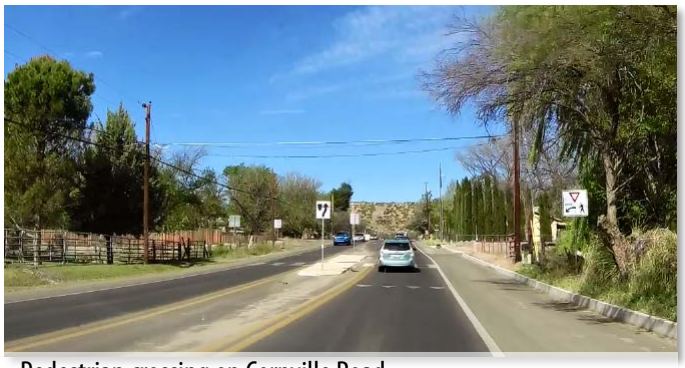
A complete, continuous network of pedestrian and bicycle facilities that connects communities, residential areas, and activity centers provides residents with an alternative mode of transportation as well as promotes outdoor recreation. TAC members and stakeholders commented that active living through the use of pedestrian and bicycle facilities are critical concerns for area residents. Figure 4.17 illustrates existing pedestrian, bicycle, and trail facilities.

Pedestrian Facilities

Based on input from stakeholders and the field review, pedestrian facilities within the study area include:



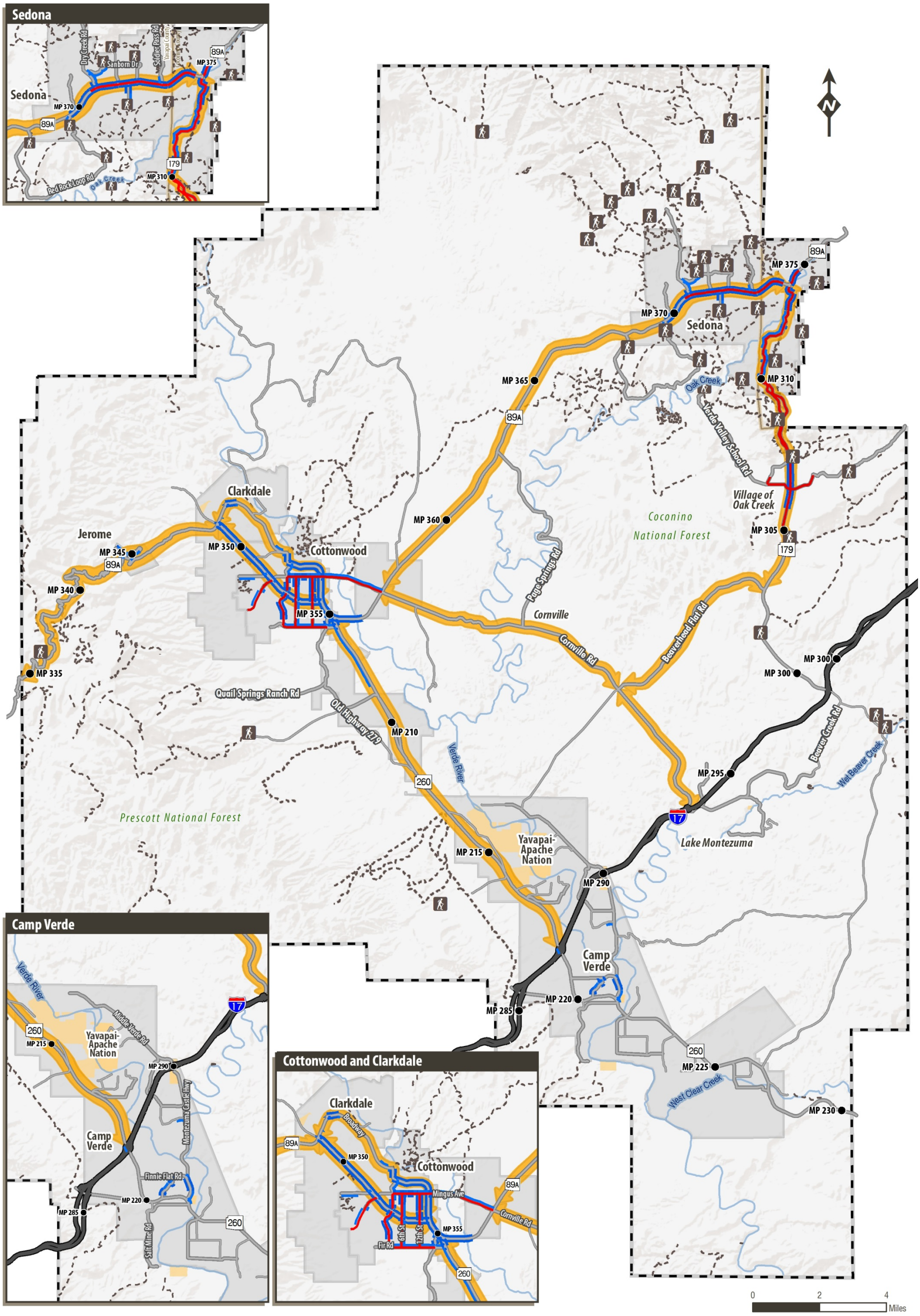
Pedestrian crossing at SR 260/Fir Street intersection



Pedestrian crossing on Cornville Road

- Pedestrian sidewalks are only available along select roadways in Camp Verde, Clarkdale, Cottonwood, Jerome, Sedona, and in the Village of Oak Creek.
- Cottonwood has the most comprehensive network of pedestrian facilities within the study area. Sidewalks within Cottonwood are generally adjacent to the roadway and in fair to good condition.
- Sidewalks along SR 179 in the Village of Oak Creek and Sedona are offset from the roadway. Sidewalk buffers increase pedestrian safety and comfort, provide an area for snow storage, and enhance streetscaping.
- Stakeholders from the Town of Clarkdale expressed concern on sidewalk connectivity within their community – particularly between the Clarkdale Jerome School and the Mountain Gateway housing community.
- Stakeholders commented that there is heavy pedestrian usage on SR 260 from the Yavapai County Jail to the Chevron Gas station north of the I-17 interchange.
- Stakeholders and the public suggested installing additional marked pedestrian crossing facilities on SR 89A in Clarkdale and Cottonwood, SR 89A (Uptown Sedona), Main Street (Cottonwood), Finnie Flat Road (Camp Verde), and on SR 260.
- The Black Canyon Wash Bridge on SR 260, south of Cottonwood, was noted by stakeholders as lacking pedestrian facilities, forcing pedestrians to enter travel lanes. Additionally, the Wilbur Canyon Bridge on SR 260 was noted during the field review as having insufficient pedestrian access.
- Lake Montezuma, Cornville, and local roadways within the Village of Oak Creek lack pedestrian facilities

Figure 4.17: Existing Pedestrian, Bicycle, and Trail Facilities



Data Source: Arizona Department of Transportation; Yavapai County; Arizona State Land Resource Information System; Esri; US Forest Service

Bicycle Facilities

Bicycle lanes are designated portions of the roadway exclusively utilized by bicyclists; typically these lanes are distinguished by a white stripe, a bicycle symbol, and signage alerting drivers of bicyclist usage. A shared roadway is a roadway which is open to both bicycle and motor vehicle travel; this may be an existing roadway, street with wide curbed lanes, or roads with paved shoulders. According to AASHTO's design standards, paved shoulder should be at least four-feet wide to accommodate bicycle travel; additionally, AASHTO recommends a five-feet shoulder from the face of guardrail, curb or other roadside barriers. Rumble strips or raised pavement markers are not recommended where shoulders are used by bicyclists; however, per ADOT Traffic Engineering Guidelines and Processes, if rumble strips are incorporated into the shoulder design a four foot clear area needs to be provided from the outside edge of the rumble strip pattern to the edge of pavement. Based on input from stakeholders and the field review, bicycle facilities within the study area include:

- Bike lanes and shared roadways include:
  - SR 260: SR 89A to Western Drive (Cottonwood)
  - SR 260: Main Street to Salt Mine Road (Camp Verde)
  - SR 89A: Clarkdale Parkway to Zalesky Road (Cottonwood/Clarkdale)
  - SR 89A: Upper Red Rock Loop Road to Apple Avenue (Sedona)
  - SR 179: MP 304.5 to SR 89A (Village of Oak Creek/Sedona)
  - Clarkdale: Main Street and Broadway (shared)
  - Cottonwood: majority of collectors
  - Camp Verde: Cliff Parkway, Main Street, Montezuma Castle Highway (shared)
  - Unincorporated Yavapai County shared roadways: Page Springs Road, Cornville Road, Beaver Creek Road, and Beaverhead Flat Road
- Stakeholders and representatives of the Verde Valley Cyclists Coalition identified heavily utilized bicyclist corridors that require wider shoulders to safely accommodate bicycle traffic:
  - SR 89A: West of SR 260
  - SR 179:North of Beaverhead Flat Road
  - Cornville Road
  - Beaverhead Flat Road
  - Broadway (Clarkdale)



Cyclist utilizing paved shoulder in Lake Montezuma



Bike lane on SR 89A in West Sedona



Bike lane on SR 179 in the Village of Oak Creek

Representatives from the Verde Valley Cyclists Coalition also recommended that curbs on SR 89A and SR 179 be rolled for enhanced bicyclist safety. The *2013 ADOT Statewide Bicycle and Pedestrian Plan Update* provides a long-term plan for pedestrian and bicycle facilities for the Arizona State Highway System. The Statewide Bicycle Network includes the ADOT State Highways that are described plus the regionally significant non-ADOT bicycle facilities from the existing plans. During the development of the Plan, bicycle counts were captured along SR 179; counts along the roadway ranged between 996 – 2,086 bicyclists per month.

Trail Facilities

Due to the region's location within the Coconino and Prescott National Forest, hiking is one of the most popular recreational activities for visitors and residents in the Verde Valley. The Coconino National Forest has estimated that the forest has over 700,000 trail users each year. Based on data provided by Yavapai County, Coconino National Forest, and Prescott National Forest, the Verde Valley study area has over 330 miles of hiking, mountain biking, and equestrian trails. A total of 36 trailheads are located throughout the study area and range from unpaved parking lots to paved parking areas with restrooms and informational signage.

Existing Transit Services

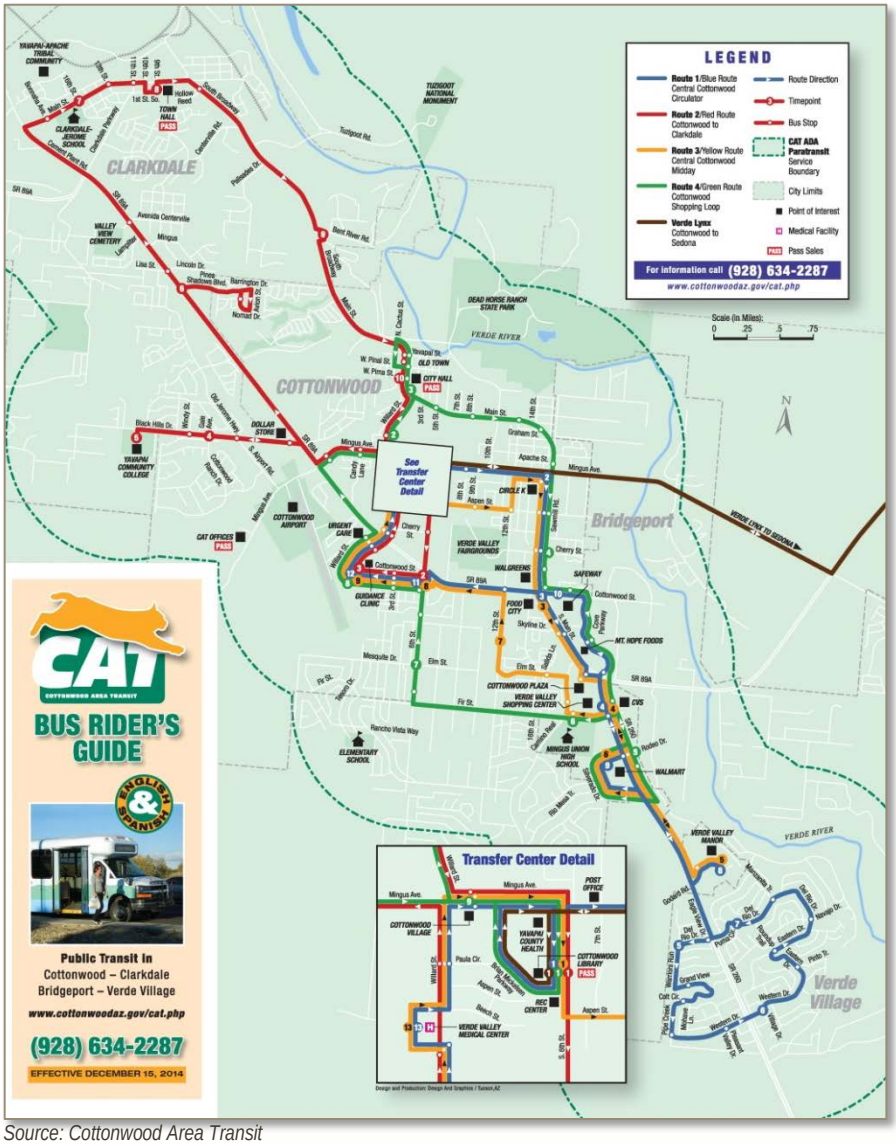
Transit service within the Verde Valley is currently provided by the Cottonwood Area Transit (CAT), Verde Lynx, and the Yavapai-Apache Transit System. This section provides an overview of current transit services within the study area. Additional information and commuting characteristics can be found in *Working Paper 1: Existing Conditions.*

Cottonwood Area Transit (CAT)

CAT is a deviated fixed routes transit and demand responsive transit system that provides service to Cottonwood, Clarkdale, and the Verde Village. Figure 4.18 illustrates CAT's existing transit routes and Figure 4.19 outlines CAT's existing route schedule. Service includes:

- Operates Monday – Friday 6:45am to 6:45pm
- Connects to Cottonwood Library every 45 minutes
- Rates: One-way service $1.25; all day unlimited service $3.00; unlimited monthly pass $40.00
- Schedule daily stops include:
  - Clarkdale - Town Hall, Clarkdale-Jerome School, Post Office
  - Cottonwood – Cottonwood Library, Lions' Club Park, City Hall, Wal-Mart, Mingus Union High School, Guidance Clinic, Cottonwood Village, Yavapai College, Pine Shadows, Circle K, Food City, Manor House, Verde Valley Medical Center, and Verde Valley Shopping Center
  - Verde Village – Del Rio Drive/Warriors Run, Verde Valley Club House, Del Rio Drive/Puma Circle
- Passengers may embark/disembark at any bus stop designated on the route map, shown in Figure 4.18.

Figure 4.18: Cottonwood Area Transit Service Routes



Source: Cottonwood Area Transit

Figure 4.19: Cottonwood Area Transit Routes Schedules

GREEN ROUTE Monday – Friday 6:45 a.m. – 6:32 p.m.

Bus Stop																	
1 Depart – Cottowood Library	6:45	7:30	8:15	9:00	9:45	10:30	11:15	12:00	12:45	1:30	2:15	3:00	3:45	4:30	5:15	6:00
2 Willard St./ N. Main St. *(Lion's Club Park)*	6:47	7:32	8:17	9:02	9:47	10:32	11:17	12:02	12:47	1:32	2:17	3:02	3:47	4:32	5:17	6:02
3 W. Balboa St. / N. Main St. *(City HR/Finance Bldg.)*	6:50	7:35	8:20	9:05	9:50	10:35	11:20	12:05	12:50	1:35	2:20	3:05	3:50	4:35	5:20	6:05
4 E. Cherry St. / S. Main St.	6:54	7:39	8:24	9:09	9:54	10:39	11:24	12:09	12:54	1:39	2:24	3:09	3:54	4:39	5:24	6:09
5 Hwy. 260 / Rodeo Dr. *(Wal-Mart)*	7:01	7:46	8:31	9:16	10:01	10:46	11:31	12:16	1:01	1:46	2:31	3:16	4:01	4:46	5:31	6:16
6 Fir St. *(Mingus Union High School)*	7:06	7:51	8:36	9:21	10:06	10:51	11:36	12:21	1:06	1:51	2:36	3:21	4:06	4:51	5:36	6:21
7 S. 6th St. / E. Elm St	7:10	7:55	8:40	9:25	10:10	10:55	11:40	12:25	1:10	1:55	2:40	3:25	4:10	4:55	5:40	6:25
8 E. Cottonwood St. / S. Willard St. *(Guidance Clinic)*	7:12	7:57	8:42	9:27	10:12	10:57	11:42	12:27	1:12	1:57	2:42	3:27	4:12	4:57	5:42	6:27
9 E. Mingus / S. Willard *(Cottonwood Village)*	7:15	8:00	8:45	9:30	10:15	11:00	11:45	12:30	1:15	2:00	2:45	3:30	4:15	5:00	5:45	6:30
1 Arrive - Cottonwood Library	7:17	8:02	8:47	9:32	10:17	11:02	11:47	12:32	1:17	2:02	2:47	3:32	4:17	5:02	5:47	6:32

YELLOW ROUTE Monday – Friday 8:15 a.m. – 4:59 p.m.

Bus Stop													
1 Depart – Cottonwood Library	8:15	9:00	9:45	10:30	11:15	12:00	12:45	1:30	2:15	3:00	3:45	4:30
2 Mingus Ave. / N. Main St. *(Circle K)*	8:18	9:03	9:48	10:33	11:18	12:03	12:48	1:33	2:18	3:03	3:48	4:33
3 S. Main St. at SR 89A *(Food City)*	8:21	9:06	9:51	10:36	11:21	12:06	12:51	1:36	2:21	3:06	3:51	4:36
4 Hwy. 260 at Fir St. *(Jack in the Box)*	8:23	9:08	9:53	10:38	11:23	12:08	12:53	1:38	2:23	3:08	3:53	4:38
5 Goddard Rd. / Hwy. 260 *(The Manor Office)*	8:26	9:11	9:56	10:41	11:26	12:11	12:56	1:41	2:26	3:11	3:56	4:41
6 *Wal-Mart Garden Center*	8:29	9:14	9:59	10:44	11:29	12:14	12:59	1:44	2:29	3:14	3:59	4:44
7 12th St. at Christian Care	8:35	9:20	10:05	10:50	11:35	12:20	1:05	1:50	2:35	3:20	4:05	4:50
8 Cottonwood St. at 6th St.	8:37	9:22	10:07	10:52	11:37	12:22	1:07	1:52	2:37	3:22	4:07	4:52
9 E. Cottonwood St. / Willard St. *(Guidance Clinic)*	8:38	9:23	10:08	10:53	11:38	12:23	1:08	1:53	2:38	3:23	4:08	4:53
10 Verde Valley Medical Center	8:41	9:26	10:11	10:56	11:41	12:26	1:11	1:56	2:41	3:26	4:11	4:56
1 Arrive - Cottonwood Library	8:44	9:29	10:14	10:59	11:44	12:29	1:14	1:59	2:44	3:29	4:14	4:59

RED ROUTE Monday – Friday 6:45 a.m. – 6:31 p.m.

Bus Stop																
COTTONWOOD TO CLARKDALE																
1 Depart – Cottowood Library	6:45	7:30	8:15	9:00	9:45	10:30	11:15	12:00	12:45	1:30	2:15	3:00	3:45	4:30	5:15	6:00
2 Cottonwood St. & 6th St.	6:47	7:32	8:17	9:02	9:47	10:32	11:17	12:02	12:47	1:32	2:17	3:02	3:47	4:32	5:17	6:02
3 E. Cottonwood St. / S. Willard St. *(Guidance Clinic)*	6:48	7:33	8:18	9:03	9:48	10:33	11:18	12:03	12:48	1:33	2:18	3:03	3:48	4:33	5:18	6:03
4 Black Hills Dr. / Gale Ave.	6:53	7:38	8:23	9:08	9:53	10:38	11:23	12:08	12:53	1:38	2:23	3:08	3:53	4:38	5:23	6:08
5 Yavapai College *(Front Only)*	6:55	7:40	8:25	9:10	9:55	10:40	11:25	12:10	12:55	1:40	2:25	3:10	3:55	4:40	5:25	6:10
6 Pine Shadows Dr. / SR 89A *(Pine Shadows)*	7:00	7:45	8:30	9:15	10:00	10:45	11:30	12:15	1:00	1:45	2:30	3:15	4:00	4:45	5:30	6:15
7 Main St. / Clarkdale – Jerome School	7:07	7:52	8:37	9:22	10:07	10:52	11:37	12:22	1:07	1:52	2:37	3:22	4:07	4:52	5:37	6:22
8 Main St. / S. 9th St. *(Clarkdale Post Office)*	7:09	7:54	8:39	9:24	10:09	10:54	11:39	12:24	1:09	1:54	2:39	3:24	4:09	4:54	5:39	6:24
CLARKDALE TO COTTONWOOD																
9 S. Broadway / Bent River Ranch Rd.	7:11	7:56	8:41	9:26	10:11	10:56	11:41	12:26	1:11	1:56	2:41	3:26	4:11	4:56	5:41	6:26
10 N. Main St. / City HR/Finance Bldg.	7:13	7:58	8:43	9:28	10:13	10:58	11:43	12:28	1:13	1:58	2:43	3:28	4:13	4:58	5:43	6:28
1 Arrive - Cottonwood Library	7:16	8:01	8:46	9:31	10:16	11:01	11:46	12:31	1:16	2:01	2:46	3:31	4:16	5:01	5:46	6:31

BLUE ROUTE Monday – Friday 6:45 a.m. – 6:37 p.m.

Bus Stop				
COTTONWOOD				
1 Depart – Cottonwood Library	6:45	7:30	5:15	6:00
2 Mingus Ave. / N. Main St. *(Circle K)*	6:48	7:33	5:18	6:03
3 S. Main St. at SR 89A *(Food City)*	6:51	7:36	5:21	6:06
4 Hwy. 260 at Fir St. *(Jack in the Box)*	6:53	7:38	5:23	6:08
VERDE VILLAGE				
5 Del Rio Dr. at Warriors Run	6:56	7:41	5:26	6:11
6 Western Dr. at Village Dr. *(Verde Valley Clubhouse)*	6:59	7:44	5:29	6:14
7 Del Rio Dr. at Puma Cir.	7:04	7:49	5:34	6:19
COTTONWOOD				
8 Goddard Rd. / Hwy. 260 *(The Manor Office)*	7:07	7:52	5:37	6:22
9 *Wal-Mart Garden Center*	7:10	7:55	5:40	6:25
10 Cottonwood St. at Sawmill Rd.	7:14	7:59	5:44	6:29
11 Cottonwood St. at 6th St.	7:17	8:02	5:47	6:32
12 E. Cottonwood St. / Willard St. *(Guidance Clinic)*	7:18	8:03	5:48	6:33
13 Verde Valley Medical Center	7:20	8:05	5:50	6:35
1 Arrive - Cottonwood Library	7:22	8:07	5:52	6:37

Fixed route trip planning (Powered by Google Transit) is available on *www.cat.az.gov*

It is the policy of the City of Cottonwwod to comply with Title VI of the Civil Rights Act of 1964. Transportation services will be provided without regard to race, color, national origin, age, gender or disability. For more information, or to file a complaint, contact: The Transportation Manager at (928) 634-2287, transit@cottonwoodaz.gov. or ADOT Civil Rights office at (602) 712-8946 or Civilrightsoffice@azdot.gov.

For information in languages other than English, contact: The Transportation Manager at (928) 634-2287, transit@cottonwoodaz.gov.

Es la política de la City of Cottownwood para cumplir con el Título VI del Acta de Derechos Civiles de 1964. Los servicios de transporte se proporcionarán sin importar raza, color, origen nacional, edad, género o discapacidad. Para más información o para presentar alguna queja, comuníquese con: The Transportation Manager at (928) 634-2287, transit@cottonwoodaz.gov o a la oficina de Derechos Civiles ADOT al (602) 712-8946 o Civilrightsoffice@azdot.gov.

Para información en idiomas distintos del inglés, comuníquese con: The Transportation Manager at (928) 634-2287, transit@cottonwoodaz.gov.

Source: Cottonwood Area Transit

Verde Lynx

Verde Lynx provides expanded commuter service between Cottonwood and Sedona seven days a week. Figure 4.20 illustrates the Verde Lynx service route. Service includes:

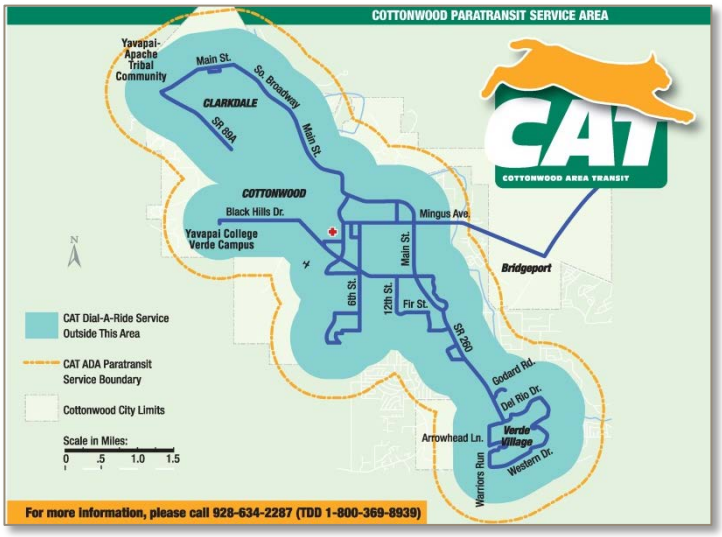
- Monday - Saturday Service: 6:00 AM - 7:15 PM
- Sunday Service: 7:30 AM- 6:00 PM
- Free park and ride facilities available at Garrison Park (Cottonwood) and the Sedona Municipal Lot.
- Riders can connect to one of the four CAT routes at the Cottonwood Library
- Scheduled bus stops include: Sedona Medical Center, Sedona Red Rock High School, Tlaquepaque, Poco Diablo Resort, Safeway, Sedona Municipal Parking lot

Figure 4.20: Verde Lynx Service Route



CAT Paratransit

CAT provides on-demand origin to destination transportation for persons with disabilities that are unable to utilize the CAT fixed route service. Paratransit service is available to patrons within 0.75 miles of a CAT fixed route bus stop. The service is a shared-ride and requires a 24-hour advance reservation. CAT also provides Dial-a-Ride service to an extended area; however, space is limited and is not guaranteed. Dial-a-Ride service is available citywide on Saturdays, when the fixed route buses are not running.



Yavapai-Apache Nation (YAN) Transit System

While the primary goal of the YAN Transit service is to provide transportation to Tribal members between Camp Verde and Clarkdale, the service has quickly become a vital transit system to all residents in the Verde Valley. The service is open to the entire Verde Valley and provides service to Camp Verde, Cottonwood, Clarkdale, and the Yavapai-Apache Nation. Figure 4.21 illustrates the YAN bus route and bus stop locations. Service includes:

- Monday– Friday Express Route Service: 6:45 AM - 6:10 PM
- Monday– Friday Daily Service: 8:45 AM - 4:16 PM
- Riders can connect to one of the four CAT routes at the Cottonwood Library.
- Rates: single ride fare $1.25; all day unlimited service $3.00; unlimited monthly pass $40.00
- Schedule daily stops include:
  - Yavapai-Apache Nation – YAN Medical Center, YAN Social Service, YAN Admin Complex, Cliff Castle Casino
  - Camp Verde - Finnie Flat Road/Cliff Parkway, Goswick Way, Yavapai County Courthouse
  - Cottonwood – Wal-Mart, Safeway, Cottonwood Library, Verde Valley Medical Center, and Yavapai College
  - Clarkdale - Beecher/Bonnaha

Figure 4.21: Yavapai-Apache Transit Service Route



Existing CAT Ridership

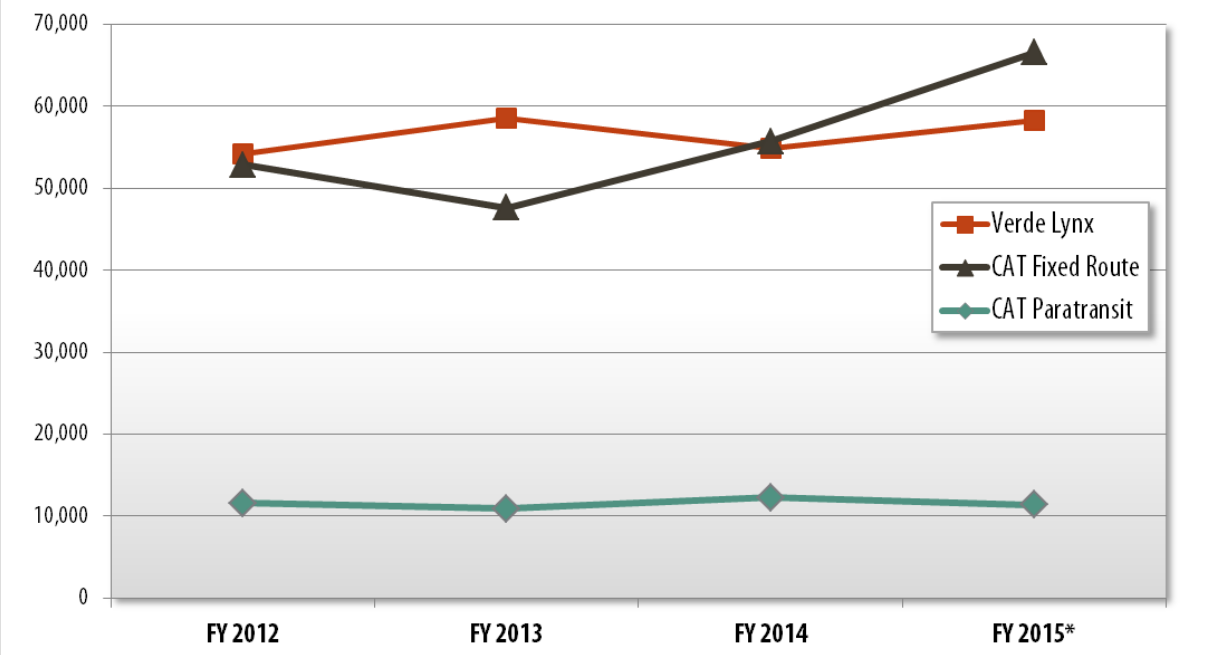
Ridership data was obtained from the Cottonwood Area Transit in order to assess the study area's usage of transit. As shown in Figure 4.22 and Table 4.9, ridership on the Verde Lynx and CAT Fixed Route service has significantly increased since 2012, while ridership on the CAT Paratransit has remained fairly consistent since 2012. In 2015, the Verde Lynx had 175 riders on average per day while the CAT Fixed Route service had an average of 282 riders. Ridership on all services is historically the highest August – October and March – April. The CAT Fixed Route service has had the highest increase in usage (21% since 2012); however, it has also has the lowest increase in revenue miles and hours. The Verde Lynx has experienced the highest increase in total revenue miles (20% increases since 2012).

Table 4.9: Existing CAT Ridership Summary

	FY 2012	FY 2013	FY 2014	FY 2015*	Total
Total Ridership					
Verde Lynx	54,167	58,615	54,930	58,224	225,936
CAT Fixed Route	52,838	47,628	55,705	66,546	222,717
CAT Paratransit	11,578	10,883	12,239	11,368	46,068
Total Revenue Miles					
Verde Lynx	124,400	125,646	143,476	154,910	548,432
CAT Fixed Route	118,212	98,398	118,724	131,540	466,874
CAT Paratransit	35,182	45,703	54,752	41,996	177,633
Total Revenue Hours					
Verde Lynx	3,608	3,776	4,879	4,879	17,142
CAT Fixed Route	6,934	5,586	7,956	9,202	29,678
CAT Paratransit	3,467	4,674	5,225	4,801	18,167

**Funding Year 2015 does not Include June 2015 data*
Source: Cottonwood Area Transit

Figure 4.22: Existing Cottonwood Area Transit Total Ridership



**Funding Year 2015 does not Include June 2015 data*
Source: Cottonwood Area Transit

Public Transit Human Services

Human Services transportation includes transportation options designed to meet the needs of a transportation disadvantaged individuals. Targeted individuals for human services include elderly, disabled and low income persons. Human service options available in the Verde Valley are listed in Table 4.10.

The following is a list of mobility gaps and deficiencies in the human services transportation in the Verde Valley, as noted in the NACOG *2015 Human Services & Public Transit Coordinated Transportation Plan*.

- Coordinating Human Service trips: minimizing duplication and filling gaps in specific communities are top priorities.
- Developing a regional service plan to meet the growing aging population
- Low-income transportation options: the region has a shortage of affordable transportation, which may be addressed through the implementation of tribal public transportation, the expansion of a low-income based voucher program, and client-based programs that offer service to riders who are non-clients
- Constricting revenue streams
- Driver training and sharing: the region lacks a training coordinator to implement driver training
- Strengthening information and referral services: the information that is most needed by the public, trainers, and case managers should be identified and consolidated on a web-based format that can easily be updated and managed. Additionally, the Plan recommends developing a public relations campaign.
- Travel Training: through travel training, citizens will have the opportunity to be "matched" to the service agency that best meets their needs

Table 4.10: Human Service Transit Providers

Name	Description	Locations Served	Fleet Size	Annual Passenger Trips	Annual Miles
Adult Care Services	Provides adult day care services	Camp Verde, Clarkdale, Cottonwood, Prescott Area	10	300	316,000
Area Agency on Aging	Offers case management services	N/A	N/A	N/A	N/A
Beaver Creek Adult Center	Volunteer operated and maintained community transportation service	All Verde Valley communities (except Jerome), Flagstaff, Phoenix, Prescott Area	1	3,400	23,000
Catholic Charities Community Services	Provides transportation for medical and other essential services	All Verde Valley communities (except Village of Oak Creek), Prescott Area	N/A	300	N/A
Disabled American Veterans	Provides transportation to veterans for medical appointments	Cottonwood, Phoenix, Prescott Area	2	1,800	N/A
NAU – Senior Companion Program	Program that matches volunteers to homebound individuals who provide transportation and other services	All Verde Valley communities (except Jerome and Page Springs)		2,200	9,500
NAZCARE	Provides non-emergency transportation for adults with mental illness or substance abuse issues	All Verde Valley communities (except Jerome, Page Springs, Sedona, Village of Oak Creek	1	900	52,000
Rainbow Acres	Transportation is provided primarily for medical appointments and social service trips	All Verde Valley communities	14	15,200	119,000

Source: NACOG 2015 Human Services & Public Transit Coordinated Transportation Plan

Table 4.10: Human Service Transit Providers (Continued)

Name	Description	Locations Served	Fleet Size	Annual Passenger Trips	Annual Miles
Rescue Morning Ranch	Provides transportation services for its clients in Cornville	Cornville, Cottonwood, Sedona	3	1,000	3,900
Sedona Community Center	Provides various transportation services to seniors in the Sedona area	Sedona	1	300	5,300
Sedona Sunrise Center for Adults	A nonprofit day care center that provides transportation for seniors and disabled adults	Camp Verde, Cottonwood, Sedona, Verde Villages, Village of Oak Creek, Flagstaff, Phoenix, Prescott Area	N/A	N/A	N/A
Town of Jerome	Limited, group trip transportation program	Clarkdale, Cottonwood, Jerome	1	250	1,000
Verde Valley Caregivers Coalition	Uses volunteer vehicles to provide transportation services to low to middle income adults over the age of 65, many of whom are disabled	All Verde Valley communities, Flagstaff, Prescott Area		10,300	154,500
Verde Valley Senior Center	Provides transportation to seniors in the lower and middle Verde area	All Verde Valley communities (except Cornville, Page Springs, Sedona, Village of Oak Creek)	5	2,500	2,400
Veterans Transportation Services	Provides medical transportation for all veterans in Verde	N/A	1	6,100	15,000
Yavapai-Apache Nation – Human Services	Provides transportation services for tribal members, primarily for medical trips	Camp Verde, Clarkdale, Cottonwood, Flagstaff, Phoenix	3	1,200	52,100

Source: NACOG 2015 Human Services & Public Transit Coordinated Transportation Plan

Future Transit Conditions

Successful transit systems open economic opportunities for local residents and businesses, link neighboring destinations, and generally enhance the quality of life for residents and enhance economic vitality of rural communities. Transit services in the Verde Valley region have been fairly successful and are well liked by the residents and businesses in the region. Transit service within Verde Valley is currently provided by the Cottonwood Area Transit (CAT), Verde Lynx, and the Yavapai-Apache Transit System. Several stakeholders expressed the need for additional transit services in the region to support current and future demand.

Per the Transportation Research Board's (TRB) Transit Cooperative Research Program (TCRP) Report 161, the number of people needing passenger transportation is primarily based on the number of persons residing in households with incomes below the poverty level and persons residing in households with no vehicles. Data was extracted from the 2009-2013 American Community Survey (ACS) for each of the population groups. According to the 2009-2013ACS, there are currently 10,601 persons (17% of total population) residing in households with incomes below the poverty level and 2,113 persons (3.5% of total population) residing in households with no vehicles. Based on future population and housing unit projections presented in Chapter 3, these estimates are expected to increase resulting in the need for additional transit service. Table 4.11 summarizes the transit dependent population groups for current and future years. Comprehensive Transit Feasibility and Transit Implementation studies are needed to identify exact transit needs in the region.

Table 4.11: Persons Below Poverty Level and Persons with No Vehicles

Year	Persons Below Poverty Level	Persons in Households with No Vehicles
Year 2015	10,601	2,113
Year 2025	13,086	2,612
Year 2040	15,197	3052

TRANSPORTATION ISSUES SUMMARY

Based on an inventory and analysis of existing conditions, transportation system deficiencies and issues were identified. These issues and deficiencies form the basis for the next phase of the study which is the development of the long range transportation plan. Figures 4.23 and 4.24 display the current major transportation issues in the study area.

- Current and projected roadway congestion occurs along SR 89A (Cottonwood and Sedona), SR 179 (Verde Valley School Road to SR 89A), SR 260 (Cottonwood and Camp Verde), Cornville Road, Beaver Creek Road, within the Village of Oak Creek, and arterials in Cottonwood and Sedona.
- Numerous intersections within the study area experience congestion issues and are in need of operational and safety improvements.
- Regional corridors are generally in fair to poor pavement condition.
- Roadways generally do not have shoulders or have narrow shoulders. Shoulders need to be reconstructed to roadway design standards to allow for vehicles to safely pull over.
- Climbing lane on I-17 southbound (General Crook to MP 282) is needed.
- High vehicle speeds on SR 260 north of I-17, SR 89A west of Jerome, SR 89A from Cornville Road to Upper Red Rock Road, SR 179 south of the Village of Oak Creek, and on Cornville Road from SR 89A to Page Springs Road.
- Unpaved roadways may need to be paved to accommodate growth and mitigate existing congestion: Ogden Ranch Road, Beaver Creek Road, Verde Valley School Road, and Old Highway 279.
- Access Management is needed on: SR 89A (Mingus Avenue to SR 260), SR 89A (Cornville Road to MP 358), SR 89A (Dry Creek Road to Uptown Sedona), SR 260 (SR 89A to Fir Street), Main Street (SR 89A to Willard Street), and Finnie Flat Road.
- Alternative/emergency routes are needed: SR 260 to the Yavapai Apache Nation, Village of Oak Creek to Sedona, Uptown Sedona, Clarkdale to Cottonwood, Lake Montezuma, and Verde Lakes.
- Pull-outs on major corridors needed to allow school buses, transit buses, and tourists to safely pull-off the roadway.
- Fixed objects within roadway's clear zone need to be relocated to allow for unobstructed recovery areas for vehicles.
- Overhead electronic message signs on SR 89A, SR 260, and I-17 would be able to warn motorists of emergency situations, safety issues, and the area's roadway conditions.
- High crash rates on SR 89A (west of Jerome, Main Street to SR 260, Dry Creek Road through Uptown Sedona), SR 179 (Schnebly Hill Road to SR 89A), SR 260 (South of SR 89A), Main Street (Cottonwood), Fir Street, Mingus Avenue, 12th Street, Upper Red Rock Loop Road, Coffee Pot Drive, and Andante Drive.
- Highest number of intersection related crashes occurred at SR 89A/SR 179, SR 89A/SR 260, and Fir Street/SR 260 intersections.
- Continuous network of pedestrian and multi-use paths connecting the communities would enhance residents' quality of life and promote economic development.
- Additional transit service is needed: Cornville to Sedona and Camp Verde; circulator route within Sedona; Village of Oak Creek to Sedona; Lake Montezuma to Camp Verde, Cottonwood, and Sedona; and Verde Lakes to Camp Verde.
- Bus pull-outs are needed along SR 89A and SR 260 to reduce congestion and provide a safe location for passenger to board/alight.

Figure 4.23: Existing Roadway Issues and Concerns

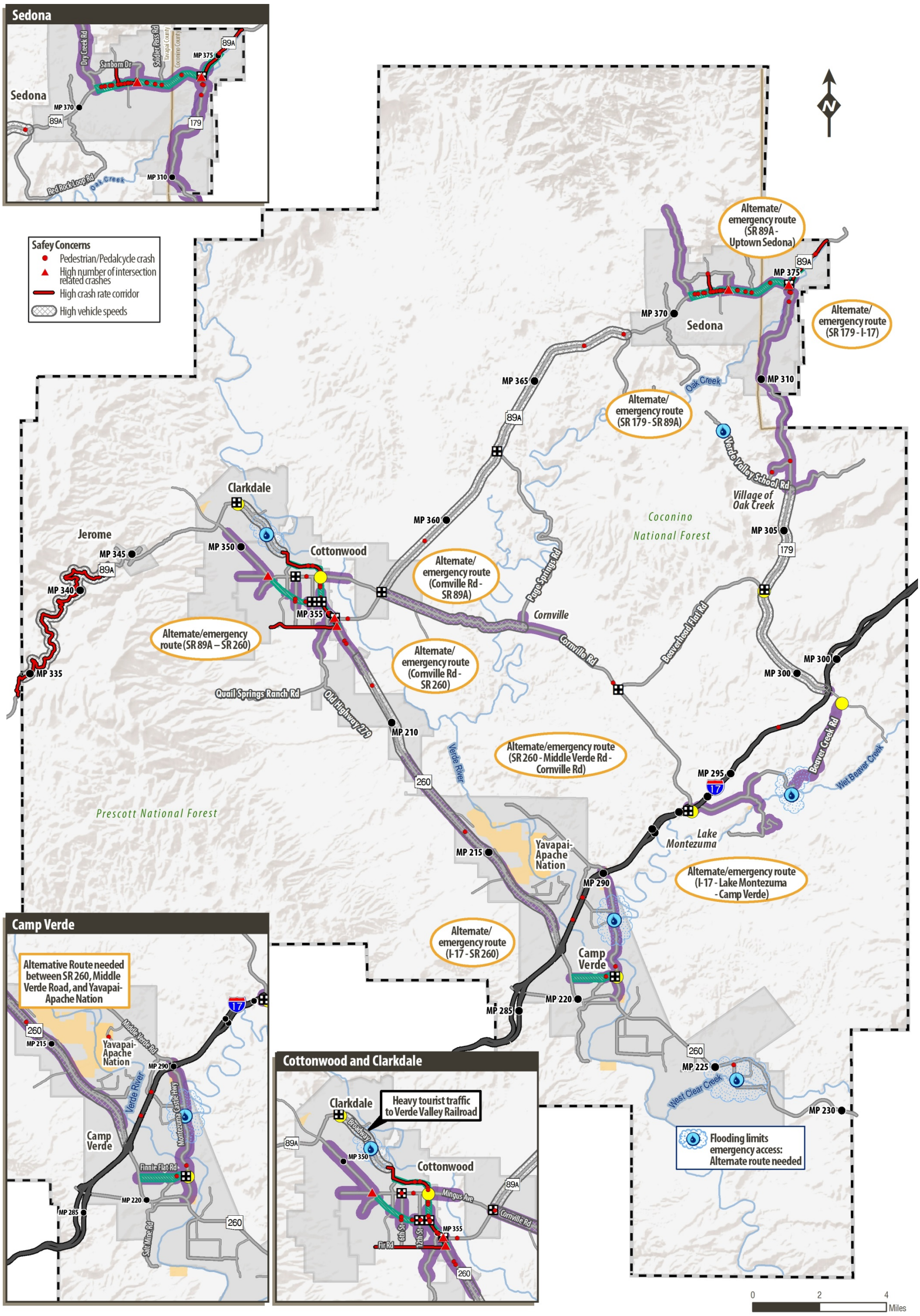
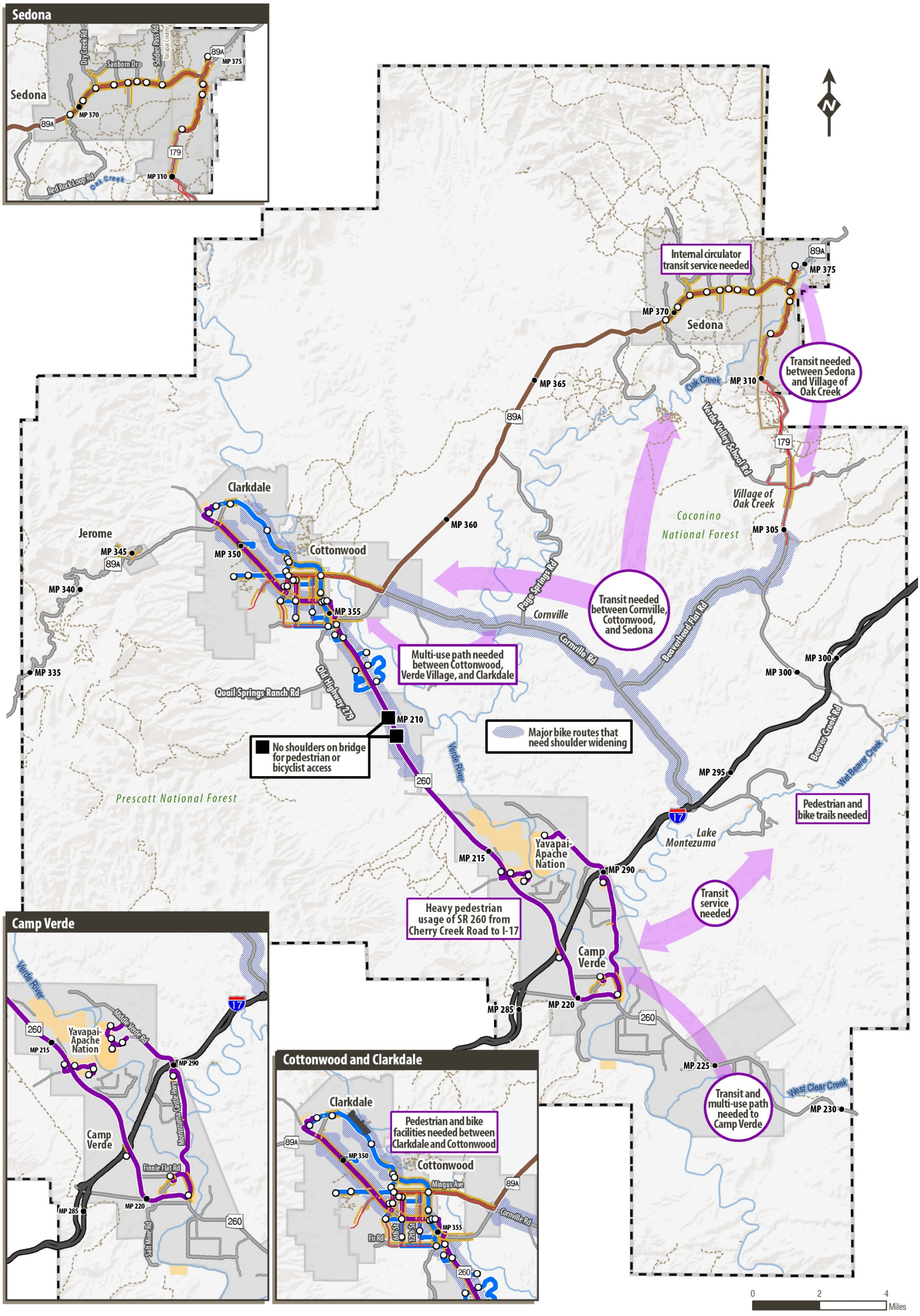


Figure 4.24: Existing Multimodal Transportation Issues, Concerns, and Needs



This chapter presents the initial improvement concepts and the criteria used for evaluating recommendations for the study area. Initial concepts were developed based on deficiencies and needs identified in the existing conditions analyses, future land use, socioeconomics, traffic conditions, and the goals and objectives established by the study team and the TAC at the onset of the study.

EVALUATION CRITERIA AND PROCESS

Transportation system deficiency analysis and input from the public, various stakeholders, and Technical Advisory Committee (TAC) resulted in a comprehensive list of potential transportation improvement options. These options were carefully evaluated utilizing a set of evaluation criteria developed during the LRTP process. Evaluation criteria are factors utilized to identify the potential benefits, impacts, and constraints of projects for prioritization. The criteria utilized by this study includes a mix of quantitative (measureable) and qualitative (subjective) measures.

Potential improvements identified were evaluated and prioritized to determine the projects/improvements that best serve the needs of the local and regional transportation system. Roadway improvement projects were differentiated by two different categories: capacity related improvement projects and non-capacity roadway improvement projects.

- *Non-capacity related improvement projects* - address safety concerns, intersection improvements, and the need to conduct additional planning, safety, and traffic studies.
- *Capacity related improvement projects* - include widening existing roadways and constructing new roadways. Capacity-related projects were evaluated using the Verde Valley travel demand model developed for this study.

Potential transportation improvement projects were then prioritized and grouped into three implementation phases. Table 5.1 summarizes the criteria used in evaluating potential transportation improvement options.

Table 5.1: Evaluation Criteria

Evaluation Criteria	Measure	Benefit Scale* (High ↔ Low)			
1. Project programmed, designed, or planned	Is the project consistent with planned improvements, comprehensive plans, general plans, and previous transportation plans?	Yes	-	No	N/A
2. Improves traffic operations	Does the project aid in reducing congestion and improving travel times?	Yes	-	No	N/A
3. Improves safety	Does the project contribute to reducing crashes, crash severity, reducing vehicle speeds, or improve emergency response time?	High	Med	Low	N/A
4. Improves regional or local connectivity and mobility	Does the project provide additional access or connections between activity centers?	High	Med	Low	N/A
5. Promotes community health, encourages development, and improves livability	Does the project have a positive impact on Title VI population groups? Does it enhance opportunities for development or tourism?	High	Med	Low	N/A
6. Minimizes impacts to natural and cultural environment	Does the project have potential adverse impacts to the natural or cultural landscape?	Low	Med	High	N/A
7. Ease of implementation	Does the project have reasonable capital, row-of-way, and on-going maintenance costs?	Yes	-	No	N/A
8. Local agency and public acceptance	Does the project have documented support from local governing agency or public support?	Yes	-	No	N/A

Based on the results of the evaluation, projects were prioritized into near-, mid-, and long-term implementation phases:

- **Near-term –** Near-term projects are typically projects needed to address the most critical needs and deficiencies and have a reasonable potential for obtaining funding. Near -term projects also include projects currently programmed in the State Transportation Improvement Plan (STIP).
- **Mid-term –** More complex projects that improve safety, expand mobility and access, or address future development needs.
- **Long-term –** High cost projects that require additional time to obtain funding or are not needed until build-out conditions.

The recommended implementation timeframes are based on fiscal years, and actual phasing may need to be adjusted based on funding availability, development activity, traffic patterns, and private participation. Recommended improvement project should be re-evaluated each year as part of the VVTPO's planning process or if travel patterns change significantly.

NON-CAPACITY RELATED IMPROVEMENT OPTIONS

In order to enhance mobility, safety, and access, the following safety and general roadway improvements were evaluated: bridge rehabilitation, shoulder widening, roadway pavement treatments, and safety improvements. The following section presents a summary of the different safety and non-capacity enhancements evaluated to identify the most effective improvements for the study area.

Roadway Surface Treatments

On-going, paved road maintenance and pavement reconstruction is critical to the overall safety of the area's transportation network. Maintaining a road's pavement condition can lessen maintenance costs on vehicles, improve overall safety, and provide motorists with a smoother, more comfortable ride. Pavement improvement projects include:

- **Pavement Rehabilitation:** Minor rehabilitation consists of non-structural enhancements to eliminate age-related, top-down surface cracking that develops in flexible pavements due to environmental exposure. Major rehabilitation consists of structural enhancements that both extend the service life of an existing pavement and/or improve its load-carrying capability. Surface treatments methods include microsurfacing, chip seal, slurry seal, and crack seal.
- **Roadway Paving:** Paving roads results in a number of benefits, including reduced vehicle maintenance, improved driving experience and safety, and reduced dust emissions.

Figure 5.1: Road Surface Treatment Projects

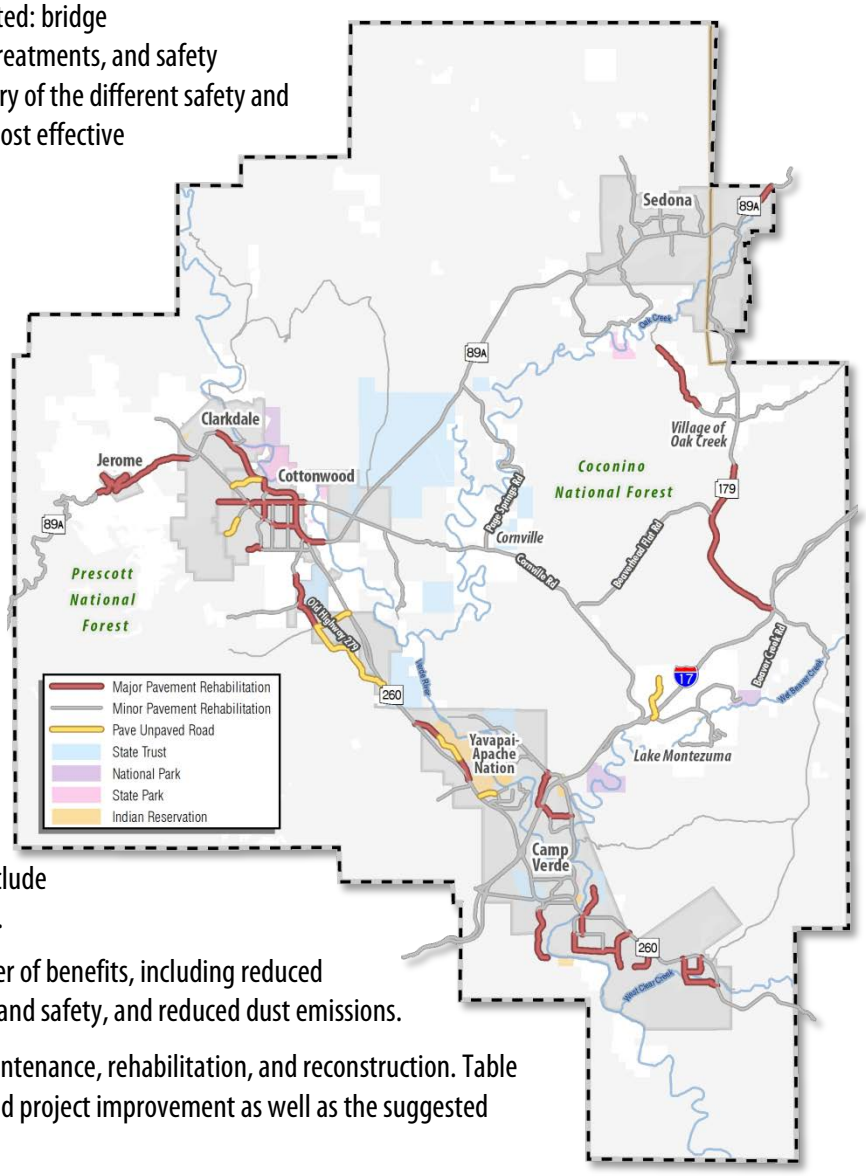


Figure 5.1 illustrates roadways in need of pavement maintenance, rehabilitation, and reconstruction. Table 5.2 provides a detailed evaluation for each recommended project improvement as well as the suggested implementation phase.

Table 5.2: Evaluation of Road Surface Treatment Projects

General Information			Evaluation Criteria								
Location	Project Description	Length (ft)	1	2	3	4	5	6	7	8	Phase
Arizona Department of Transportation											
SR 89A: MP 352.3 (6th Street) - MP 355.7	Major Rehabilitation	3.4	N	Y	H	L	M	L	Y	Y	Near
SR 179: MP 299.0 (I-17) - MP 304.7	Major Rehabilitation	5.7	N	Y	H	L	M	L	Y	Y	Near
SR 89A: MP 375.0 - MP 376.0	Major Rehabilitation	1.0	Y	Y	H	L	M	L	Y	Y	Near
SR 89A: MP 343.3 - MP 348.6	Major Rehabilitation	5.3	Y	Y	H	L	M	L	Y	Y	Near
Local Agency											
Verde Valley School Road: Red Rock Cove Drive - End of Pavement	Major Rehabilitation	2.5	Y	Y	M	L	M	L	Y	Y	Near
Old State Highway 279: Rio Mesa Trail - Ogden Ranch Road	Major Rehabilitation	1.9	Y	Y	M	L	M	L	Y	Y	Near
Old State Highway 279: SR 260 to Aultman Parkway	Major Rehabilitation	0.8	Y	Y	M	L	M	L	Y	Y	Near
Old State Highway 279: Aultman Parkway to Clover Ranch Road	Pave unpaved	1.0	Y	Y	M	H	M	M	Y	Y	Near
Old State Highway 279: SR 260 to Clover Ranch Road	Major Rehabilitation	0.8	Y	Y	M	L	M	L	Y	Y	Near
Old State Highway 279: Ogden Ranch Road - SR 260	Pave unpaved	3.1	Y	Y	M	H	M	M	Y	Y	Near
Broadway: 0.5mi west of Bill Gray Road - SR 89A	Major Rehabilitation	4.5	Y	Y	M	L	M	L	Y	Y	Near
Mingus Avenue: SR 89A - 18th Street	Major Rehabilitation	1.8	Y	Y	M	L	M	L	Y	Y	Near
Black Hills Drive: SR 89A - 0.9mi west of SR 89A	Major Rehabilitation	0.9	Y	Y	M	L	M	L	Y	Y	Near
Fir Street: Chuckwalla Street - Willard Street	Major Rehabilitation	0.4	Y	Y	M	L	M	L	Y	Y	Near
Willard Street: SR 89A - Mingus Avenue	Major Rehabilitation	0.5	Y	Y	M	L	M	L	Y	Y	Near
Groseta Ranch Road: SR 89A - Broadway	Pave unpaved	0.9	Y	Y	M	H	M	M	Y	Y	Near
Ogden Ranch Road: Old State Highway 279 - SR 260	Pave unpaved	1.1	Y	Y	M	H	M	M	Y	Y	Near
Aspen Way: SR 260 - Catclaw Drive	Major Rehabilitation	0.5	Y	Y	L	L	L	L	Y	Y	Mid
Arena del Loma: Montezuma Castle Highway - Middle Verde Road	Major Rehabilitation	2.3	Y	Y	L	L	L	L	Y	Y	Mid
Salt Mine Road: Oasis Road - 1.7mi south of Oasis Road	Major Rehabilitation	1.7	Y	Y	L	L	L	L	Y	Y	Mid
Verde Park Drive: SR 260 - Sierra Verde Road	Major Rehabilitation	1.3	Y	Y	L	L	L	L	Y	Y	Mid
Verde Lakes Drive: SR 260 - Clinton Lane	Major Rehabilitation	0.8	Y	Y	L	L	L	L	Y	Y	Mid
Murdock Road: Quarterhorse Lane - Stolen Boulevard	Major Rehabilitation	0.6	Y	Y	L	L	L	L	Y	Y	Mid
Quarterhorse Lane: Stolen Boulevard - Verde Park Drive	Major Rehabilitation	1.9	Y	Y	L	L	L	L	Y	Y	Mid
Clinton Lane: Verde Lakes Drive - Creek View Drive	Major Rehabilitation	0.4	Y	Y	L	L	L	L	Y	Y	Mid
McCracken Road: SR 260 - 0.1mi north of Lena Drive	Major Rehabilitation	1.0	Y	Y	L	L	L	L	Y	Y	Mid
Creek View Drive: Clinton Lane - Chino Drive	Major Rehabilitation	0.4	Y	Y	L	L	L	L	Y	Y	Mid
Sierra Verde Road: SR 260 - Sierra Lane	Major Rehabilitation	0.9	Y	Y	L	L	L	L	Y	Y	Mid
Catclaw Drive: Verde Lakes Drive - Aspen Way	Major Rehabilitation	0.5	Y	Y	L	L	L	L	Y	Y	Mid
Newton Lane: West of SR 260	Pave unpaved	0.5	Y	Y	L	M	L	M	Y	Y	Mid
Mingus Avenue: West of Happy Jack Road	Pave unpaved	0.6	Y	Y	L	M	L	M	Y	Y	Mid

Roadway Shoulders

Roadside shoulders are an important safety feature that provide safe locations for disabled vehicles, allow vehicles to pull over for emergency service vehicles, and provide bicyclists and pedestrians with a safe buffer zone from vehicular traffic. Shoulders also store water during storms, preventing water from spreading onto the travel lanes. Shoulders are typically earth, granular, or paved with asphalt or concrete.

According to the FHWA's *Engineering Measures for Improved Pedestrian Safety*, providing shoulders of at least 4 FT provides a 71% reduction in "walking along the roadway" crashes. ADOT Roadway Design Guidelines recommends an 8 FT shoulder on rural two-lane highways with a design hour volume (DHV) greater than 200 vehicles per hour (VPH) and 6 FT for DHV less than 200 VPH. According to AASHTO's *Guide for Development of Bicycle Facilities,* roadways with curb and gutter are recommended to have a usable 4 FT measureable area from the longitudinal joint to the center of the bike lane.

Figure 5.2 illustrates roadways identified for shoulder widening. Table 5.3 provides a detailed evaluation for each recommended project improvement as well as the suggested implementation phase.

Figure 5.2: Shoulder Widening Projects

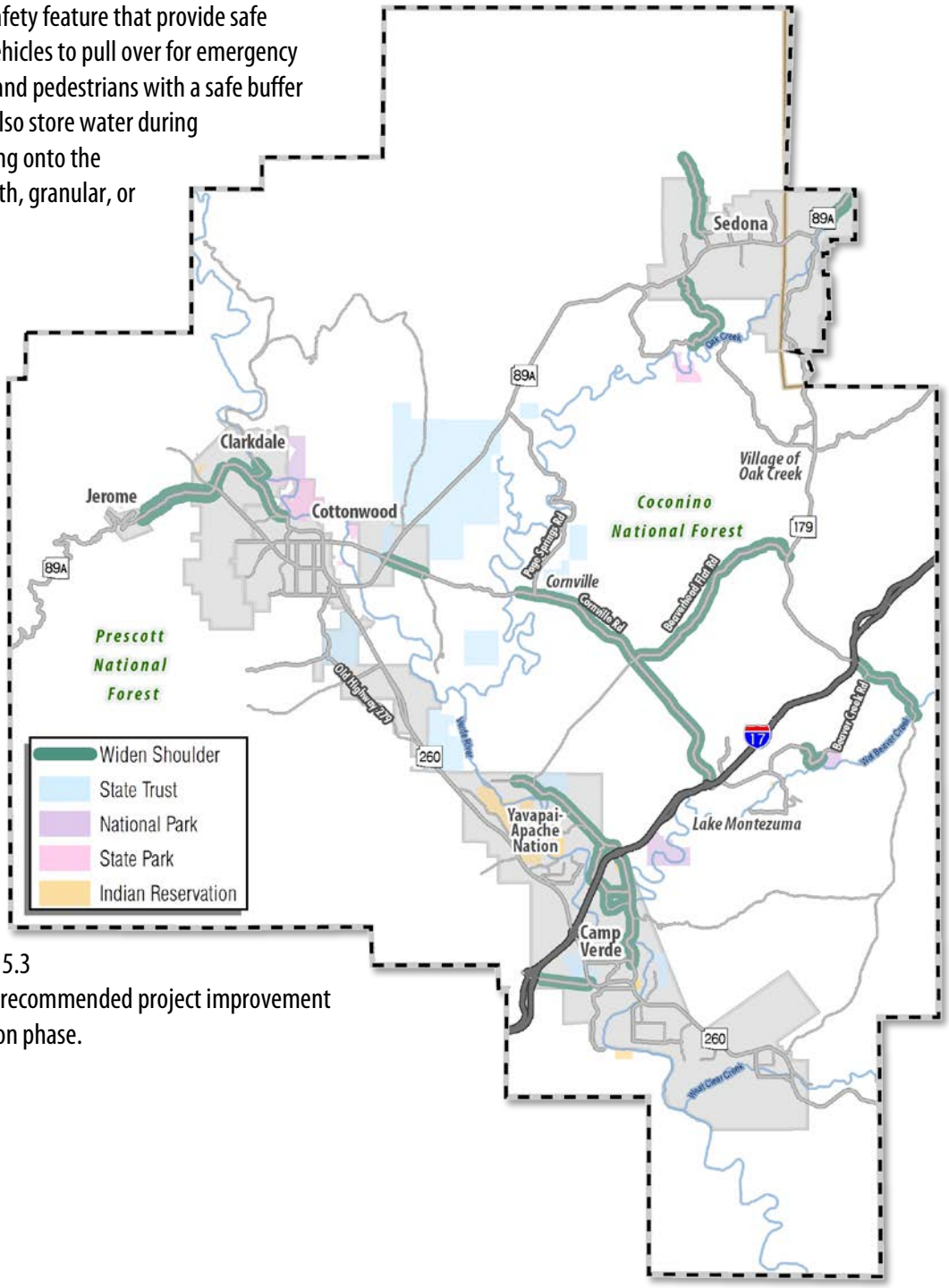


Table 5.3: Evaluation of Road Shoulder Improvement Projects

General Information			Evaluation Criteria								
Location	Project Description	Length (ft)	1	2	3	4	5	6	7	8	Phase
Arizona Department of Transportation											
SR 89A: MP 334.7 - MP 343.2	Widen shoulders from 1 FT to 5 FT	8.5	N	N/A	H	M	N/A	L	Y	N	Near
SR 89A: MP 346.6 - MP 349.0	Widen shoulders from ~2 FT to 5 FT	2.4	N	N/A	H	M	N/A	L	Y	Y	Near
SR 89A: MP 374.0 - MP 376.0	Widen shoulders from 1 FT to 5 FT	2.0	N	N/A	H	M	N/A	L	Y	Y	Near
Local Agency											
Cornville Road: SR 89A – Tissaw Road; Aspaas Road - I-17	Widen shoulders from 0 FT to 5 FT	9.5	Y	N/A	H	M	N/A	L	Y	Y	Near
Beaverhead Flat Road: Cornville Road - SR 179	Widen shoulders from 0 FT to 5 FT	6.1	Y	N/A	H	M	N/A	L	Y	Y	Near
Beaver Creek Road: Bentley Drive - Montezuma Well Road	Widen shoulders from 0 FT to 5 FT	0.9	N	N/A	L	L	N/A	L	Y	N	Near
National Forest 618: I-17 - Beaver Creek Road	Widen shoulders from 0 FT to 5 FT	0.5	N	N/A	L	L	N/A	L	Y	N	Near
Middle Verde Road: Wilson Road - I-17	Widen shoulders from 0 FT to 5 FT	3.5	N	N/A	L	L	N/A	L	Y	N	Near
Montezuma Castle Highway: Finnie Flat Road to I-17	Widen shoulders from 0 FT to 5 FT	3.2	Y	N/A	H	M	N/A	L	Y	Y	Near
Broadway: Main Street to Main Street	Widen shoulders from 0 FT to 5 FT	2.2	Y	N/A	H	M	N/A	L	Y	Y	Near
Red Rock Loop Road: Loy Lane to Sedona Red Rock High School	Widen shoulders from 0 FT to 5 FT	2.9	Y	N/A	M	M	N/A	L	Y	Y	Near
Cement Plant Road: SR 89A - 1.0mi west of SR 89A	Widen shoulders from 0 FT to 5 FT	0.9	Y	N/A	L	L	N/A	L	Y	Y	Mid
Tuzigoot Road: Broadway - Sycamore Canyon Road	Widen shoulders from 0 FT to 5 FT	0.4	Y	N/A	L	L	N/A	L	Y	Y	Mid
Sycamore Canyon Road: Tuzigoot Road - Pecks Lake Road	Widen shoulders from 0 FT to 5 FT	0.3	Y	N/A	L	L	N/A	L	Y	Y	Mid
Dry Creek Road: Thunder Mountain Road - Long Canyon Road	Widen shoulders from 0 FT to 5 FT	2.3	Y	N/A	L	L	N/A	L	Y	Y	Mid
Arena del Loma: Middle Verde Road - Montezuma Castle Highway	Widen shoulders from 0 FT to 5 FT	2.3	Y	N/A	L	L	N/A	L	Y	Y	Mid
Boot Hill Drive: Arena del Loma - Apache Trail	Widen shoulders from 0 FT to 5 FT	0.5	Y	N/A	L	L	N/A	L	Y	Y	Mid
Apache Trail: Boot Hill Drive - Montezuma Castle Highway	Widen shoulders from 0 FT to 5 FT	0.7	Y	N/A	L	L	N/A	L	Y	Y	Mid
General Crook Trail: 0.2mi east of I-17 - SR 260	Widen shoulders from 0 FT to 5 FT	1.4	Y	N/A	L	L	N/A	L	Y	Y	Mid

Bridge Improvements

Proposed bridge improvement projects were developed based on input received by stakeholders, review of existing conditions, programmed improvements, and sufficiency ratings obtained from ADOT's bridge inventory. Bridge rehabilitation involves major work required to restore the structural integrity of a bridge and to correct safety defects; to be eligible for rehabilitation, a bridge must have a Sufficiency Rating of 80 or less. To be eligible for replacement a bridge must have a Sufficiency Rating less than 50. Within the study area a total of 101 bridges (including culverts) were identified:

- One bridge is eligible for replacement – Cornville Road/I-17 highway overpass bridge has a sufficiency rating of 42.8
- 33 bridges and culverts are eligible for rehabilitation
- 67 bridges and culverts are in good condition
- To access the Verde Canyon Railroad and industrial businesses located on Broadway (north of Main Street in Clarkdale) motorists and heavy trucks must use a one-lane bridge.

Figure 5.3: Bridge Improvement Projects

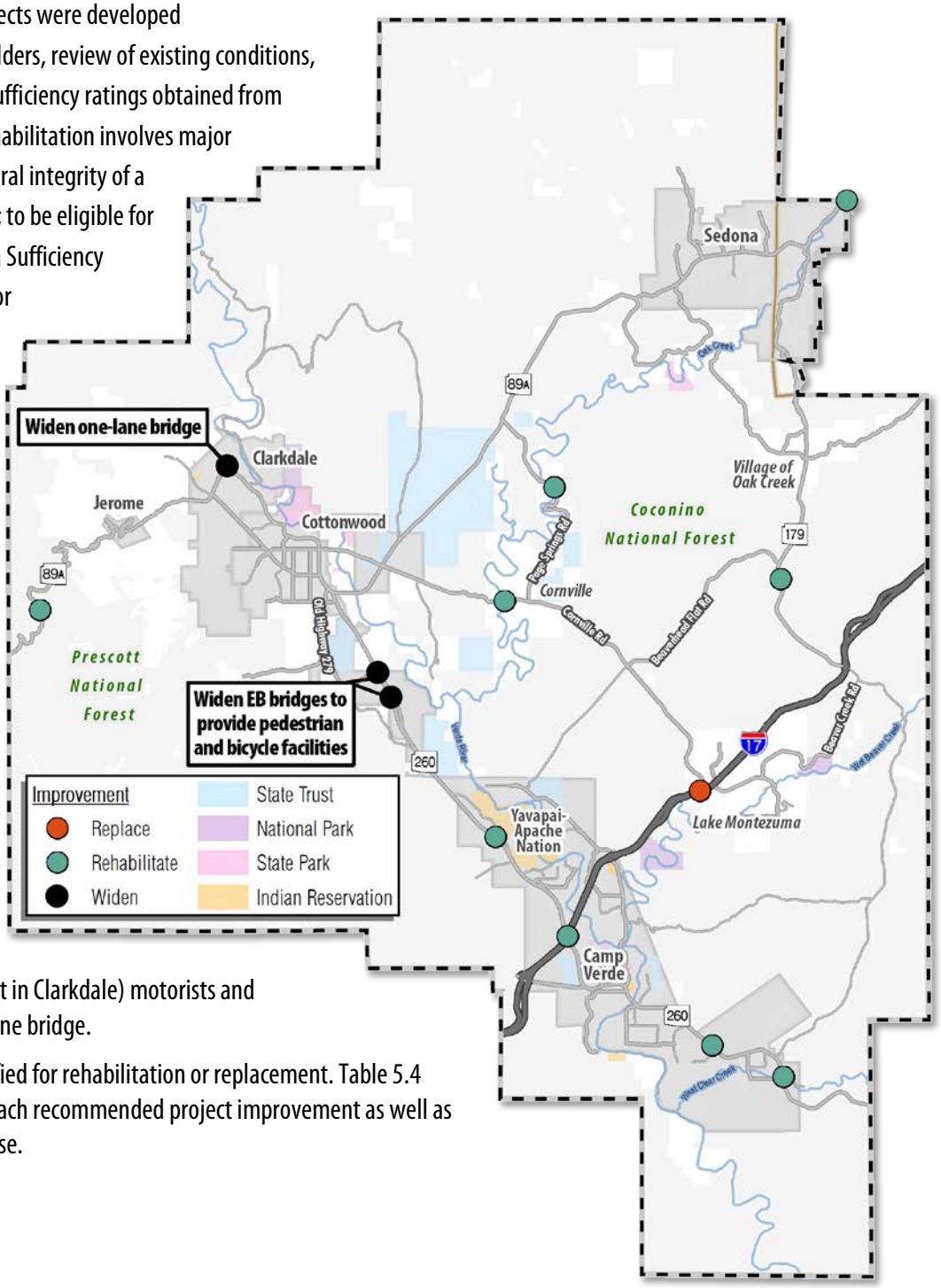


Figure 5.3 illustrates bridges identified for rehabilitation or replacement. Table 5.4 provides a detailed evaluation for each recommended project improvement as well as the suggested implementation phase.

Table 5.4: Evaluation of Bridge Improvement Projects

General Information			Evaluation Criteria								
Location	Project Description	Length (ft)	1	2	3	4	5	6	7	8	Phase
Arizona Department of Transportation											
I-17 (MP 293.26) - Bridge #652 (Cornville Road)	Replace (Project already in progress)	46.0	Y	N/A	M	L	L	L	Y	Y	Near
SR 179 (MP 302.5) - Bridge #736 (Dry Beaver Creek)	Rehabilitate	60.0	N	N/A	M	L	L	L	Y	Y	Near
SR 89A (MP 375.66) - Bridge #232 (Midgely/Wilson Canyon)	Rehabilitate	6.0	N	N/A	M	L	L	L	Y	Y	Near
SR 260 (MP 215.05) - Bridge #966 (Cherry Creek)	Rehabilitate	34.0	N	N/A	M	L	L	L	Y	Y	Near
SR 89A (MP 339.16) - Bridge #133 (Wash)	Rehabilitate	73.0	N	N/A	M	L	L	L	Y	Y	Mid
SR 260 (MP 287.27) - Bridge #2575 (I-17)	Rehabilitate	59.0	N	N/A	M	L	L	L	Y	Y	Mid
SR 260 (MP 224.43) - Bridge #2300 (Wickiup Wash)	Rehabilitate	32.0	N	N/A	M	L	L	L	Y	Y	Mid
SR 260 (MP 227.05) - Bridge #2301 (West Clear Creek)	Rehabilitate	41.0	N	N/A	M	L	L	L	Y	Y	Mid
SR 260 (MP 209.88) - Bridge #758 (Black Canyon Wash)	Install pedestrian facilities	110.0	N	N/A	M	M	M	M	N	Y	Mid
SR 260 (MP 210.55) - Bridge #781 (Wilbur Canyon)	Install pedestrian facilities	53.0	N	N/A	M	M	M	M	N	Y	Mid
Local Agency											
Cornville Road - Bridge #9100 (Oak Creek)	Rehabilitate	30.0	Y	N/A	M	L	L	L	Y	Y	Near
Page Springs Road - Bridge #9102 (Oak Creek)	Rehabilitate	38.0	Y	N/A	M	L	L	L	Y	Y	Mid
Broadway - Bridge #8488 (Bitter Creek)	Widen One-Lane Bridge	6.0	Y	N/A	M	L	L	M	N	Y	Mid

Safety Improvements

Based on stakeholder and public input, as well as a comprehensive technical analysis, some study area roadway's currently have safety issues that require improvement. Key issues identified in Working Paper 1 include: high vehicle speeds, access management issues, intersection and driveway turning movement conflicts, on-street parking, and the need for emergency/alternative route warning devices. Safety improvement projects evaluated within the study area included:

Conduct an access management assessment to identify strategies and techniques to improve safety and alleviate congestion	**SR 89A: MP 351.3 (Mingus Avenue) - MP 355.2 (SR 260)** Leading crash cause: 36% rear-end; 23% angle (front to side); 35% driveway related;16% crashes involved failure to yield to right-of-way Potential improvements: install raised medians and turn bays; driveway consolidation; removing roadside vegetation
	SR 89A: MP 368.3 (Red Rock Loop Road) - MP 376.0 Leading crash cause: 47% rear-end; 7 pedalcyclist involved crashes Potential improvements: install raised medians and turn bays; driveway consolidation; restricting on-street parking
Conduct a Roadway Safety Assessment (RSA) to determine elements that pose a safety concern on the existing roadway and to identify mitigation measures to improve safety	**SR 89A: MP 334.7 - MP 349.0** Leading crash cause: 30% overturn/rollover; 33% roadside object Potential improvements: Remove obstructions from clear zone (down-turned guardrails, trees, poles, etc.); install speed warning signs; widen shoulders where feasible
	SR 89A: MP 357.1 (Cornville Road) - MP 368.3 (Red Rock Loop Road) Leading crash cause: 27% animal related; 24% roadside object; two pedalcyclist and one pedestrian Potential improvements: Repair or install roadside fencing; install speed warning signs; reduce speed limits; remove obstructions from clear zone
	SR 179: MP 299.0 (I-17) - MP 306.2 (Verde Valley School Road) Leading crash cause: 21% animal related; 28%rear-end Potential improvements: Upgrade roadside fencing and install wildlife crossings; install speed warning signs; reduce speed limits; remove obstructions from clear zone
	Cornville Road: SR 89A - Page Springs Road Leading crash cause: 21% rear-end; 51% crash with crash with roadside object Potential improvements: Install raised medians and turn bays; remove obstructions from clear zone (down-turned guardrails, trees, poles, etc.); install speed warning signs
	I-17/Cornville Road traffic interchange Existing Conditions: Interchange configuration is confusing for drivers unfamiliar with the area; Several rear-end crashes occurred at the interchange Potential improvements: Improve signage in near-term, redesign interchange in long-term

Conduct a study to evaluate performance and operational evaluation of intersection	**SR 89A/SR 260 intersection** Leading crash cause: 64% rear-end Potential improvements: Identify alternate routes to reroute traffic to reduce intersection congestion; evaluate traffic control options (traffic signal or roundabout)
	SR 89A/SR 179 intersection Leading crash cause: 50% sideswipe Potential improvements: Identify alternate routes to reroute traffic to reduce intersection congestion; implement travel demand management strategies; assess the need for channelized right turns at the roundabouts; identify methods to slow down approaching traffic
	SR 260/Fir Street intersection Leading crash cause: 40% rear-end; 25% left-turn; two pedestrian and one pedalcyclist Potential improvements: Reduce speed limits on SR 260; modify signal phasing to safely accommodate pedestrians and left turn movements
	SR 89A/Cornville Road intersection Leading crash cause: 62% rear-end Potential improvements: Reduce speed limits on SR 89A and Cornville Road; install signage on Cornville Rd to warn motorists of approaching intersection
	SR 89A/Page Springs Road intersection Leading crash cause: 27% angle (front to side); 27% crash with roadside object. Higher speeds on SR 89A and current intersection design could be contributing causes. Potential improvements: Change traffic control type (signal); redesign and reconstruct intersection
	SR 179/Beaverhead Flat Road intersection Leading crash cause: 50% left-turn Potential improvements: Conduct traffic signal warrant study; remove roadside vegetation to increase sight distance

Complete Street Corridors

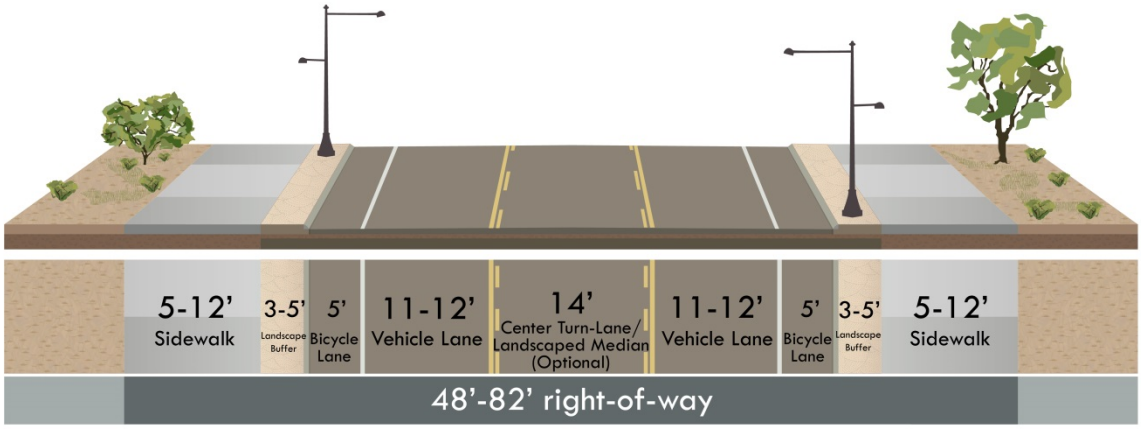
Roadway cross-sections provide the framework for designing and improving community roadways. A road's cross-section is based on several factors, including:

- Existing and future traffic volumes,
- Type of traffic that utilizes the facility,
- Function of the facility,
- Level of pedestrian, bicycle, and transit activity,
- Surrounding land use,
- Right-of-way (ROW) availability, and
- Proposed development surrounding the corridor.

To accommodate multiple transportation modes, many communities are utilizing "Complete Streets" initiatives to develop cross-sections to enhance the safety along roadways. According to the National Complete Streets Coalition, typical elements that make up a complete street include sidewalks, bicycle lanes, shared-use paths, and safe pedestrian crossings. Based on input from the TAC, stakeholders, and the public; cross-section concepts were developed for key major roadways that require reconstruction to incorporate complete street elements. Table 5.5 summarizes potential cross-sections within the study area.

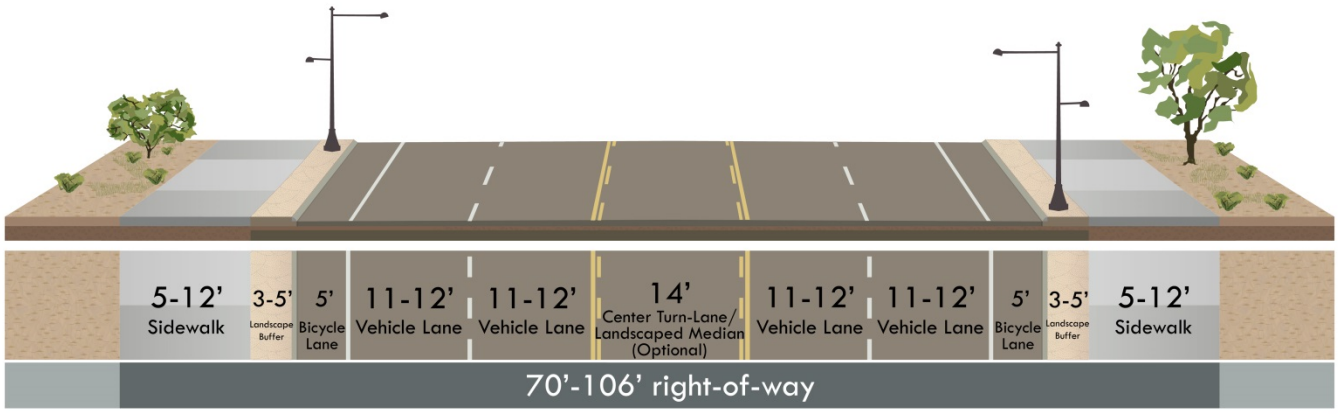
Table 5.5: Recommended Complete Street Cross-Sections

Complete Street Cross-Section #1 – Two Lane Roadway



Roadway Context:	Provides local and regional access; low to medium traffic volumes
Number of Lanes & Median:	11-12 FT travel lane in each direction; optional 14 FT center turn lane/median
Right-of-Way Width:	48 - 82 FT
Street Elements:	3-5 FT landscape buffer; street lighting; sidewalk lighting
Pedestrian/Bike Facilities:	5-12 FT sidewalk; 5 FT bike lane
Applicable Roadways:	Broadway Rd; Groseta Ranch Rd; Middle Verde Rd Extension; Mingus Ave; Proposed West Loop Rd

Complete Street Cross-Section #2 – Four Lane Roadway



Roadway Context:	Provides local and regional access; medium to high traffic volumes
Number of Lanes & Median:	Two 11-12 FT travel lanes in each direction; optional 14 FT center turn lane /median
Right-of-Way Width:	70 - 106 FT
Street Elements:	3-5 FT landscape buffer; street lighting; sidewalk lighting
Pedestrian/Bike Facilities:	5-12 FT sidewalk; 5 FT bike lane
Applicable Roadways:	Finnie Flat Rd; Main Street (Cottonwood), SR 89A (Sedona)

CAPACITY RELATED IMPROVEMENT OPTIONS

Capacity related improvement projects, such as widening existing roadways and constructing new roadways, were evaluated to identity potential projects to alleviate existing or projected traffic congestion. Utilizing a base network of committed roadway improvement projects, potential improvement projects were grouped into three alternatives:

- Alternative 1: potential improvements to address the most critical, near-term transportation needs of the region
- Alternative 2: potential improvements to address mid-term transportation needs of the region
- Alternative 3: potential improvements to address long-term transportation needs of the region

Alternative 1

Figure 5.4 provides a graphical illustration of improvement projects included in Alternative 1.

Construct New Road	**West Loop Phase 1: Black Hills Drive to Fir Street** – Extend Black Hills Drive to West Loop Road – Construct West Loop Rd as a two lane minor collector roadway (Complete Streets CS # 1)
	Fir Street Extension: SR 260 to SR 89A – Extend Fir Street as a four-lane minor collector
	Tissaw Road: Cornville Road to SR 89A – Construct four-lane minor collector roadway
Widen Roadway	**SR 260: Thousand Trails Road to I-17** – Widen to four lanes – *This project is currently under final design and scheduled for construction in 2016 (Tracs No H869901C)*
	Finnie Flat Road: SR 260 to Main Street – Widen to four lane arterial roadway (Complete Streets CS # 2)
Pave Unpaved Road	**Groseta Ranch Road: SR 89A to North Main Street** – Pave unpaved roadway to a two lane minor collector (Complete Streets CS # 1)
	Beaver Creek Road: Montezuma Well Road to Ranger Road – Apply innovative unpaved road treatment to create a more stabilized and easier to ride surface condition
Upgrade Functional Classification	**Mingus Ave: North Main St to Willard St** *(upgrade to arterial - Complete Streets CS # 1)*
	Main St: SR 89A to Mingus Ave *(upgrade to arterial - Complete Streets CS # 1)*
	Brewer Rd - Ranger Rd connection *(upgrade to minor collector roadway)*
	Beaver Creek Road: Montezuma Avenue to Montezuma Well Road *(upgrade to major collector roadway)*

Alternative 1 – Projected Traffic Conditions

Figure 5.5 displays the projected daily traffic volumes and the congestion levels if Alternative 1 recommended projects are constructed in the mid-term timeframe. Roadways that are reaching capacity levels and may experience congestion include:

- **At or Above Capacity (LOS E & LOS F)**
  - SR 179 (Chapel Road to Ranger Road)
  - Beaver Creek Road (I-17 to Top O' The Morning Drive)
  - Beaver Creek Road (Montezuma Well Road to I-17)
  - Cornville Road (East of SR 89A)

- **Near Capacity (LOS C & LOS D)**
  - I-17 (Middle Verde Road to Cornville Road)
  - SR 89A: Candy Lane to Tissaw Road Extension, Page Springs Road to SR 179, Uptown Sedona
  - SR 179 (I-17 to Chapel Road)
  - SR 260: SR 89A to Del Rio Drive ; Doug's Park Road to I-17
  - Beaver Creek Road (Top O' The Morning Drive to Montezuma Well Road)
  - Bell Rock Blvd (West of SR 179)
  - Black Hills Drive
  - Cliffside Trail
  - Coffee Pot Road
  - Cornville Road (Beaverhead Flat Road to east of SR 89A)
  - Dry Creek Road
  - Fir Street
  - Jacks Canyon Road (East of SR 179)
  - Main Street (Camp Verde)
  - Mingus Avenue: west of SR 89A, Twelfth Street to Cornville Road
  - Montezuma Castle Highway
  - Montezuma Avenue
  - Old State Highway 279 (South of SR 89A)
  - Page Springs Road (Cornville Road to 1mi south of SR 89A/Page Springs Road intersection)
  - Red Rock Loop Road
  - Sixth Street (Mingus Avenue to Cottonwood Drive)
  - Twelfth Street (south of 89A)
  - Verde Valley School Road (West of SR 179)

Figure 5.4: Alternative 1

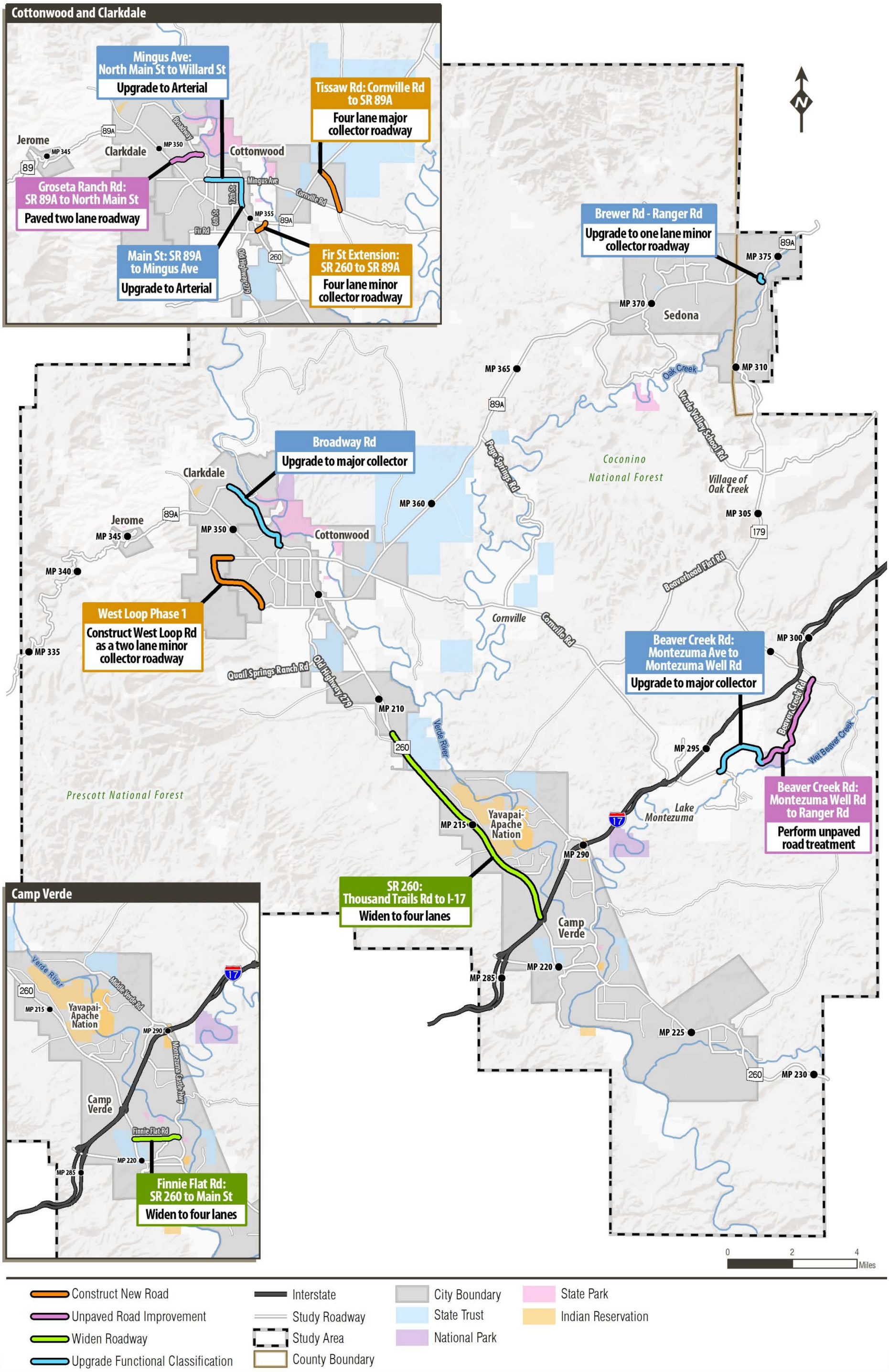
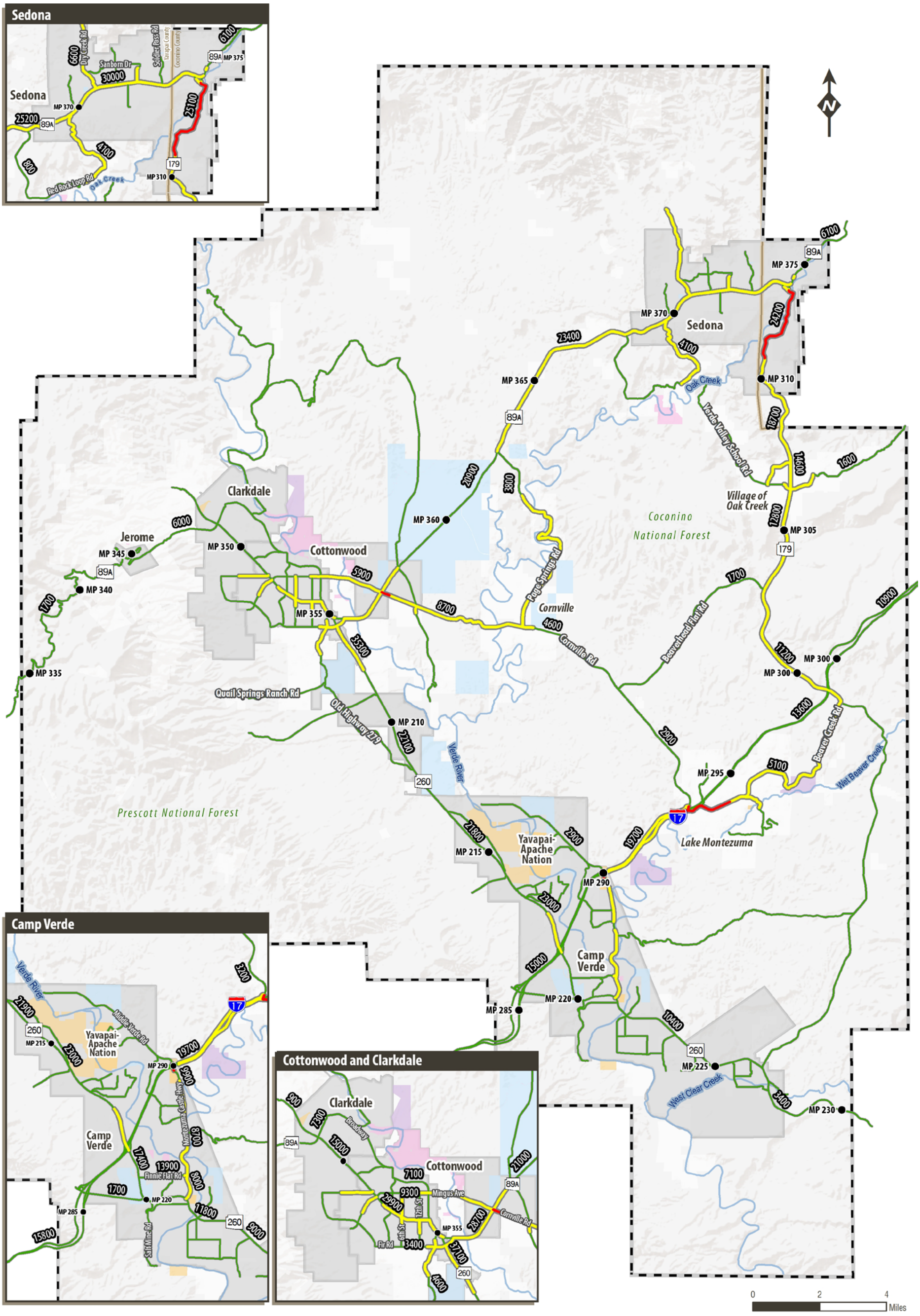


Figure 5.5: Alternative 1 Level of Congestion



Alternative 2

In addition to the improvements included in Alternative 1, Alternative 2 includes the following capacity improvements.

Construct New Road	**West Loop Phase 2: Ogden Ranch Road to Fir Street** – Construct West Loop Rd as a two lane minor collector roadway (Complete Streets CS # 1)
	Middle Verde Road Extension: Middle Verde Road to SR 260 – Extend Middle Verde Rd as a two lane minor collector (Complete Streets CS # 1) – Construct bridge over Verde River
	New Roadway: Beaver Creek Road to Montezuma Avenue – Construct new two lane minor collector (Complete Streets CS # 1) across Beaver Creek (in the vicinity of Brockett Ranch Road) – Construct bridge over Beaver Creek
Widen Roadway	**Beaver Creek Road: I-17 to Montezuma Avenue** – Widen to four lane arterial roadway (Complete Streets CS # 2)
	Cornville Road: SR 89A to Tissaw Road Widen to four lane arterial roadway (Complete Streets CS # 2) between SR 89A and Tissaw Road
	Montezuma Castle Highway: I-17 to Main Street – Widen to include a center turn lane
Pave Unpaved Road	**Beaver Creek Road: Montezuma Well Road to Ranger Road** – Pave unpaved roadway to a two lane minor collector (Complete Streets CS # 1)

Figure 5.6 provides a graphical illustration of improvement projects included in Alternative 2.

Alternative 2 – Projected Traffic Conditions

Figure 5.7 displays the projected daily traffic volumes and the congestion levels if Alternative 2 recommended projects are constructed by in the mid-term timeframe. Roadways that are reaching capacity levels and may experience congestion include:

- **At or Above Capacity (LOS E & LOS F)**
  - SR 179 (Chapel Road to Ranger Road)
- **Near Capacity (LOS C & LOS D)**
  - I-17 (Middle Verde Road to Cornville Road)
  - SR 89A: Sixth Street to Cornville Road, Tissaw Road Extension to SR 179, Uptown Sedona
  - SR 179: Beaverhead Flat Road to Chapel Road, South of SR 89A
  - SR 260: SR 89A to Del Rio Drive ; Doug's Park Road to I-17
  - Beaver Creek Road (Montezuma Avenue to Jo Ann Drive)
  - Bell Rock Blvd (West of SR 179)
  - Black Hills Drive
  - Cliffs Parkway
  - Cliffside Trail
  - Coffee Pot Road
  - Cornville Road (Beaverhead Flat Road to east of Page Springs Road)
  - Dry Creek Road
  - Jacks Canyon Road (East of SR 179)
  - Main Street (Camp Verde)
  - Mingus Avenue: west of SR 89A, Twelfth Street to Cornville Road
  - Montezuma Castle Highway
  - Montezuma Avenue
  - Old State Highway 279 (South of SR 89A)
  - Page Springs Road (north of Cornville Road)
  - Red Rock Loop Road
  - Sixth Street (Mingus Avenue to Cottonwood Drive)
  - Twelfth Street (south of 89A)
  - Verde Valley School Road (West of SR 179)

Figure 5.6: Alternative 2

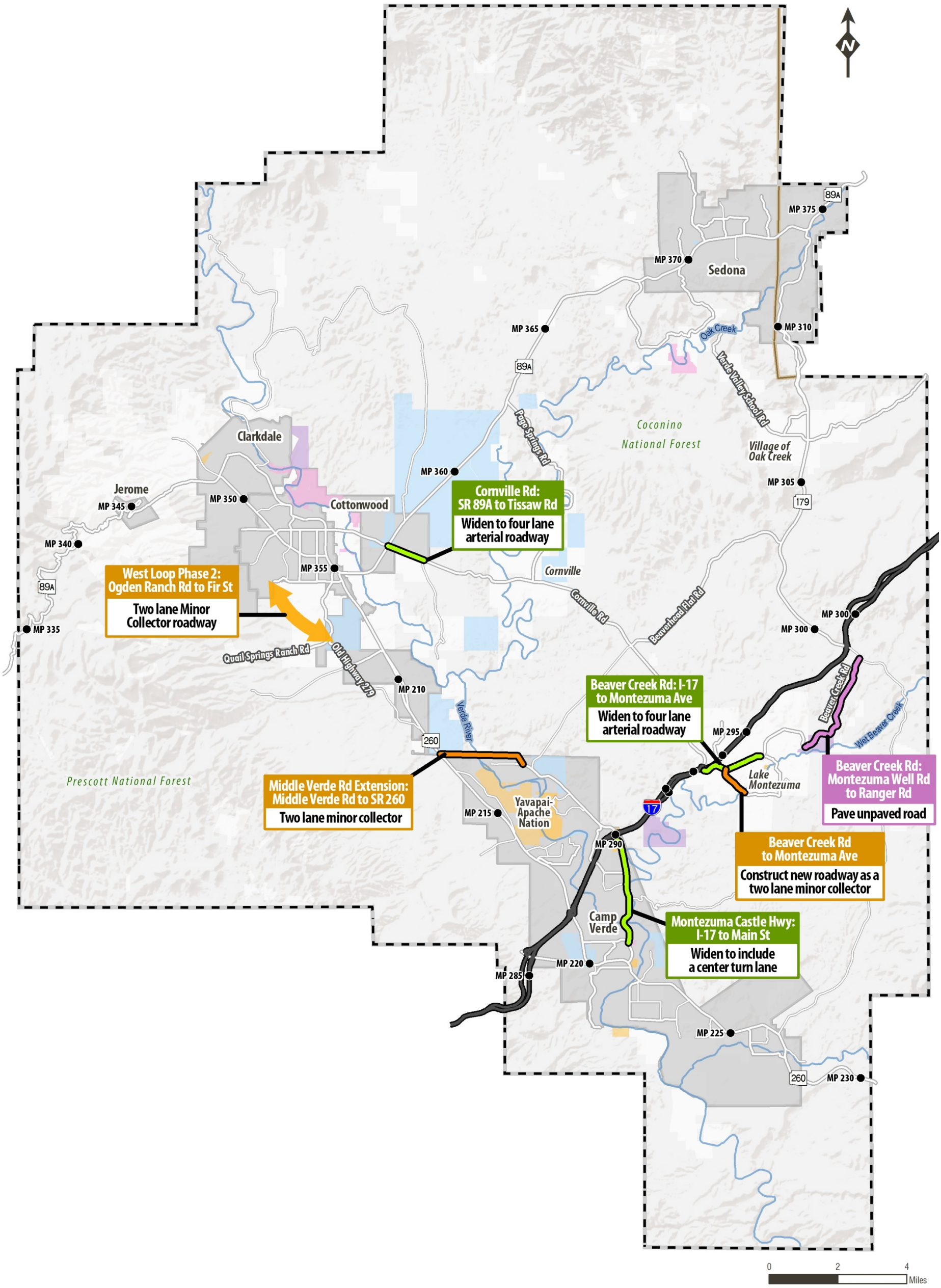
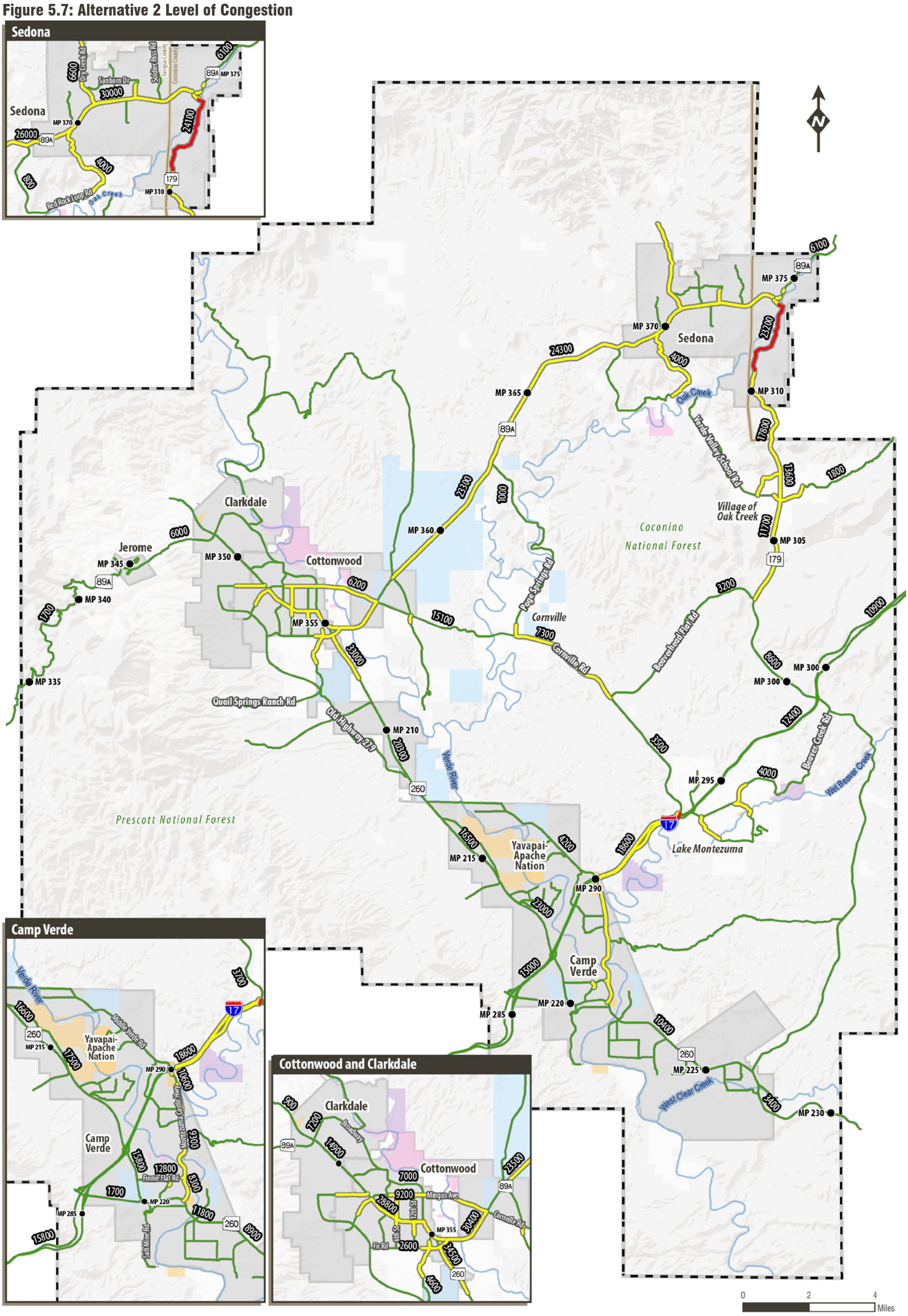


Figure 5.7: Alternative 2 Level of Congestion



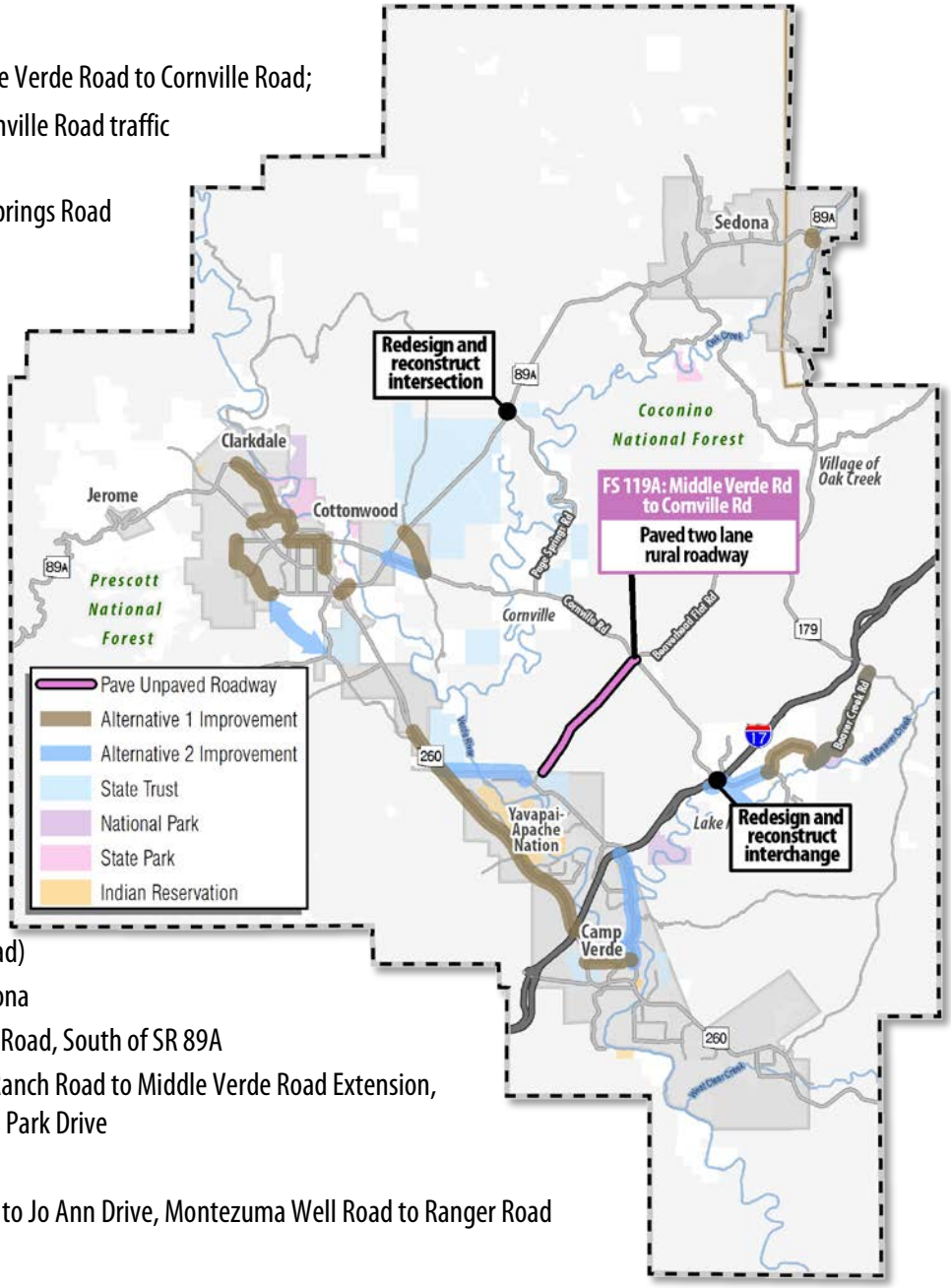
Alternative 3

In addition to the improvements included in Alternative 1 and 2, Alternative 3 consists of:

- Pave Forest Service Road 119A from Middle Verde Road to Cornville Road;
- Redesign and construction of the I-17/Cornville Road traffic interchange; and
- Redesign and construction SR 89A/Page Springs Road intersection.

Figure 5.8 provides a graphical illustration of improvement projects included in Alternative 3.

Figure 5.8: Alternative 3



Alternative 3 – Projected Traffic Conditions

Figure 5.9 displays the projected daily traffic volumes and the congestion levels if Alternative 3 recommended projects are constructed in the long-term timeframe. Roadways that are reaching capacity levels and may experience congestion include:

- **At or Above Capacity (LOS E & LOS F)**
  - SR 179 (Bell Rock Road to Ranger Road)
- **Near Capacity (LOS C & LOS D)**
  - I-17 (Middle Verde Road to Cornville Road)
  - SR 89A: Black Hills Drive to Uptown Sedona
  - SR 179: Beaverhead Flat Road to Chapel Road, South of SR 89A
  - SR 260: SR 89A to Del Rio Drive, Ogden Ranch Road to Middle Verde Road Extension, Doug's Park Road to I-17, north of Verde Park Drive
  - Andante Drive
  - Beaver Creek Road: Montezuma Avenue to Jo Ann Drive, Montezuma Well Road to Ranger Road
  - Bell Rock Blvd (West of SR 179)
  - Black Hills Drive
  - Cliffs Parkway
  - Cliffside Trail
  - Coffee Pot Road
  - Cornville Road: East of SR 89A, Beaverhead Flat Road to east of Page Springs Road
  - Dry Creek Road
  - Fir Street
  - Main Street (Camp Verde)
  - Middle Verde Road Extension
  - Mingus Avenue: west of SR 89A, Twelfth Street to Cornville Road

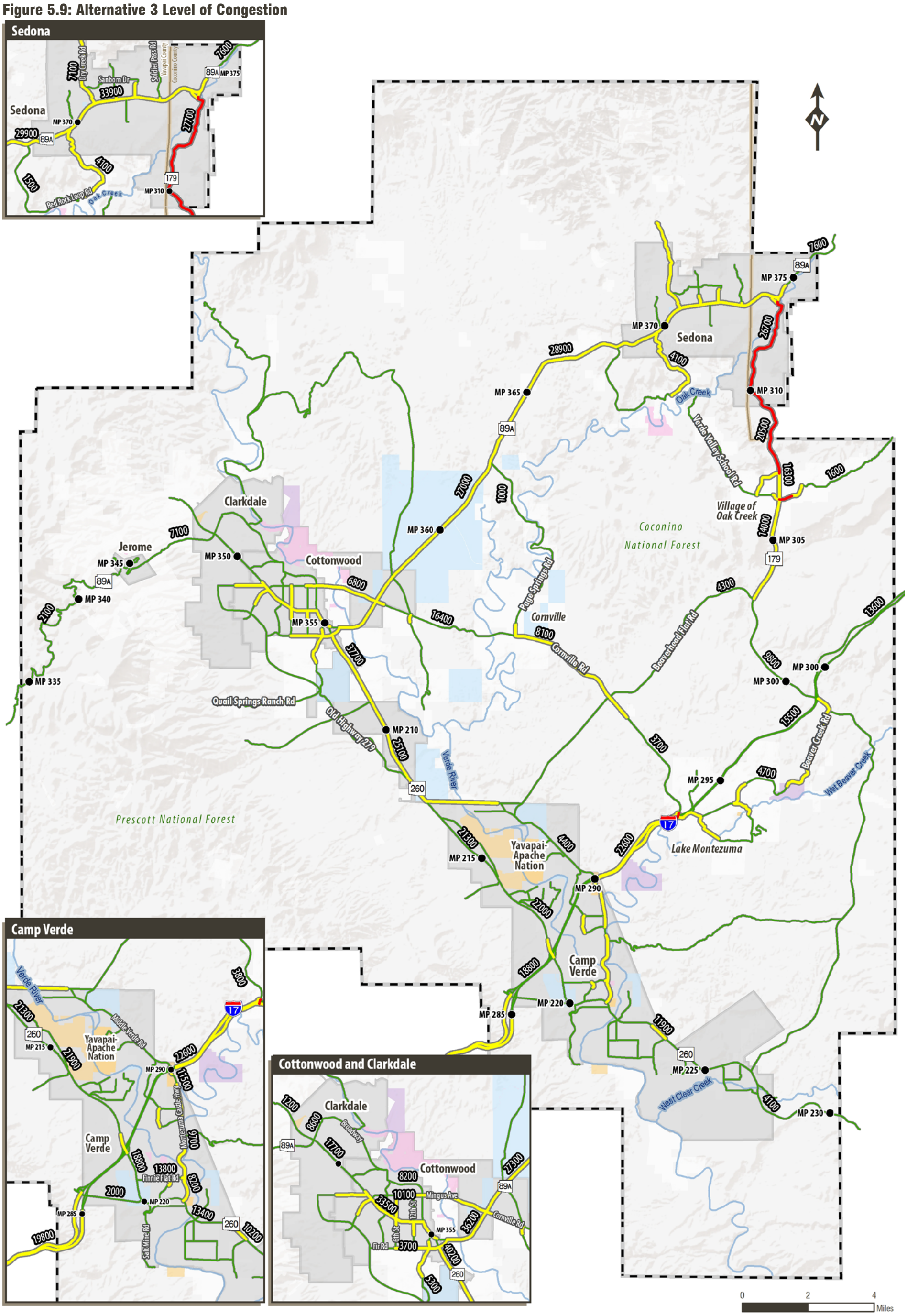
- Montezuma Castle Highway
- Montezuma Avenue
- Old State Highway 279 (South of SR 89A)
- Page Springs Road (north of Cornville Road)
- Ranger Road
- Red Rock Loop Road
- Sixth Street (Mingus Avenue to Cottonwood Drive)
- Twelfth Street (south of 89A)
- Verde Valley School Road (West of SR 179)

Additional Improvement Scenarios Evaluated

Improvements evaluated in Alternatives 1 – 3 did not relieve congestion on SR 179 (between SR 89A and Village of Oak Creek) and SR 89A (between SR 179 and east limits of the study boundary). Two separate improvement scenarios were evaluated and are discussed below.

Widen SR 179 to Four Lanes from the Village of Oak Creek to SR 89A	Based on results of the travel demand model, widening SR 179 alleviates congestion issues along the corridor (reduces the LOS from F to C); however, at the SR 179/SR 89A intersection delays will be experienced if the intersection is not redesigned to accommodate the approaching flow of traffic. During the 2006-2010 reconstruction of SR 179, Sedona City Council conducted extensive public outreach that demonstrated the effects of widening the corridor to four lanes to the public. Although the two lane facility showed long queuing and delays, 60% of the public voted for keeping SR 179 as a two lane roadway. Due to the lack of public and local agency support, widening SR 179 was removed from further evaluation.
Construct a bypass route from SR 179 to Red Rock Loop Road	A new two-lane minor collector roadway was modeled from SR 179 to Red Rock Loop to determine if providing a bypass route would alleviate congestion on SR 179 and SR 89A. The model determined that minimal traffic would utilize the bypass route and congestion levels along SR 179 would remain high. Constructing a bypass route would also require the construction of a bridge over the environmentally sensitive Oak Creek. Due to the limited congestion benefits, adverse environmental impacts, and high construction costs the bypass route was removed from further evaluation.

Figure 5.9: Alternative 3 Level of Congestion



EVALUATION OF PEDESTRIAN, BICYCLE, AND TRAIL IMPROVEMENTS

Alternative modes of transportation such as sidewalks, bike paths/routes, and trails (including equestrian) are an important aspect of the multimodal transportation network as they provide mobility for those not able to operate or without access to a vehicle, and also for recreational purpose. At the onset of the study, community members, stakeholders, and the TAC, all expressed interest in enhancing existing pedestrian facilities to allow pedestrians to safely walk between residential areas and activity centers. Developing a community-wide pedestrian and bicycle network can lead to many benefits, including:

- Lowering traffic congestion by reducing dependence on automobiles
- Enhancing residents quality of life through promoting healthier lifestyles
- Providing mobility for those without a vehicle or are unable to drive
- Improving community aesthetics while preserving the natural environment

According to the FHWA's *Engineering Measures for Improved Pedestrian Safety*, "walking along the roadway" crashes are reduced by 88% when sidewalks/walkways are constructed on both sides of a roadway. Figure 5.10 provides an overview of potential pedestrian, bicycle, and trail facilities that could enhance the study area's existing transportation network.

EVALUATION OF TRANSIT NEEDS

Successful transit systems open economic opportunities for local residents and businesses, enable residents without access to a transportation mode, link neighboring destinations, and generally enhance the quality of life of residents and the economic vitality of rural communities. Transit services in the Verde Valley region have been fairly successful and are well liked by the residents and businesses in the region. Transit service within Verde Valley is currently provided by the Cottonwood Area Transit (CAT), Verde Lynx, and the Yavapai-Apache Nation Transit System.

Yavapai County is currently developing the *Yavapai Regional Mobility Management Implementation Plan* in an effort to developing a guide for strengthening mobility in the region, with a focus on mobility management activities that provide improved access through a wide range of activities. The plan will cover mobility management activities throughout Yavapai County as many human service programs operate countywide and people routinely travel between the Verde Valley and CYMPO region for services. It will address linkages between transit systems but will not address transit planning in the Verde Valley due to the comprehensive system already established by the City of Cottonwood and Yavapai-Apache Nation.

Summary of Transit Need and Demand

During public outreach meetings, stakeholder meetings, and TAC meetings, it was repeatedly vocalized that the Verde Valley region needs additional transit services to link activity centers and to meet future demand. Per the Transportation Research Board's (TRB) Transit Cooperative Research Program (TCRP) Report 161, the number of people needing passenger transportation is primarily based on the number of persons residing in households with incomes below the poverty level and persons residing in households with no vehicles. Data was extracted from the 2009-2013 American Community Survey (ACS) for each of the population groups. According to the 2009-2013ACS, there are currently 10,601 persons (17% of total population) residing in households with incomes below the poverty level and 2,113 persons (3.5% of total population) residing in households with no vehicles. Based on future population and housing unit projections, these estimates are expected to increase resulting in the need for additional transit service. Table 5.6 summarizes the transit dependent population groups for current and future years. Comprehensive Transit Feasibility and Transit Implementation studies are needed to identify exact transit needs in the region.

Table 5.6: Persons Below Poverty Level and Persons with No Vehicles

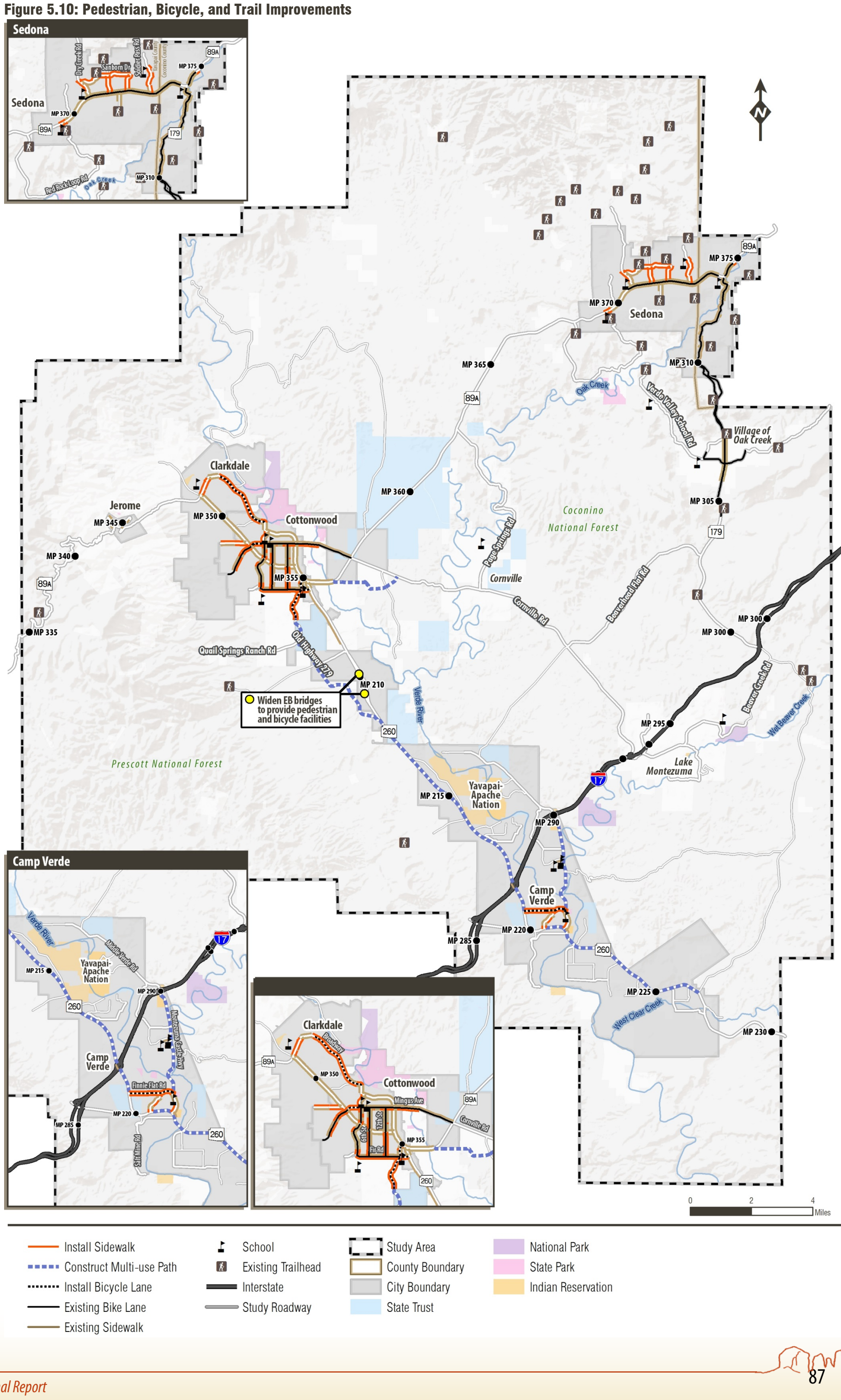
Year	Persons Below Poverty Level	Persons in Households with No Vehicles
Year 2015	10,601	2,113
Year 2025	13,086	2,612
Year 2040	15,197	3052

Based on analysis of existing transit needs, potential growth within the study area, and input from the public, stakeholders, and TAC members, there is a need for increased transit service:

- Cornville – fixed route service between Cottonwood and Cornville would enhance mobility choices to area residents as well as provide a tourist connection between the Verde Valley Wine Trail and Cottonwood. As development occurs on Cornville Road, the need for additional modal choices will increase.
- Lake Montezuma – regional transit service is needed between Lake Montezuma and commercial and medical services. Expansion of the Yavapai-Apache Transit routes or CAT routes to include fixed stops in Lake Montezuma would provide area residents with access to commercial and medical service.
- Village of Oak Creek – fixed route service between Sedona and the Village of Oak Creek may reduce traffic congestion on SR 179 and will provide additional modal choices between the two communities for both tourists and daily commuters.
- Verde Lakes – transit service would be beneficial for area residents between Verde Lakes and shopping and medical services in Cottonwood and Camp Verde.
- Camp Verde – as development occurs on SR 260, Finnie Flat Road, and Montezuma Castle Highway, the area may require increased transit services to provide transportation choices to area residents.
- Sedona - a circulator route within Sedona would provide area residents and tourists with alternative methods of accessing activity centers.

In order to implement additional transit services, comprehensive Transit Feasibility and Transit Implementation studies are needed to identify exact transit needs in the region.

Figure 5.10: Pedestrian, Bicycle, and Trail Improvements



Public involvement is essential to the broad acceptance and successful implementation of any transportation improvement plan. The goal of community outreach is to educate stakeholders and the public about the study, provide opportunities for input, and to create a process to build consensus in support of the study recommendations. For this study, Phase 1 of the outreach focused on current transportation issues, problem areas, and needs; and Phase 2 focused on improvement recommendations for the problem areas identified in the first phase. This chapter presents public and stakeholder outreach conducted during both phases of public involvement.

PUBLIC INVOLVEMENT

Public involvement is the process of involving the public throughout the transportation planning process through meaningful communication with interested citizens. To ensure that transportation decisions reflect the public's best interests, public involvement is a critical component of the transportation planning process. To engage the public, the study work plan includes two public meetings to inform, discuss, and to seek input. Additionally, a project website was developed and hosted by ADOT to enable citizens and the public to access study documents and to submit comments or questions.

Phase 1

The purpose of the first phase of public outreach was to seek input from the public regarding the existing and future deficiencies and needs of the area. The first set of Public Open House meetings provided interested residents an overview of the current conditions and deficiencies of the existing transportation system in the Verde Valley area. The first set of Public Open House meetings took place July 14-16th, 2015 in Camp Verde, Cottonwood, and Sedona. In total, 35 community members attended the three meetings; 11 in Camp Verde, 17 in Cottonwood, and 7 in Sedona.

The meeting began with a brief overview of the study, including the purpose of the study, why the study is needed, the study process, and the purpose of the meeting. An overview of the future socioeconomic conditions and a summary of roadway and multimodal deficiencies and needs, which were identified through technical data analysis and input from stakeholders and TAC members, was presented. After the presentation, participants were invited to make notes on the boards to identify areas they would like to see improvements. Participants were also encouraged to ask questions during the presentation and to discuss issues with study team members during the open discussion. Key comments received during the meetings included:

- Heavy congestion often occurs on Cornville Road, SR 179 in the Village of Oak Creek and Sedona, SR 260 and SR 89A in Cottonwood, and on SR 89A in Sedona.
- Roadway shoulders need to be improved to encourage bicycle travel, including paving the shoulders to be as smooth as the roadway surface.
- An alternative/emergency route to Lake Montezuma is a high priority project. Previous planning documents have identified alternative/emergency routes at: Wet Beaver Creek to Beaver Creek Road, Stagecoach Road to Camp Verde, and Forest Service Road 618 from I-17 to Camp Verde. Additionally a low water crossing is needed across Wet Beaver Creek.
- Students residing north of SR 89A near the Sedona High School utilize bus service to access school, since crossing SR 89A is dangerous. The impacts of the bus stop at the school and the safety conditions along SR 89A for students needs to be examined.
- Equal support was given to the usage of roundabouts and traffic signals.

- Recommended roadway improvements provided by participants included:
  - Extend I-17 On-Ramp at Cornville Road South
  - SR 89A (Westbound) between Bridgeport and Oak Creek Valley has poor pavement conditions
  - Pave Ogden Ranch Road connection between Camino Real and SR 264
  - If Cottonwood develops the "Western Loop", feed roadway into existing collectors in Verde Village (Peila Avenue, Rio Mesa Trail, and Fir Street)
  - Add shoulders to Broadway been Cottonwood and Clarkdale
  - Alternative route between Uptown Sedona to West Sedona and from the Village of Oak Creek to Red Rock Loop Road

- Pedestrian and bicycle facilities are needed in the following locations:
  - SR 260 between Cottonwood and Camp Verde
  - SR 260 East of Camp Verde
  - SR 89A between Camp Verde and Sedona
  - SR 89A pedestrian bridge in Uptown Sedona
  - Beaverhead Flat Road
  - Beaver Creek Road to SR 179
  - Black Hills Drive
  - Cornville Road between Page Springs Road and I-17
  - Camino Real to Mingus Mountain High School
  - Groseta Ranch Road from Old Town Cottonwood to Clarkdale
  - Montezuma Lake Road
  - Old Highway 279
  - Old Stage Coach Road
  - Page Springs Road (bike lanes)
  - Wilbur Canyon Bridge
  - Old Town Cottonwood from Dead Horse Ranch State Park

- Transit needs, deficiencies, and comments received during the meeting include:
  - Yavapai-Apache Transit has plans to expand service to Verde Lakes and to Lake Montezuma
  - The Lynx is heavily utilized by high school students. On most days 10-12 students disembark at the Sedona High School along SR 89A.
  - A transit stop with parking would be beneficial in McGuireville
  - Regional and local service needs to be expanded

Public Involvement Summary Report 1 provides a comprehensive summary of the first public meeting.

Phase 2

The purpose of the second phase of public outreach was to seek input from the public regarding the recommended improvements for the near-, mid-, and long-term phases. The second set of Public Open House meetings focused on the recommended studies, congestion management, and roadway and multimodal improvements. The second set of Public Open House meetings took place in November 16-19th, 2015 in Camp Verde, Cottonwood, and Sedona. In total, 45 community members attended the three meetings; 6 in Camp Verde, 21 in Cottonwood, and 18 in Sedona.

The meeting began with a brief overview of the study, including the purpose of the study, why the study is needed, the study process, and the purpose of the meeting. An overview of the current and future socioeconomic conditions and congestion was presented before discussing the recommended improvements. After the presentation, participants were invited to complete comment forms to provide feedback on materials presented at the meeting. Participants were also encouraged to ask questions during the presentation and to discuss concerns with study team members during the open discussion. Key comments received during the meetings included:

- The majority of comments received stated that they would prefer minimizing impacts to Forest Service Land.
- The forest plan should be modified to allow for Schnebly Hill Road to be changed from a limited use road to an actively used road; the corridor should also be graded for passenger car use and upgraded to serve as an alternative to access Flagstaff
- Reconstruct road before Midgley behind Jordan Park to Dry Creek following Power Line Road
- The Prescott National Forest expressed concern of the West Loop Phase 2, due to the potential impacts on Forest Land and watershed concerns as this watershed drains into the Verde River. Additionally, the Forest identified potential concerns to impacts to the range, OHV, and the trailhead located at the end of Ogden Ranch Road.
- The Prescott National Forest expressed concern of the Middle Verde Road Extension due to biological/riparian impacts. The Forest recommended utilizing private lands to minimize the impacts on the Forest.
- Respondents primarily agreed with the improvements proposed. Multiple respondents identified West Loop Phase 1, Middle Verde Road Extension, widening Cornville Road, paving Beaver Creek Road, paving Groseta Ranch Road, Fir Street Extension, and widening Broadway as priority improvements.
- Additional improvements recommendations provided include:
    - Provide a connection from Midgley Bridge to Dry Creek Road
    - Provide an alternative from the Sedona Airport to Red Rock Loop Road
    - Pave Schnebly Hill Road
    - Widen SR 179 to four lanes
    - Construct a new road connecting Broadway to SR 89A
    - Construct a bridge or low water crossing from Village of Oak Creek to West Sedona
- There were multiple comments opposing the West Loop Road Phase 2 project. Respondents were concerned that the corridor would disturb prime Forest Land and would require condemnation of existing housing units. Additional comments in opposition of West Loop Road Phase 2 suggested utilizing a combination of existing streets (Fir, Peila, and Rio Mesa) as an alternative.
- Respondents primarily agreed with the improvements proposed. Multiple respondents identified constructing sidewalks on Camino Real, from Clarkdale to Cottonwood, on Finnie Flat Road, and widening shoulders throughout the study area as priority sidewalk or multi-use path improvements.
- There was some opposition for the use of rumble strips and textured surfaces as it may impact bicyclists.
- 50% of respondents ranked a potential transit route from the Village of Oak Creek to Sedona as the highest priority
- The second highest priority routes were identified as Camp Verde to Verde Lakes and a link between Cottonwood- Cornville- and the Village of Oak Creek.

Public Involvement Summary Report 2 provides a comprehensive summary of the first public meeting.

AGENCY/STAKEHOLDER COORDINATION

To facilitate agency and stakeholder communication, the study team conducted meetings with the following groups:

- Technical Advisory Committee (TAC): Comprised of agency representatives, TAC meetings are held at key milestones throughout the project and allow agencies with vested interest in the project an opportunity to provide input and feedback.
- Stakeholders: These meetings help the study team understand the issues, concerns, and needs of the study area from the unique perspective of the stakeholders. Stakeholders for this study include utility companies, schools, fire and police, local tribal staff, local business owners, and persons with vested interest in the project.

The VVTPO, ADOT, and the study team conducted four meetings for stakeholders to provide input on improvement scenarios and to discuss the long-term "vision" of the study area. Each meeting included a brief presentation of potential improvement projects and an interactive discussion on multimodal improvement scenarios.

- **Phase 1**
  - Meeting 1 – Conducted after the VVPTO planning meeting on September 23, 2015 at the Cottonwood County Annex. Meeting was tailored to garner input from all VVPTO representatives.
- **Phase 2**
  - Meeting 2 – One-on-one meeting with representatives of the City of Sedona on October 1, 2015 in order to obtain input on improvement concepts specific to the needs of the City.
  - Meeting 3 – One-on-one meeting with representatives of the Town of Camp Verde on October 1, 2015 in order to obtain input on improvement concepts specific to the needs of the Town.
  - Meeting 4 – Teleconference meeting with representatives from the Coconino National Forest, Prescott National Forest, and Arizona State Land Department on October 8, 2015.

Phase 1

To develop a thorough understanding of the issues, deficiencies, and needs, the study team identified and interviewed a core group of stakeholders. Stakeholders for this study included utility companies, schools, fire and police, local business owners, national forest representatives, and persons with vested interest in the project. A questionnaire was distributed to each stakeholder meeting and was followed up with an open discussion. These meetings helped the study team understand the issues, concerns and needs of the study area from the unique perspective of the stakeholders. Key comments received during the meetings included:

- Mingus Avenue experience high traffic volumes and should be considered for upgrading the functional classification of the roadway to an arterial.
- Consideration should be given to constructing a bridge over the Verde River at Cherry Creek Road in order to connect SR 260 to Middle Verde Road. Outreach should be conducted with the Yavapai Apache Nation to determine their Nation's holdings over the Verde River.
- In effort to relieve congestion along SR 179 and SR 89A, travel demand strategies should be evaluated to determine. Potential strategies include: installing variable message sign boards on I-17 displaying travel time information to Sedona, installing variable message sign boards in Uptown Sedona to disseminate parking availability, constructing a shuttle service parking lot south of the SR 179/SR 89A intersection.
- Constructing a roadway connecting Beaver Creek Road to Montezuma Avenue should be considered a high priority project as emergency response is an issue in the area.

- Paving Groseta Ranch Road from SR 89A to Main Street will provide necessary alternative access, relieve congestion in Old Town Cottonwood, and can serve as a truck route to Clarkdale.
- The Town of Camp Verde is currently pursuing widening Finnie Flat Road and should be considered a high priority project.
- Representatives from the Prescott and Coconino National Forest expressed concern of improvements that impact the National Forests, because while adding additional travel lanes may relieve congestion there are trade-offs to the National Forest resources. Representatives recommended conducting an analysis to determine if alternative roadway improvements along existing corridors can provide the necessary capacity to alleviate congestion and in turn place no undo damage to the National Forests. It was also recommended to provide alternatives to the public and communities to decide if the trade-offs of constructing roadways in National Forest Lands is warranted.

Stakeholder Summary Report 2 provides a detailed list of the stakeholders, questionnaire distributed during the meeting, and a summary of the comments received.

Phase 2

For the second phase of the meetings, the stakeholders were asked to provide feedback on the improvement concepts, and to discuss improvement project phasing strategies and the specific needs of each city. A questionnaire was distributed to each stakeholder meeting and was followed up with an open discussion. Key comments received during the meetings included:

- A pedestrian walkway or multi-use path from Camp Verde to Cottonwood along SR 260 and Old Hwy 279 (in the vicinity of Cottonwood) should be included.
- Mingus Ave has more traffic than Main St in Cottonwood. Mingus Ave should be considered for upgrading the functional classification to an arterial.
- Add "Ranger road" option to Alternative 2.
- Add "Groseta Ranch Road (SR89A to North of Old Town Cottonwood)" under Alternative 3.
- Include multiuse path connecting Cottonwood to Camp Verde.
- Move new roadway from Montezuma Ave to Beaver Creek Rd to Alternative 1 or 2 (1 preferable)
- Consider Bridge to connect Middle Verde to Cherry Creek at SR 260 (Connect Yavapai Apache Holdings over Verde River)
- Improvement projects suggested priority:
    - Cottonwood to Clarkdale – number one priority for sidewalk and multi-use path improvement locations
    - Cornville Rd – number one priority for bike lane or shoulder widening improvement locations
    - Alternative 1 Rankings:
        - Fir Street Extension: 4 Lanes
        - Main Street: Arterial
        - West Loop (Phase 1)
        - Beaver Creek Rd: Major Collector)
        - Cornville Rd: 4 Lanes
        - Middle Verde Rd Extension
        - Beaver Creek Rd: Pave

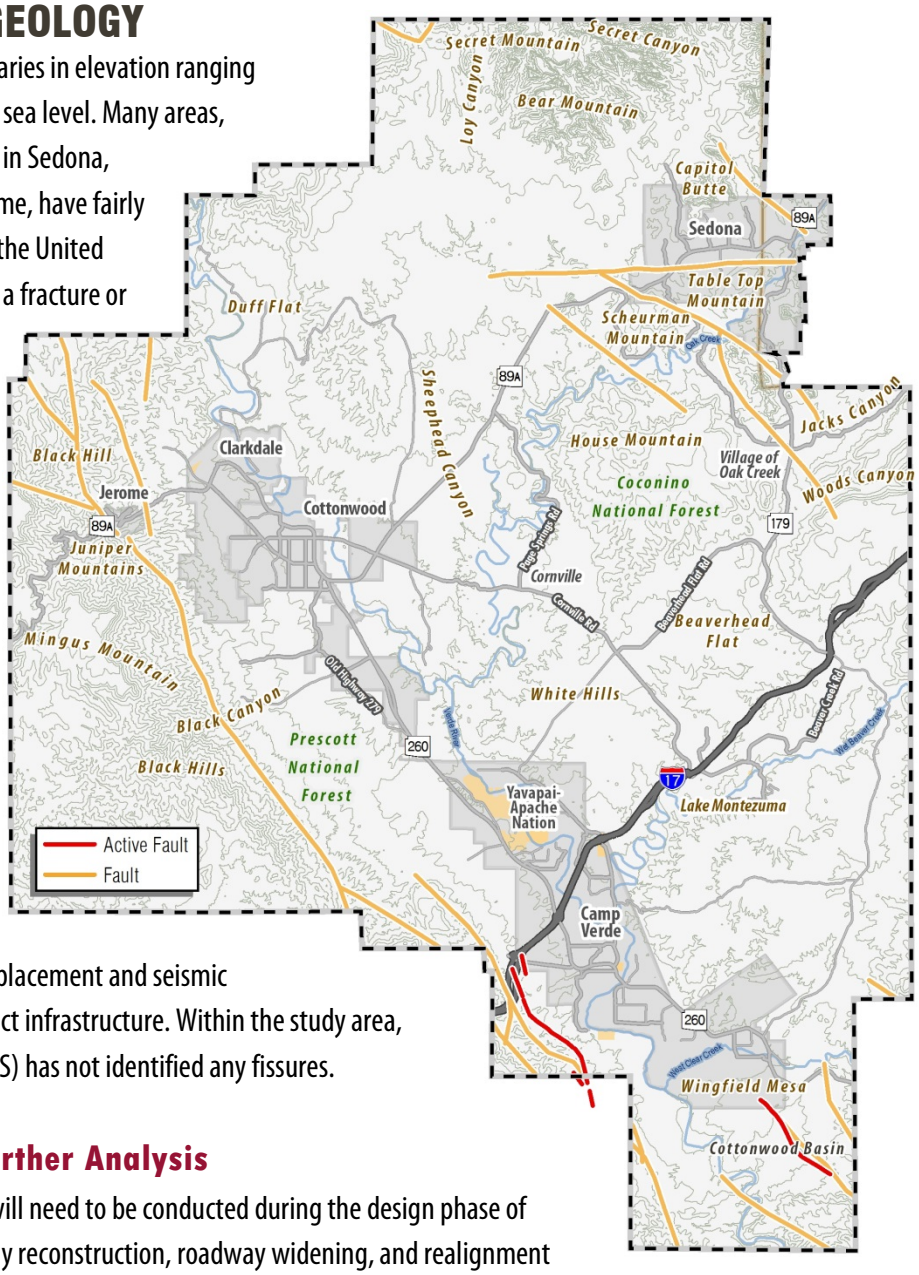
        - Tissaw Rd Extension: 4 Lanes
    - Alternative # 2 Rankings:
        - West Loop (Phase 2)
        - Forest Rd 119A
    - Alternative 3 Rankings:
        - Montezuma Lake Rd to Montezuma Ave
- The Town recently worked with the Yavapai-Apache Nation to identify bus stops along SR 260 towards Verde Lakes.

Stakeholder Summary Report 2 provides a detailed list of the stakeholders, questionnaire distributed during the meeting, and a summary of the comments received.

When environmental conditions and concerns are reviewed in the early stages of the transportation planning process, transportation solutions can be developed to lessen the negative impacts on the natural environment. This chapter presents a review of environmental conditions within the study area.

TOPOGRAPHY AND GEOLOGY

The topography of the study area varies in elevation ranging between 2,100 to 7,800 feet above sea level. Many areas, including Oak Creek, Red Rock area in Sedona, and Mingus Mountain west of Jerome, have fairly steep slopes. Faults are defined by the United States Geological Society (USGS) as a fracture or zone of fractures between two blocks of rock that allow the blocks to move relative to each other. Quaternary faults are active fault lines that have been identified on the surface and have moved in the past 1.6 million years. Within the study area, quaternary faults are located southwest and southeast of the Town of Camp Verde and include the Verde fault zone and Cottonwood Basin fault. Earth fissures and faults are associated with earth displacement and seismic activity, which can negatively impact infrastructure. Within the study area, the Arizona Geological Survey (AZGS) has not identified any fissures.



Recommendations for Further Analysis

A geotechnical evaluation of soils will need to be conducted during the design phase of project implementation for roadway reconstruction, roadway widening, and realignment projects to determine pavement, slope protection, and structural needs. Construction of new roadways would require ground disturbance to clear construction areas of vegetation, to grade the land to appropriate levels of slope, and to establish staging and storage areas. Design considerations should include avoiding areas with greater degrees of slope, bedrock outcrops, and known faults. Faults existing within project areas should also be considered in the design and construction of new roadways or roadway improvements. An analysis of drainage needs will also need to be performed during the design phase for improvements.

VEGETATION

The Verde Valley study area contains the following vegetation communities:

- Arizona Upland Subdivision – primarily located along the I-17 corridor between Camp Verde and the Village of Oak Creek, Arizona Upland is a part of the Sonoran Desert Subdivision biotic community and is comprised of leguminous trees and succulents.
- Great Basin Conifer Woodland – mainly comprised of medium sized conifers, the pinyon pine and juniper, this vegetation community covers approximately 34% of the study area.
- Interior Chaparral – located in the Prescott National Forest, this community is comprised of a mix of dense shrub species such as mountain mahogany, shrub live oak, and manzanita and commonly includes cactus, agave, and yucca.
- Petran Montane Conifer Forest - located along SR 89A west of Jerome, this vegetation community is dominated by ponderosa pine and Douglas-fir.
- Semidesert Grassland – covering 37% of the study area, this study area is primarily characterized by grasses interspersed with some succulents, such as prickly-pear cactus and yucca.

Recommendations for Further Analysis

Any roadway widening, shoulder widening, or new roadway and multimodal facility improvements have the potential to affect native plants, including cacti and trees protected under the Arizona Native Plant Law. Native plant removal would be subject to the Arizona Native Plant Law. A survey for protected native plants (as defined by the Arizona Department of Agriculture) and those identified to be Threatened, Endangered, or Sensitive by the US Forest Service will need to be undertaken during future environmental analyses. During the design phase, a detailed review will need to be conducted to identify impacts on protected plant species. Consideration during the design phase should be given to protecting native vegetation.

THREATENED, ENDANGERED, AND SENSITIVE SPECIES

The Arizona Game and Fish Department (AZGFD) Heritage Data Management System (HDMS) was accessed to determine special state species and threatened, endangered, and candidate species in the study area. *It is important to note that the species identified in the tables and in this section represent a sample of threatened, endangered, and sensitive species within the study area. Additional surveys and research will need to be completed on a project by project basis to determine species that may be present or impacted.*

Figure 7.1 illustrates the location of potential wildlife linkages as identified by the Arizona Wildlife Linkages Workgroup (AWLW). Table 7.1 outlines the special status species and critical habitats identified utilizing the AZGFD HDMS online retrieval system for approximately 2.0 miles around the study area. As outlined in the table, within the vicinity of the study area, there are designated critical habitats for the southwestern willow flycatcher, gila chub, spikedance, Mexican spotted owl, loach minnow, and razorback sucker. Critical habitats are geographic areas that are essential for the conservation of a threatened or endangered species that may require special management and protection. Narrow headed and Mexican garter snakes, fish species, and the yellow billed cuckoo habitats have the potential to impact future transportation facilities. Additionally, there are numerous wildlife species within the Prescott and Coconino National Forest that may influence transportation on National Forest lands.

Endangered Species

Due to the delisting of the bald eagle from the List of Threatened and Endangered Wildlife under the Endangered Species Act (ESA), the U.S. Fish and Wildlife Service enacted the Bald and Golden Eagle Protection Act (Eagle Act). The Act prohibits the obstruction or harassment on Bald Eagles and prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles,

including their parts, nests, or eggs. In the Verde Valley, there are currently three bald eagle breeding areas: Towers, Oak Creek, and Ladders. Both the Towers and Ladders breeding areas have seasonal closures to protect the bald eagles during the nesting period.

Under Section 10 of the ESA, the Verde Valley study area is designated as a Section 10(j) area for the Colorado pikeminnow and a zone 2 for the Mexican gray wolf. Section 10(j) designations allow for the reintroduction of populations of listed species as "experimental populations" to determine if the experimental population is "essential" or "nonessential" for the continued existence of a species. From 1981-1990, over 623,000 Colorado pikeminnow were reintroduced to the Salt and Verde Rivers and later deemed as not essential for the continued existence of the species. Zone 2 designated sites are areas within the Mexican Wolf Nonessential Experimental Population Area into which Mexican wolves would be allowed to naturally disperse and occupy, and where Mexican wolves may be translocated.

Protected Arizona Native Plants

Native vegetation helps prevent erosion, provides food and shelter for desert wildlife, and acts to shade the desert floor and reflects urban heat. To protect species from being over harvested, the Arizona Native Plant Law was enacted. Per the Arizona Native Plant Law, protected plants may not be removed from any lands, whether private or public, without the permission of the land owner and a permit from the Arizona Department of Agriculture. No formal inventory of native plants was conducted; however, native plants may occur in the study area. High Safeguarded plants, plants that are threatened for survival or are in danger of extinction, that may be in the study area include: Arizona Bugbane, Arizona Cliff Rose, Grand Canyon Century Plant, and the Tonto Basin Agave.

Wildlife Movements

Wildlife movement through the study area depends on the availability of preferred habitat, foraging range, migration, and dispersal patterns. Often, resident wildlife species find that altered habitat and developed areas present a barrier to movement. The AWLW, a collaboration effort between ADOT and nine public and non-profit organizations, identified large blocks of protected habitat, potential wildlife movement corridors, and factors that may disrupt these linkage zones. The AWLW developed the Arizona Wildlife Linkages Assessment, which identified wildlife habitat blocks and linkage zones that allow land managers and transportation planners to integrate wildlife needs into developments and land use plans. Wildlife linkage zones are areas of wildlife movement between habitat blocks. Potential wildlife linkage zones within the study area include: Oak Creek-Munds Park, Cottonwood- Sedona, State Route 179, Northern I-17 Corridor (high priority), Yeager Canyon-Camp Verde (high priority), SR 260 West from I-17 to SR 87 (high priority), and Granite Mountain - Black Hills, and Munds Mountain - Black Hills. Figure 7.1 illustrates the locations of wildlife corridors in the study area.

Wilderness Areas

Wilderness areas are federal lands set aside by an act of Congress where the land is in a natural state and human impact is minimal. Wilderness areas within the study area include Sycamore Canyon Wilderness, Red Rock Secret Mountain Wilderness, Munds Mountain Wilderness, and Woodchute Wilderness.

Riparian Habitats

As illustrated in Figure 7.1, riparian habitats are potentially located along the Verde River, Oak Creek, Beaver Creek, and West Clear Creek. Riparian habitats are ecologically diverse areas typically found along the banks of rivers, lakes, or other bodies or water with unique soil and plant characteristics. These riparian areas provide a transition zone between dry and wet ecosystems and are among the most biologically rich habitats. Riparian habitats present within the study area include Mesquite, Cottonwood Willow, Mixed Broadleaf, Strand, Tamarisk, and Flood Scoured.

Table 7.1: Special Status Species and Critical Habitats in Project Vicinity

Common Name	FWS	USFS	BLM	NPL
Amphibians, Birds, Fish, Invertebrates, Mammals, and Reptiles				
Allen's Lappet-browed Bat	SC	S	S	
American Peregrine Falcon	SC			
Arizona Myotis	SC	S		
Bald Eagle - Sonoran Desert Population	SC, BGA	S	S	
Bald Eagle - Winter Population	SC, BGA	S	S	
Balmorhea Saddle-case Caddisfly	SC	S		
Big Free-tailed Bat	SC			
Brown Springsnail	SC	S	S	
Cave Myotis	SC	S		
Colorado Pikeminnow	LE,XN			
Desert Sucker	SC	S	S	
Fringed Myotis	SC			
Gila Chub	LE	S		
Gila Longfin Dace	SC		S	
Gila Topminnow	LE			
Golden Eagle	BGA		S	
Lowland Leopard Frog	SC	S	S	
Maricopa Tiger Beetle	SC			
Mexican Spotted Owl	LT			
Montezuma Well Springsnail	SC		S	
Narrow-headed Gartersnake	LT	S		
Northern Goshawk	SC	S	S	
Northern Mexican Gartersnake	LT	S		
Page Spring Micro Caddisfly	SC			
Page Springsnail	C*	S	S	
Pale Townsend's Big-eared Bat	SC	S	S	
Razorback Sucker	LE			
Roundtail Chub	C*	S		
Sonora Sucker	SC	S	S	
Southwestern Willow Flycatcher	LE			
Speckled Dace	SC		S	
Spikedace	LE			
Western Red Bat		S		
Western Small-footed Myotis	SC			
Yellow-billed Cuckoo (Western DPS)	LT	S		

Common Name	FWS	USFS	BLM	NPL
Plants				
Arizona Bugbane	CCA	S		HS
Arizona Cliff Rose	LE			HS
Arizona Phlox		S		
Bigelow Onion				SR
Cameron Water-parsley	SC			
Eastwood Alum Root		S		
Flagstaff Beardtongue		S		
Flagstaff False Pennyroyal		S		SR
Grand Canyon Century Plant		S		HS
Hualapai Milkwort		S		
Lyngholm's Brakefern		S		
Mazatzal Triteleia				SR
Metcalfe's Tick-trefoil		S		
Mt. Dellenbaugh Sandwort		S		
Page Springs Agave		S		
Ripley Wild-buckwheat				
Sacred Mountain Agave		S		
Tonto Basin Agave	SC	S		HS
Toumey Agave				SR
Verde Breadroot		S		
Verde Valley Sage	SC	S		SR
Viviparous Foxtail Cactus	SC	S	S	
Designated Critical Habitat				
Southwestern willow flycatcher				
Gila chub				
Spikedace				
Mexican spotted owl				
Loach minnow				
Razorback sucker				
10(J) Status Area				
Zone 2 for Mexican gray wolf	LE, XN			
Colorado pikeminnow	LE, XN			

FWS:
- *SC = US Fish and Wildlife Species of Concern*
- *PS = Partial Status: Listed as Endangered or Threatened, but no in entire range*
- *LE = Listed Endangered: imminent jeopardy of extinction*
- *LT = Listed Threatened: imminent jeopardy of becoming Endangered*
- *C * = US Fish and Wildlife Candidate Species*
- *XN = Experimental Nonessential population*
- *BGA = Bald and Golden Eagle Protection Act*
- *CCA = Candidate Conservation Agreement*

USFS: S = US Forest Service Sensitive

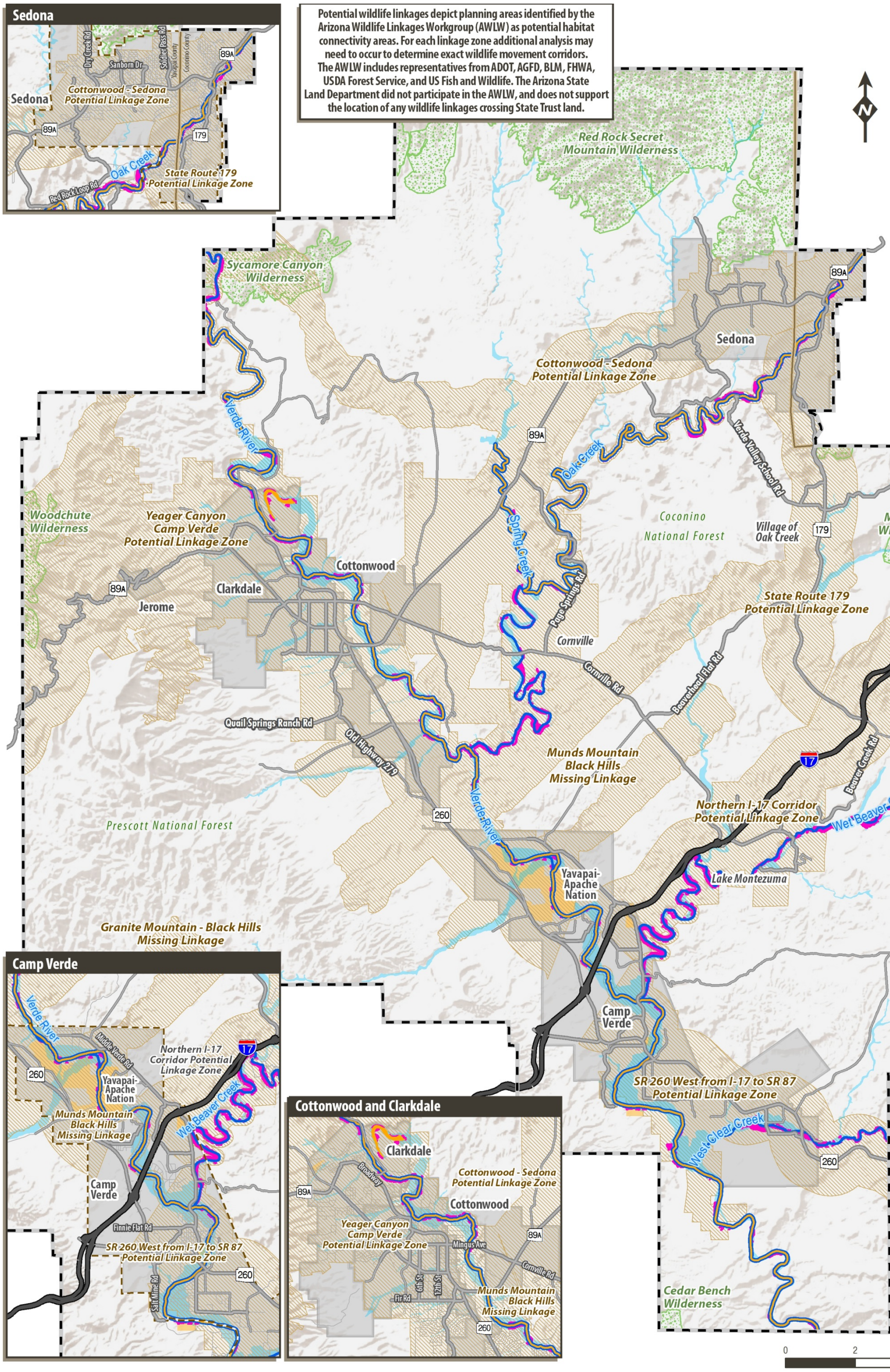
BLM: S = US Forest Service Sensitive

NPL:
- *HS = Highly Safeguarded: no collection allowed*
- *SR = Salvage Restricted: collection only with permit*

Source: AZGFS Wildlife of Special Concern in Arizona

Note: Species identified in the tables represent a sample of threatened, endangered, and sensitive species within the study area. Additional surveys and research will need to be completed on a project by project basis to determine species that may be present or impacted.

Figure 7.1: Wildlife Corridors and Hydrologic Features



Recommendations for Further Analysis

Construction within the study area may have the potential to affect the plants and wildlife identified in the AGFD special status species list or the USFWS threatened and endangered species list. During the Design Concept Report (DCR)/NEPA phase, a detailed Biological Evaluation will need to be conducted to determine the specific presence/absence of protected species and potential mitigation measures. During the design process for this project, it is recommended that the design team coordinate with the AGFD, the USFWS, and the Arizona Wildlife Linkages Workgroup to incorporate elements and features into the final design to protect wildlife from roadway traffic and allow for the ease of movement of wildlife across the project area in safety. If biological resources are affected by an improvement project, further studies to identify habitat and wildlife surveys for listed species will be needed to determine conservation strategies to be implemented as part of the project design. On-going communication is recommended between local jurisdictions, ADOT, Prescott National Forest, Coconino National Forest, Yavapai Apache Nation, AGFD, and Yavapai County to coordinate mitigation measures to protect all environmentally sensitive species in the area during the construction phase.

HYDROLOGY

Floodplains

Executive Order 11988 requires federal agencies to avoid long- and short-term adverse impacts to floodplains to the extent possible, and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. A review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map shows a 100-year Flood Zone associated with the majority of rivers and streams within the study area. Flooding in the Flood Zone may impact transportation movement and limit access to residential areas and activity centers. Additionally, impacts to floodplains from roadway construction need to be mitigated to reduce or eliminate induced increases to 100-year flood event water surface elevations. Stakeholders commented that the Verde Lakes area experiences severe flooding issues that hinder emergency service response time to residents residing south of the Verde River.

Wetlands

Wetlands are defined by the Environmental Protection Agency (EPA) as lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface. Wetlands typically are areas where water covers the soil or is present at/near the surface of the soil year-round or during varying periods throughout the year. Within the study area, wetlands are located through the region; however, they primarily follow Verde River, Oak Creek, Spring Creek, Wet Beaver Creek, and Clear Creek. Wetland types located within the study area include Freshwater Ponds, Lakes, and Riverine.

Water Quality

The following waterbodies (commonly referred to as the 303(d) list) were assessed by ADEQ as having impaired uses that require more than existing technology and permit controls to achieve or maintain water quality standards for E. Coli:

- Oak Creek (Below Slide Rock to Dry Creek)
- Oak Creek (Dry Creek to Spring Creek)
- Spring Creek (Coffee Creek to Oak Creek)

Arizona's Outstanding Natural Resource Waters (ONRWs) are called "unique waters" that provide special recreational or ecological significance or have teetered or endangered species associated with the water body. Additionally, ORNWs include the highest quality waters and water quality standards must be maintained. According to ADEQ, Oak Creek, including the West Fork of Oak Creek, is deemed an ONRW. Figure 7.1 illustrates the location of major hydrologic features in the area.

Nationwide Rivers Inventory (NRI)

The National Park Service maintains a list of free-flowing river segments that possess one or more outstanding remarkable values (ORVs) of local or regional significance. Per the Wild and Scenic Rivers Act, portions of the following rivers are eligible for designation under the Wild and Scenic Rivers Act as a wild, scenic, or recreational river:

- West Clear Creek
- Oak Creek
- Sycamore Creek
- Verde River
- Wet Beaver Creek

Wild river areas are those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. Scenic rivers are rivers free of impoundments, with primitive shorelines and watersheds, but are still accessible by road. Recreational rivers are readily accessible by road and have undergone some impoundment or division in the past.

Recommendations for Further Analysis

The study area contains FEMA-mapped floodplains that could be affected by roadway improvements through the addition of fill, excavation, and/or construction of bridges and other roadway structures. Impacts to floodplains from roadway construction would need to be mitigated to reduce or eliminate induced increases to 100-year flood event water surface elevations, in keeping with applicable local, State, and/or federal regulations. A drainage analysis will need to be conducted during the design phase of roadway widening, roadway paving, and realignment projects to determine the degree of impacts on the area's hydrological features and to identify potential mitigation measures.

A jurisdictional delineation may need to be undertaken to identify which washes would be recommended as Waters of the US and thus subject to Section 404 permitting and Section 401 certification. Further analysis of jurisdictional waters should be addressed in the DCR/NEPA phase of project development.

During the DCR/NEPA phase of project development, an analysis needs to be conducted to determine whether the proposed improvements could adversely affect the natural, cultural, or recreational values of the inventoried wild river areas. In some cases, impacts to the river segments could be severe enough to warrant exclusion from the Wild and Scenic Rivers System. Consideration should be given during the design phase of bridge rehabilitation and roadway construction to minimize impacts on the free-flow conditions of rivers.

Coordination with the USFWS and EPA to identify and to incorporate elements that protect wetlands in and around the study area should also be conducted during the design phase. Furthermore, landscaping considerations should be given to incorporate low-water-use or desert adaptable planting that is consistent with EPA guidelines.

PRIME AND UNIQUE FARMLANDS

The study area is located in the Natural Resources Conservation Service's (NRCS) Soil Survey Geographic (SSURGO) Database soil survey areas of AZ 639, AZ 641, AZ 643. According to the Soil Survey, there are no areas designated as prime or unique farmland within the surveys AZ 641 and AZ 643. Soil Survey Area AZ 639 survey area's status is listed by the NRCS as being in the Initial US Forest Service (USFS) phase with Terrestrial Ecosystem Survey (TES) mapping complete.

NOISE IMPACTS

Maintaining acceptable noise levels to preserve the character of open spaces, residential quiet zones, and recreational facilities should be considered when selecting a potential transportation improvement project. Schools, hospitals, residential development, and community uses requiring low noise levels are included in the list of potential noise-sensitive receptors. In addition to noise created from traffic on roadways, major noise generators include the Sedona Airport, Rimrock Airport, Verde Canyon Railroad, and mining and industrial sites. Existing and future parks, recreational trail systems, residential development, and community uses requiring low noise levels are included in the list of potential noise-sensitive receptors. A detailed noise analysis study would need to be conducted to identify if potential noise levels exceed noise thresholds.

Recommendations for Further Analysis

A detailed noise analysis study will need to be conducted to identify if potential noise levels exceed FHWA noise thresholds. During the design phase of roadway widening and roadway construction projects, noise-sensitive receivers should be modeled using the FHWA's approved Traffic Noise Model version 2.5 (TNM2.5) and validated against field measurements. Traffic noise impacts may occur as a result of future development; therefore, noise abatement measures should be assessed for all affected noise receptors. Noise abatement measures considered during the DCR/NEPA phase may include alteration of the roadway alignment, acquisition of ROW to provide buffer zones, traffic management measures (control devices and traffic/vehicle restrictions), and noise barriers (noise walls, noise berms, combination wall/berms).

AIR QUALITY

Based on data provided by the ADEQ, air quality in the study area meets the National Ambient Air Quality Standards (NAAQS) set forth by the Clean Air Act (CAA) for criteria pollutants carbon monoxide (CO), nitrogen dioxide (NO2), ozone, particle matter (PM) 2.5 and 10, and sulfur dioxide (SO2).

Recommendations for Further Analysis

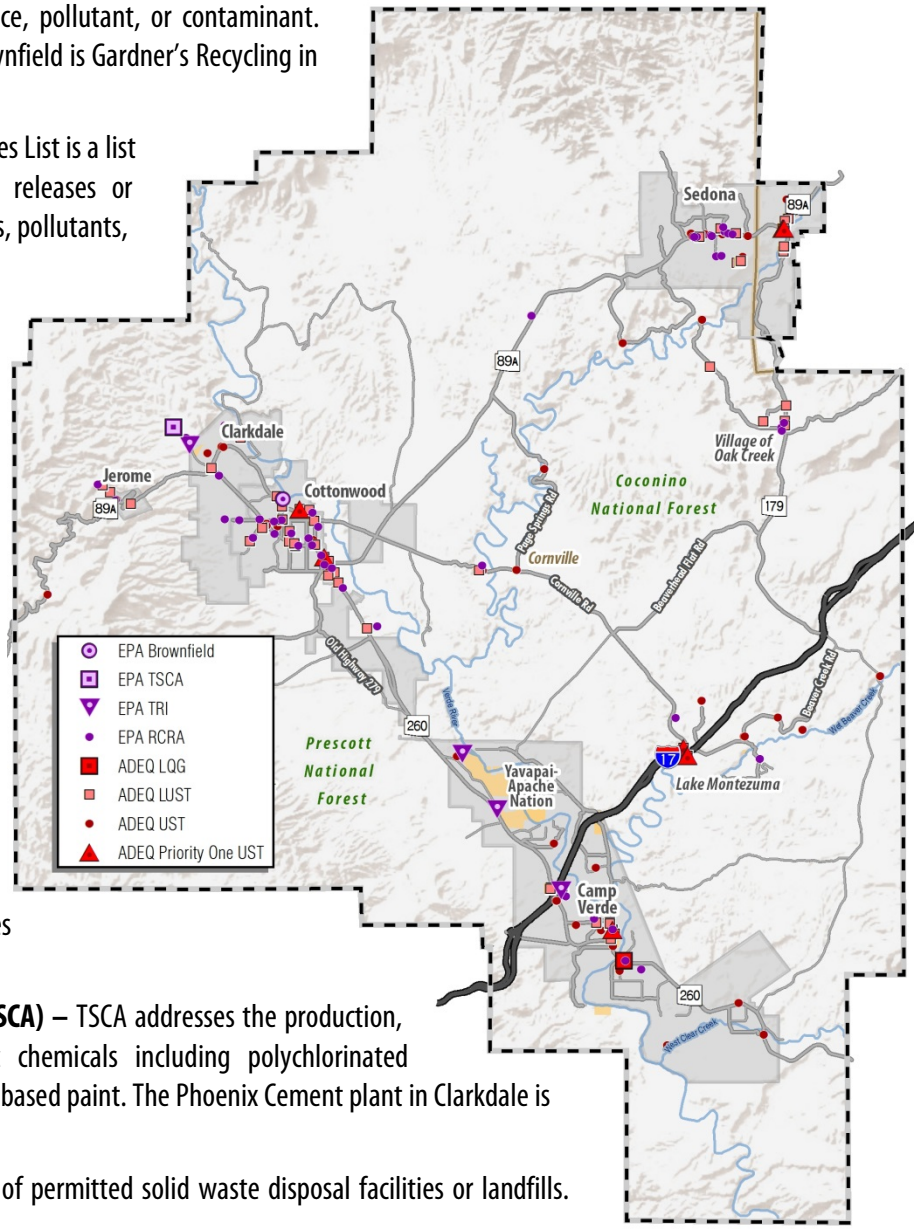
Proposed projects should include a fiscally constrained and air quality confirming program and plan and would need to adhere to local, State, and Federal air quality regulations. During roadway construction, some temporary air quality deterioration would occur from the operation of construction equipment and the slower traffic speeds associated with a construction zone.

HAZARDOUS MATERIALS

A regulatory review of federal and state hazardous materials database was performed to evaluate and identify the presence of hazardous materials present in the study area. Figure 7.2 illustrates the hazardous materials located within the study area. Following federal and state environmental records were reviewed to identify incidents and regulated material sites within the study corridors:

- **Federal Brownfield –** Brownfields are real property whose expansion, redevelopment, or reuse may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Within the study area the only Federal Brownfield is Gardner's Recycling in Cottonwood.
- **Federal Superfund –** The National Priorities List is a list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. Superfund is the federal government program to clean up the nation's uncontrolled hazardous waste sites. There are no superfund sites within the study area.
- **Federal Resource Conservation Recovery Act (RCRA) generator –** RCRA was established for sites that treat, store, and dispose of hazardous waste. There are 50 RCRA sites within the study area.
- **Federal Toxic Releases to Land (TRI) –** The Toxic Release Inventory contains information on toxic chemical releases and waste management activities reported annually by certain industries as well as federal facilities. There are 4 TRI sites within the study area.

Figure 7.2: Hazardous Materials Sites



- **Federal Toxic Substance Control Act (TSCA) –** TSCA addresses the production, importing, use, and disposal of specific chemicals including polychlorinated biphenyls (PCBs), asbestos, radon, and lead-based paint. The Phoenix Cement plant in Clarkdale is the only TSCA site in the study area.
- **State Landfills –** The state holds records of permitted solid waste disposal facilities or landfills. There are no landfills in the study area.
- **State Large Quantity Generator (LQG) –** Large quantity generator sites generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste, per month. The Prescott National Forest- Verde Ranger station is the only LQG in the study area.
- **State Leaking Underground Storage Tank (LUST)/ Underground Storage Tank (UST) –** Leaking USTs are defined as regulated USTs that contain regulated substances including petroleum and hazardous substances, such as those typically found at gasoline stations, fleet fueling facilities, and industrial sites, that are suspected or confirmed of having a leak.

Table 7.2 provides an overview of Hazardous Material sites identified within the study area.

Table 7.2: Hazardous Material Sites

Facility Type	Sites within Study Area
Environmental Protection Agency (EPA)	
Brownfield	1
Resource Conservation Recovery Act (RCRA) generators	50
Toxics Release Inventory (TRI)	4
Toxic Substance Control Act (TSCA)	1
Arizona Department of Environmental Quality (ADEQ)	
Large Quantity Generator (LQG)	1
Underground Storage Tank (UST)	113
Leaking Underground Storage Tank (LUST)	126
Priority One Underground Storage Tank	17

Source: 2013 Arizona Department of Environmental Quality, 2013 US Environmental Protection Agency

Recommendations for Further Analysis

The proposed improvements are primarily consistent in scope and scale of current facilities. A detailed evaluation based on right-of-way needs should occur during the DCR/EA phase of project development for any roadway widening, sidewalk installation, and roadway paving project. A corridor-level Preliminary Initial Site Assessment (PISA) will need to be conducted during the project design phase to identify issues and constraints related to hazardous sites in the area immediately adjacent to the corridor.

VISUAL RESOURCES

The visual character of the study area varies from scenic Red Rocks in Sedona, mountainous areas terrain, scenic areas within the Prescott and Coconino National Forests, to developed residential/commercial areas. As part of their Resource Manage Plan, the Prescott and Coconino National Forests both have individual visual resource management plans for the preservation the visual quality of recreational areas and areas of high visual concern. National Forest visual quality objectives may influence the direction of future transportation improvements on forest lands.

SR 179 from Dry Beaver Creek to Oak Creek is designated by the FHWA's American Byways program as a National Scenic Byway and All-American Road. As defined by the FWHA, the America's Byways program aims to recognize, preserve, and enhance roadways with one or more archeological, cultural, historic, natural, recreational, and scenic qualities. The 2005 *Red Rock Scenic Road Corridor Management Plan* was developed by ADOT to guide the management, development, and conservation of the corridor. State designated scenic roadways within study area include:

- Dry Creek Scenic Road (SR 89A – MP 363.5 to MP 370)
- Jerome-Clarkdale-Cottonwood Historic Road (SR 89A – MP 343.5 to MP 348 and MP 348 to MP 353.5)
- Mingus Mountain Scenic Road (SR 89A – MP 332.0 to MP 343.5)
- Sedona-Oak Creek Canyon Scenic Road (SR 89A – MP 375.5 to MP 390.0)

These designated routes each have Corridor Management Plans to outline guidelines for the development and conservation of the corridors to maintain the scenic, natural, and historic character of the routes. Efforts should also be made to preserve vistas and scenic resources throughout the National Forest and at specific sites operated by the National Park Service (Tuzigoot National Monument and Montezuma Castle National Monument). In addition, the study area does not include land owned by the Bureau of Land Management, which is subject to a visual resource management system that assesses the scenic value of an area and then establishes management objectives based on an acceptable level of visual preservation or disturbance.

Recommendations for Further Analysis

Any signage or roadway improvements on federal and state designated scenic corridors must comply with their respective Corridor Management Plans. During the design phase of corridor improvements and roadway construction, design consideration should be given to not impact existing viewing experiences, minimize visual impacts, and to provide vistas from the roadways to the area's striking geological formations and topography. Coordination should also occur with the Coconino and Prescott National Forests to comply with the National forest's scenery goals and objects. In addition, effort should also be made to preserve vistas and scenic resources throughout the study corridor and at specific sites operated by the National Park Service (Tuzigoot National Monument and Montezuma Castle National Monument). Where applicable, roadway design should incorporate cohesive planting design that allows for views of the surrounding landscape.

CULTURAL RESOURCES

Cultural resources are properties that reflect the heritage of local communities, states, and nations. Properties judged to be significant and to retain sufficient integrity to convey that significance are termed "historic properties" and are afforded certain protection in accordance with state and federal legislation. The National Historic Preservation Act (NHPA) of 1966, as amended, defines historic properties as any prehistoric or historic sites, buildings, structures, districts (including landscapes) and objects included in, or eligible for inclusion in, the National Register of Historic Places (NRHP). Traditional cultural properties having heritage value for contemporary communities (often, but not necessarily, Native American groups) also can be determined eligible for, and listed in, the NRHP because of their association with historic cultural practices or beliefs that are important in maintaining the cultural identities of such communities. The Arizona Register of Historic Places is the state's list of districts, sites, buildings, structures, and objects worthy of preservation.

Section 106 of the NHPA requires federal agencies to consider the potential effects of their undertakings on historic properties. Effects can be direct and result in physical alteration to the property, or indirect, as when the characteristics that qualify the property for NRHP listing are altered as a result of visual, auditory, or atmospheric intrusions. To be considered eligible for listing in the NRHP, a property must retain integrity of location, design, setting, materials, workmanship, feeling, and association and must also meet at least one of the following criteria:

- Criterion A - Associated with events that have made a significant contribution to the broad patterns of our history; or
- Criterion B - Associated with the lives of person significant in our past; or
- Criterion C - Embodies the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant distinguishable entity whose components may lack individual distinction; or
- Criterion D - Has yielded, or may be likely to yield, information important in prehistory or history

For this project, archival record searches were conducted utilizing the AZSITE cultural resource database only. Information derived from the AZSITE database does not encompass a complete list of cultural resources, since many portions of the Prescott and Coconino National Forest have not been surveyed. In general, the Verde Valley has a high density of cultural resources that have significant Tribal values that may impact potential transportation improvements. The AZSITE records search identified that the entire Verde Valley area study area has high density concentrations of prior cultural resources projects and/or cultural resource sites, particularly:

- SR 260 (Sierra Verde Road to Big Valley Drive)
- SR 260 (SR89 to MP 210)
- Finnie Flat Road (SR 260 to Main Street)
- Cottonwood (north of Broadway)
- SR 89A (Cottonwood to Jerome)
- SR 89 (MP 365 to MP 370)
- Upper Red Rock Loop Road (Sedona)
- I-17 (SR 260 to MP 293)

There are also numerous buildings, sites, districts, and structures listed in the NRHP and Arizona Register of Historic Places within the study area. Additionally, there may be additional historic properties that are pending evaluation/approval or the historic significance is yet unknown.

Recommendations for Further Analysis

As project planning progresses, additional cultural resources research and inventory will be required to identify impacts on cultural resources. Efforts to obtain specific eligibility criteria and to arrive at definitive eligibility assessments, including assessing whether the portions of eligible properties subject to potential effects are contributing or non-contributing, also is required. It is probable that an agreement document (a memorandum of agreement or a programmatic agreement) will be developed to demonstrate Section 106 compliance. When a preferred alternative is defined, the lead agency would need to determine what effect construction of that alternative will have on historic properties. The three possible effect determinations are "no historic properties affected," "no adverse effect," and "adverse effect."

Historic properties that are on or near the preferred alternative are not always subject to adverse effects. Various strategies can be employed to completely avoid effects or to ensure that effects are minimized and therefore not adverse. If it is determined that historic properties would be adversely affected, it would be necessary to identify mitigation measures to ameliorate those effects to the extent possible. Such measures can include data recovery of archaeological sites and documentation of historic buildings and structures. If adverse effects to cultural resources valued for in-place preservation (typically those determined eligible under Criteria A, B, or C) cannot be avoided, a Section 4(f) alternatives evaluation would be required to explore the potential for a prudent and feasible alternative that would not result in a Section 4(f) use.

When project alternatives and an area of potential effects (APE) have been identified, impacts on historic properties would need to be evaluated. In addition, it would be necessary to conduct cultural resource surveys, according to current Arizona State Museum guidelines, for all portions of the APE that have not been previously surveyed or that were surveyed 10 years or more prior.

SECTION 4(F) AND SECTION 6(F)

Section 4(f) of the US Department of Transportation Act of 1966 and the Section 6(f) of the Land and Water Conservation Fund (LWCF) Act are intended to protect the nation's recreational resources from significant transportation-related impacts. Section 4(f) stipulates that the FHWA and other DOT agencies cannot approve the use of land from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites unless there is no feasible alternative or the projects include all possible planning to minimize harm to the property. The "use" of Section 4(f) is defined in CFR Title 23, Part 771.135(p) as:

- When property is permanently incorporated into a transportation facility;
- When there is a temporary occupancy of land that is adverse in terms of the statute's preservation purpose; or
- When there is a constructive use of a Section 4(f) property. A constructive use of Section 4(f) resource occurs when the proximity impacts of a proposed project adjacent or nearby a Section 4(f) property results in a substantial impairment to the property's activities or features that qualify a resource for protection under Section 4(f).

A historic site is considered a Section 4(f) property if it is eligible for the National Register of Historic Places (NRHP) under Criterion A, B, or C if the site is associated with events that have made a significant contribution to the broad patterns of our history, associated with the lives of persons significant in our past, or embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work of a significant distinguishable entity whose components may lack individual distinction. Within the study are there are numerous existing and potential Section4 (f) properties including:

- 25 NRHP sites
- 34 existing public parks
- 47 existing schools
- 35 existing trailheads and over 342 miles of trails

Section 6(f), which refers to Section 6(f) (3) of the LWCF Act, requires that any property acquired or developed with LWCF assistance be maintained perpetually in public outdoor recreation use. The acquisition of a Section 6(f) property requires that the property be replaced in-kind, and only with the approval of the National Park Service. Dead Horse Ranch State Park and Slide Rock State Park have previously been awarded LWCF grants.

Recommendations for Further Analysis

Through further study in the DCR/NEPA phase of project development, the proposed improvements will need to be analyzed for Section 4(f) direct use, constructive use, and, if warranted, measures to minimize harm to planned recreation facilities in proximity to the construction areas. All properties recommended as "potential" Section 4(f) resources would require additional coordination with the local official having jurisdiction over each property in order to determine if the property is of local significance and if it would be affected by a proposed improvement. Historic properties that are potentially Section 4(f) resources require coordination with the official with jurisdiction, the State Historic Preservation Office (SHPO), and/or local preservation agencies to determine whether the resource is locally important or if the resource would be affected by a proposed improvement. In addition, if recreational lands that used LWCF funds could be impacted by proposed improvements, prior approval would be sought from the National Park Service and Arizona State Parks.

ENVIRONMENTAL JUSTICE (TITLE VI)

Title VI of the Civil Rights Act of 1964 and related statutes ensure that individuals are not excluded from participation in, denied the benefit of, or subjected to discrimination under any program or activity receiving federal financial assistance on the basis of race, color, national origin, age, sex, and disability. Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, dictates that programs, policies, and activities identify and address, as appropriate, disproportionately high adverse human health and environmental effects on minority and low-income populations. Protected populations considered in this analysis include: minority, elderly, low-income, and disabled populations. Detailed analysis of the environmental justice conditions based on Census 2010, American Community Survey (ACS) 2009-2013, and Census 2000 data can be found in *Working Paper 1: Existing Conditions*. Key findings noted in *Working Paper 1: Existing Conditions* include:

- *Minority Population:* Approximately 23.4% of the total population within the study area is minority. The Yavapai-Apache Nation has the highest percentage of minority population in the study area.
- *Population Age 65 and Older:* Within the study area, approximately 26.2% of the total population is over the age of 65, which is significantly higher than the Arizona statewide estimate of 13.8%. The Village of Oak Creek and the City of Sedona are traditionally referred to as retirement communities, which is evident by the high percent of population over 65 years of age.
- *Female Head of Households:* The highest percentage of households headed by a female with no husband present and with children under the age of 18 occurs in the Yavapai Apache Nation.
- *Below Poverty:* According to the 2009-2013 ACS approximately 16% of the study area's population is considered to be below the poverty level. The Yavapai-Apache Nation has the highest percentage of below poverty populations in the study area (48.0%).
- *Disabled Populations:* According to the 2000 U.S. Census, the place with the three highest disability percentages within the study area are Jerome (8.3%) followed by Cottonwood (5.8%), and Camp Verde (4.3%).

Recommendations for Further Analysis

The potential positive and negative effects on the protected populations should be discussed in the environmental analysis of the design phase. The environmental justice data should be updated during the preparation of the environmental document. Consideration should be given during the construction phase of project implementation on the impacts to minority-owned businesses, the mobility needs of the protected populations, and on residential parcels of protected populations. In addition, on-going outreach efforts need to be made to include meaningful participation by all residents, including low-income, disabled, below poverty and minority populations, throughout project development.

The following section presents the recommended Multimodal Transportation Improvement Plan that was developed in conjunction with ADOT, the VVTPO, and stakeholders. Projects are divided into near-, mid-, and long-term projects based on critical needs of the region and input from stakeholders. **The Improvement Plan is intended to serve as a guide for future planning and programming and unless otherwise noted projects are not yet funded.** Together these projects will strengthen the study area's existing roadway network; provide a network of pedestrian, bicycle, and transit facilities; support economic development; and improve safety and operations.

ROADWAY IMPROVEMENT RECOMMENDATIONS

Near-Term Improvements

Near-term projects are typically projects needed to address the most critical needs and deficiencies and have a reasonable potential for obtaining funding. Table 8.1 presents a comprehensive list of the transportation recommendations for this phase, as well as the project number, location, and description each project. *Each project is assigned a unique project number; project numbering does not represent the priority of the project but rather it is an identification number to track project progress. Unless otherwise noted, funding has not been secured for additional studies, design, purchase of right-of-way, or construction. As each project progresses into the concept and design phase, close coordination with the Prescott and Coconino Forests should occur to assess if there are available solutions on non-federal land. All federally funded projects are also subject to the National Environmental Policy Act (NEPA) process, which identifies projects potential environmental impacts and ensures that subsequent mitigation measures are addressed and implemented appropriately through construction. Planning level cost estimates were developed based on typical per-mile/foot construction costs. Estimated costs for each project are expressed in 2015 dollars and do not include costs associated with right-of-way acquisitions, design, utility relocation, environmental clearance, etc. Actual costs for projects could vary at the time of implementation; therefore, a detailed analysis should be performed on a case-by-case basis to determine actual costs. Unless otherwise noted, the recommended projects are not yet funded.*

Table 8.1: Recommended Near-Term Improvement Projects

ID	Project Location and Description	Project Benefits	Cost Estimate
Bridge Improvement Projects			
Arizona Department of Transportation			
N-1	**I-17 (MP 293.3) - Bridge #652 (Cornville Rd)** Replace bridge *Projected funded (Tracs H863201C)*	Upgrades structurally deficient bridge to national standards; improves safety	$3,500,000
N-2	**SR 179 (MP 302.5) - Bridge #736 (Dry Beaver Creek)** *Rehabilitate bridge*	Prevents increased deterioration; extends life of bridge; improves safety	$800,000
N-3	**SR 89A (MP 375.66) - Bridge #232 (Wilson Canyon)** *Rehabilitate bridge*	Prevents increased deterioration; extends life of bridge; improves safety	$800,000
N-4	**SR 260 (MP 215.05) - Bridge #966 (Cherry Creek)** *Rehabilitate bridge*	Prevents increased deterioration; extends life of bridge; improves safety	$800,000
Yavapai County			
N-5	**Cornville Rd - Bridge #9100 (Oak Creek)** *Rehabilitate bridge*	Prevents increased deterioration; extends life of bridge; improves safety	$800,000

Table 8.1: Recommended Near-Term Improvement Projects (Continued)

ID	Project Location and Description	Project Benefits	Cost Estimate
Intersection Safety Improvements			
Arizona Department of Transportation			
N-6	**State Route 89A/State Route 260** Conduct a traffic study to evaluate performance and operation of intersection. Study should also: – *Evaluate traffic control options - signal vs roundabout; identify alternate routes to reroute traffic to reduce intersection congestion*	Improves intersection operation and safety; reduces congestion	$75,000
N-7	**State Route 89A/State Route 179** Conduct a traffic study to evaluate performance and operation of intersection. Study should also: – *Assess the need for channelized right turns at the roundabouts; identify methods to slow down approaching traffic; Identify alternate routes to reroute traffic to reduce intersection congestion*	Improves intersection operation and safety; reduces congestion	$75,000
N-8	**State Route 260/Fir St** Conduct a traffic study to evaluate performance and operation of intersection. Study should also: – *Evaluate need to reduce speed limit on SR 260; modify signal phasing to safely accommodate pedestrians and left turn movements*	Improved intersection safety and operation	$30,000
N-9	**State Route 89A/Cornville Rd** Conduct a traffic study to evaluate performance and operation of intersection. Study should also: – *Evaluate need to reduce speed limits on State Route 89A and Cornville Rd at the intersection approaches; install appropriate signage on Cornville Rd to warn drivers of approaching intersection*	Improved intersection safety and operation	$30,000
N-10	**Interstate 17/Cornville Rd** Upgrade signage to provide clear directions to motorists	Improves intersection safety	$10,000
N-11	**State Route 179/Beaverhead Flat Rd**	Increases driver visibility; improves intersection safety	$10,000
N-11.1	*Conduct Traffic Signal Warrant study to confirm if the intersection meets signal warrants*		
N-11.2	*Remove roadside vegetation to increase sight distance*		
Corridor Safety Improvements			
Arizona Department of Transportation			
N-12	**Intelligent Transportation Systems (ITS) Assessment** *Conduct an assessment to determine the feasibility and potential locations for dynamic message signboard (DMS) or variable message signboards (VMS). The ADOT I-17 Corridor Profile Study recommended sign placements at MP 297.4(SB), MP289 (NB) MP 303.4 (NB) and MP 305.0 (NB). Additional locations for potential message boards include: I-17 at MP 286.0 (NB), I-17 at MP 301.0 (SB), SR 260 at MP 216.0, and SR 179 at MP 301.0.*	Disseminates traffic condition, travel time information, weather, and emergency warnings to motorists	$50,000

Table 8.1: Recommended Near-Term Improvement Projects (Continued)

ID	Project Location and Description	Project Benefits	Cost Estimate
Corridor Safety Improvements			
Arizona Department of Transportation			
N-13	**State Route 89A: MP 334.0 - MP 346.0** Conduct a Roadway Safety Assessment (RSA) to develop safety related improvement strategies	Identifies improvements to address corridor safety issues such as geometry, signage, etc.	$30,000
N-14	**SR 89A: Cornville Rd - MP 368.3 Red Rock Loop Rd** Conduct a Roadway Safety Assessment (RSA) to develop safety related improvement strategies	Identifies improvements to address corridor safety issues such as geometry, signage, etc.	$25,000
N-15	**SR 179: I-17 - Verde Valley School Rd** Conduct a Roadway Safety Assessment (RSA) to develop safety related improvement strategies	Identifies improvements to address corridor safety issues such as geometry, signage, etc.	$20,000
N-16	**SR 89A: Mingus Avenue - SR 260** Conduct an access management assessment to identify improvement scenarios	Identifies improvements to address corridor safety issues such as geometry, signage, etc.	$50,000
N-17	**SR 89A: Red Rock Loop Road to Uptown Sedona** Conduct an access management assessment to identify improvement scenarios	Identifies improvements to address corridor safety especially pedestrian and bicyclist safety	$60,000
Yavapai County			
N-18	**Cornville Rd: SR 89A - Page Springs Rd** Conduct a Roadway Safety Assessment (RSA) to develop safety related improvement strategies	Identifies improvements to address corridor safety issues such as geometry, signage, etc.	$20,000
Shoulder Improvements			
Arizona Department of Transportation			
N-19	**State Route 89A: MP 346.6 - MP 349.0** *Widen shoulders from 1 FT to 5 FT*	Increase safety for all modes; improve emergency response	$724,500
N-20	**State Route 89A: MP 374.0 - MP 376.0** *Widen shoulders from 1 FT to 5 FT*	Increase safety for all modes; improve emergency response	$690,000
Yavapai County			
N-21	**Cornville Rd: SR 89A - Tissaw Road and Aspaas Road - I-17** *Widen shoulders from 0 FT to 5 FT*	Increase safety for all modes; improve emergency response	$4,132,500
Local Jurisdiction			
N-22	**Montezuma Castle Highway: Finnie Flat Rd to I-17** *Widen shoulders from 0 FT to 5 FT*	Increase safety for all modes; improve emergency response	$1,392,000
N-23	**Camino Real: Donner Trl to Arrowhead Ln** *Widen shoulders from 0 FT to 5 FT*	Increase safety for all modes; improve emergency response	$348,000
Roadway Surface Treatment Improvements			
Arizona Department of Transportation			
N-24	**State Route 89A: 6th Street - MP 355.7** *Major pavement rehabilitation*	Extends life of existing infrastructure	$1,881,000
N-25	**State Route 179: I-17 - MP 304.7** *Major pavement rehabilitation*	Extends life of existing infrastructure	$2,465,000
N-26	**State Route 89A: MP 375.0 - MP 376.0** *Major pavement rehabilitation*	Extends life of existing infrastructure	$425,000
N-27	**State Route 89A: MP 343.3 - MP 348.6** *Major pavement rehabilitation*	Extends life of existing infrastructure	$765,000

Table 8.1: Recommended Near-Term Improvement Projects (Continued)

ID	Project Location and Description	Project Benefits	Cost Estimate
Roadway Surface Treatment Improvements			
Yavapai County			
N-28	**Verde Valley School Rd: Red Rock Cove Dr - End of Pavement** *Major pavement rehabilitation*	Extends life of existing infrastructure	$1,020,000
N-29	**Beaver Creek Road: Montezuma Well Road to Ranger Road** *Improve roadway surface conditions by applying unpaved road treatments that provide for a much stable and smoother surface and reduce dust emissions*	Provides alternative/emergency route to Lake Montezuma; reduces dust emissions; improves roadway conditions; minimizes impacts to National Forest Land	$255,000
Local Jurisdiction			
N-30	**Cottonwood major pavement rehabilitation**	Extends life of existing infrastructure	$4,250,000
N-30.1	*Broadway: 0.5mi west of Bill Gray Rd - SR 89A*		
N-30.2	*Mingus Ave: SR 89A - 18th St*		
N-30.3	*Black Hills Dr: SR 89A - 0.9mi west of SR 89A*		
N-30.4	*Fir St: Chuckwalla St - Willard St*		
N-30.5	*Willard St: SR 89A - Mingus Ave*		
N-30.6	*Old State Highway 279: Rio Mesa Trail - Ogden Ranch Rd*		
N-31	**Old State Highway SR 279**	Upgrades roadway to continuous paved corridor; provides access to proposed developments	$722,500
N-31.1	SR 260 to Aultman Pkwy *Major pavement rehabilitation*		
N-31.2	Aultman Pkwy to Clover Ranch Rd *Pave unpaved roadway*		
N-31.3	SR 260 to Clover Ranch Road *Major pavement rehabilitation*		
N-32	**Old State Highway 279: Camino Real - SR 260** *Pave unpaved roadway*	Provides additional access	$2,249,500
Roadway Capacity Improvements			
Arizona Department of Transportation			
N-33	**SR 260: Thousand Trails Rd to I-17** *Widen to four lane roadway* *Projected funded (Tracs H869901C)*	Increases capacity; improves corridor safety; improves intersection safety	$52,000,000
Camp Verde			
N-34	**Finnie Flat Road: SR 260 to Main Street** *Widen roadway to a four lane arterial roadway (Complete Streets CS # 2) with bike lanes and sidewalk in both directions. Install center turn lane or median with left-turn pockets where feasible.*	Improves safety for all modes; improves corridor safety; encourages economic development	$2,795,000
Cottonwood			
N-35	**Broadway Road: Main Street (Cottonwood) to Main Street (Clarkdale)** *Upgrade to major collector (Complete Streets CS # 1) with bike lanes and sidewalks in both directions. Install center turn lane or median with left-turn pockets where feasible.*	Improves corridor safety; improve pedestrian and bicycle mobility; encourage economic development	$332,800

Table 8.1: Recommended Near-Term Improvement Projects (Continued)

ID	Project Location and Description	Project Benefits	Cost Estimate
Roadway Capacity Improvements			
Cottonwood			
N-36	**West Loop Phase 1: Black Hills Drive to Fir Street** *Construct two-lane minor collector (Complete Streets CS # 1) with bike lanes and sidewalks in both directions. Install center turn lane or median with left-turn pockets where feasible. Extend Black Hills Drive and Mingus Avenue to connect with West Loop Road.*	Increases mobility and circulation; provides access to Yavapai College; provides additional pedestrian and bicycle facilities	$4,294,500
N-37	**Groseta Ranch Road: SR 89A to North Main Street** *Pave roadway to be a two lane minor collector (Complete Streets CS # 1) with bike lanes and sidewalks in both directions. Install center turn lane or median with left-turn pockets where feasible.*	Increases mobility and circulation; provides additional pedestrian and bicycle facilities	$3,676,500
N-38	**Mingus Avenue: North Main Street to Willard Street** *Upgrade roadway to an arterial (Complete Streets CS # 1) with bike lanes and sidewalks in both directions. Install center turn lane or median with left-turn pockets where feasible.*	Upgrades corridor to provide safe facilities for all modes; improves corridor safety; encourages economic development	$128,000
N-39	**Main Street: SR 89A to Mingus Avenue** *Upgrade roadway to an arterial (Complete Streets CS # 2) with bike lanes and sidewalks in both directions. Install center turn lane or median with left-turn pockets where feasible.*	Upgrades corridor to provide safe facilities for all modes; improves corridor safety; encourages economic development	$102,400
N-40	**Fir Street Extension: SR 260 to SR 89A** *Extend Fir Street to SR 89A as a four lane minor collector roadway*	Redirects traffic away from SR 260/SR 89A intersection	$1,345,500
N-41	**Tissaw Road: Cornville Road to SR 89A** *Coordinate with developer to construct a four lane major collector roadway. This project is recommended to be constructed as development occurs at the northwest corner of the Cornville Road/SR 89A intersection*	Increases access to planned development; reduce congestion on Cornville Road	$5,830,500
Sedona			
N-42	**Brewer Road - Ranger Road Connection** *Upgrade Brewer Rd and Ranger Rd segments to one lane minor collector roadway. Install clearly visible signage to direct SR 89A Eastbound and to SR 179 Northbound traffic to use connection to avoid SR 89A / SR 179 intersection*	Redirects traffic away from SR 89A/SR 179 intersection	$25,600
N-43	**Schnebly Hill Rd - SR 179 to I-17** *Conduct a study to evaluate upgrading the corridor to a paved two lane roadway. The study should include:* *- Traffic demand analysis, evaluation of constructability, and environmental impacts analysis*	Provides alternate route from Sedona to I-17 and Flagstaff	$200,000
N-44	**Red Rock Crossing** *Conduct a feasibility study for a new connection from SR 179 to west Sedona. The study should include:* *- Evaluation of Oak Creek crossing locations, future traffic demand analysis, and environmental assessment*	Serves as a local SR 89A/SR 179A bypass; improves connectivity from Village of Oak Creek and West Sedona; improves emergency access	$100,000
Yavapai County			
N-45	**Beaver Creek Rd: Montezuma Ave to Montezuma Well Rd** *Upgrade functional classification to Major Collector*	Upgrades corridor to provide safe facilities for all modes; improves corridor safety; encourages economic development	N/A

Figure 8.1: Recommended Near-Term Improvement Projects

Project #N-1: I-17 (MP 293.3) - Bridge #652 (Cornville Rd)

Location Description:	Two-lane overpass over I-17; constructed in 1961; 257 FT in length; four span steel stringer/multi-beam structure		
Responsible Agency:	ADOT and Yavapai County		
Project Length:	257 FT		
Adjacent Land Owner:	Private Land		
Number of Lanes	2 lanes	**Speed Limit:**	35 mph
Functional Classification:	Major Collector		



Existing and Future Conditions

Existing ADT	~7,600	**Existing LOS:**	LOS D
2040 ADT	~12,100	**2040 LOS:**	LOS F

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	None occurred on the bridge		
Fatal Crashes:	N/A	**Injury Crashes:**	N/A

Project Description

ID	Location	Improvement	Cost Estimate
1.1	I-17 (MP 293.3) - Bridge #652 (Cornville Rd)	Replace bridge	$3,500,000

Purpose and Need

Structure #652 is located at the McGuireville Traffic Interchange over I-17. This critically important structure provides the only access from Lake Montezuma residents to access I-17 southbound and Cornville Road. Listed in the Arizona State Highway Bridge Inventory as having a sufficiency rating of 42.6, the bridge is structurally deficient that requires repair. The purpose of the project is to repair the bridge in order to meet structural standards and to improve safety for the traveling public.

Project Benefits

1) Upgrades structurally deficient bridge to meet federal standards; 2) extends the life of current facilities; 3) improves safety for the traveling public

Environmental Impacts

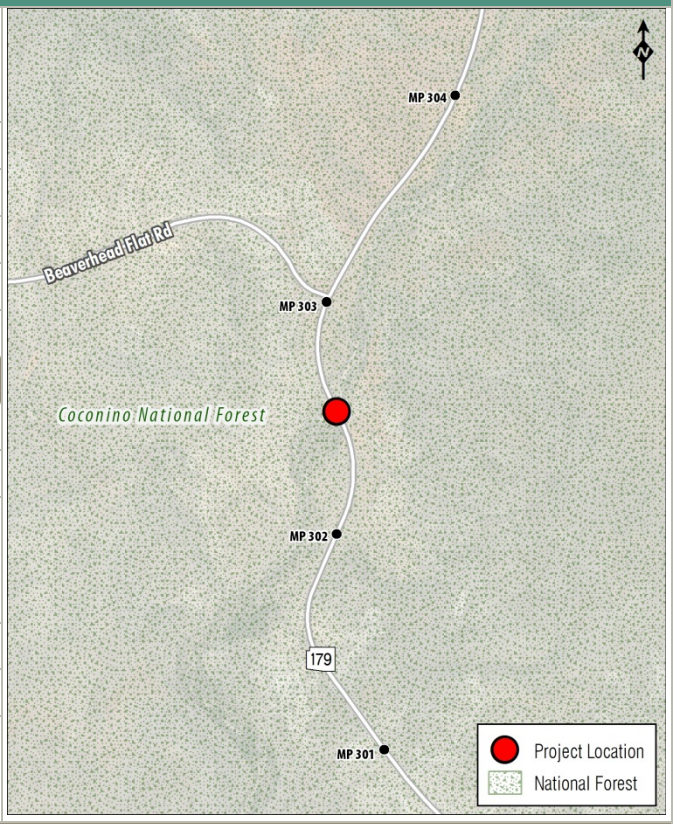
Improvements are located at an existing interchange; therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, projected species, wildlife linkages, and cultural resources. Additionally, effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies to ensure improvements align with local and regional transportation goals.

Project #N-2: SR 179 (MP 302.5) - Bridge #736 (Dry Beaver Creek)

Location Description:	Two-lane state highway; constructed in 1962; 166 FT in length; three span steel stringer/multi-beam structure		
Responsible Agency:	ADOT		
Project Length:	166 FT		
Adjacent Land Owner:	Coconino National Forest		
Number of Lanes	2 lanes	**Speed Limit:**	35 mph
Functional Classification:	Major Collector		



Existing and Future Conditions

Existing ADT	~7,700	**Existing LOS:**	LOS B
2040 ADT	~12,000	**2040 LOS:**	LOS C

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	1		
Fatal Crashes:	0	**Injury Crashes:**	0

Project Description

ID	Location	Improvement	Cost Estimate
2.1	*SR 179 (MP 302.5) - Bridge #736 (Dry Beaver Creek)*	*Rehabilitate bridge*	$800,000

Purpose and Need

Due to its scenic quality, SR 179 is designated as an All-American Road that is a critical regional corridor that links I-17 major tourist attractions in the City of Sedona. The corridor experiences high traffic volumes and vehicle speeds. Listed as functionally obsolete in the Arizona State Highway Bridge Inventory, the bridge requires rehabilitation due to the structures substandard load carrying capacity. The purpose of the project is to repair the bridge in order to meet structural standards and to improve safety for the traveling public.

Project Benefits

1) Rehabilitates the bridge to meet federal standards; extends the life of current facilities; 2) improves safety for the traveling public

Environmental Impacts

Improvements are located at an existing structure; therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, projected species, wildlife linkages, and cultural resources. Additionally, effort should be made to limit the impacts on Title VI populations during construction. As the project progresses, coordination should occur with the Coconino National Forest to assess negative impacts on the natural environment and to develop mitigation measures.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies to ensure improvements align with local and regional transportation goals.

Additional Comments

Project is located on a major bicycle corridor.

Project #N-3: SR 89A (MP 375.66) - Bridge #232 (Wilson Canyon)

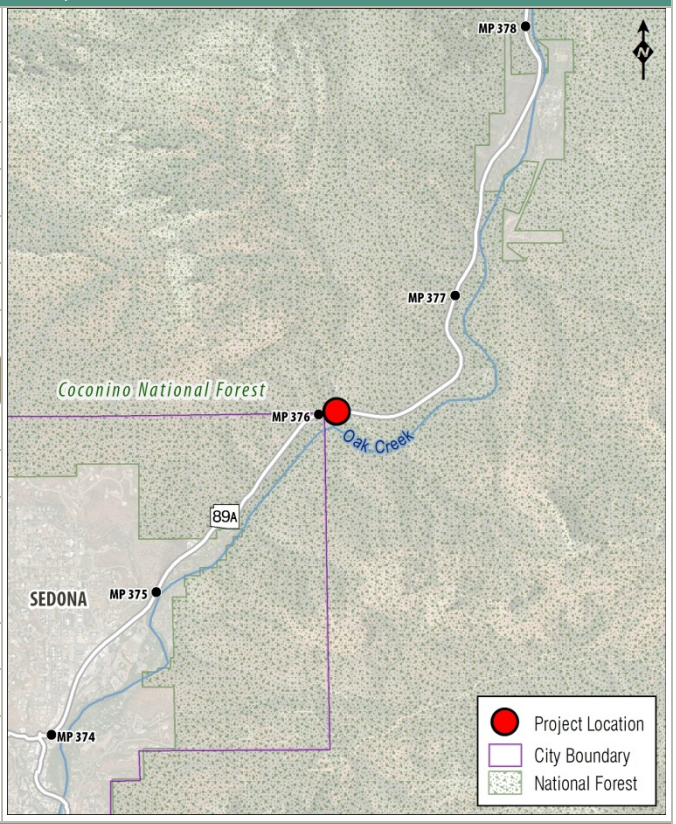
Location Description:	Two-lane state highway; constructed in 1938; 374 FT in length; steel deck arch		
Responsible Agency:	ADOT		
Project Length:	374 FT		
Adjacent Land Owner:	Coconino National Forest		
Number of Lanes	2 lanes	**Speed Limit:**	40 mph
Functional Classification:	Principal Arterial		

Existing and Future Conditions

Existing ADT	~5,000	**Existing LOS:**	LOS A
2040 ADT	~7,600	**2040 LOS:**	LOS B

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	None occurred on the bridge		
Fatal Crashes:	N/A	**Injury Crashes:**	N/A



Project Description

ID	Location	Improvement	Cost Estimate
3.1	*SR 89A (MP 375.66) - Bridge #232 (Wilson Canyon)*	*Rehabilitate bridge*	$800,000

Purpose and Need

Located in Oak Creek Canyon, Structure #232 is located on one of the mostly heavily utilized scenic routes in Arizona. This critical corridor experiences high traffic volumes and can experience heavy congestion, particularly during the tourist season. Listed as functionally obsolete in the Arizona State Highway Bridge Inventory, the bridge requires rehabilitation due to the structures substandard load carrying capacity. The purpose of the project is to repair the bridge in order to meet structural standards and to improve safety for the traveling public.

Project Benefits

1) Rehabilitates the bridge to meet federal standards; 2) extends the life of current facilities; 3) improves safety for the traveling public

Environmental Impacts

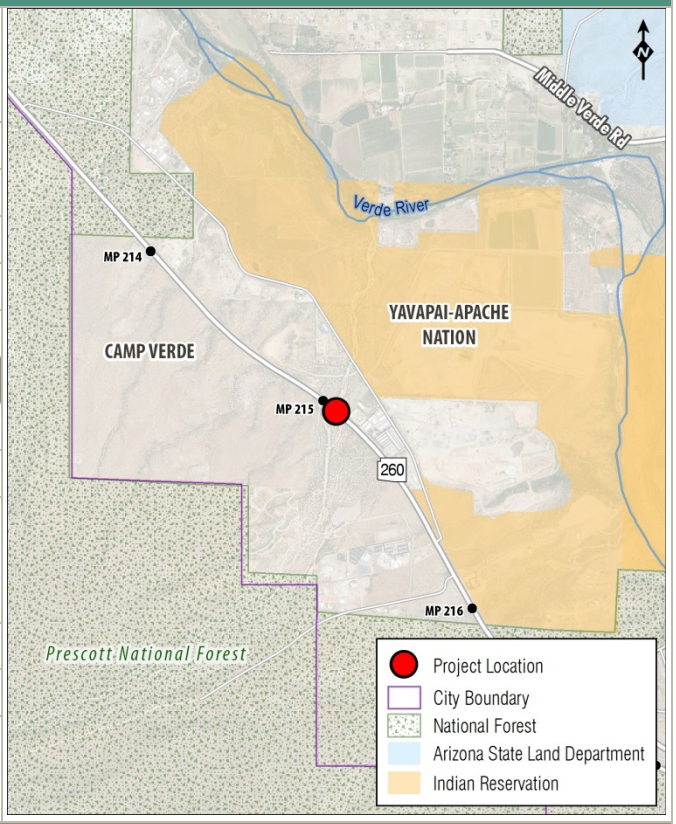
Listed in the National Register of Historic Places, coordination needs to occur with the State Historic Preservation Officer, ADOT, Coconino National Forest, and Coconino County to develop a preservation plan for the structure. Consideration should be given to impacts on the natural environment, projected species, wildlife linkages, and cultural resources. As the project progresses, coordination should occur with the Coconino National Forest to assess negative impacts on the natural environment and to develop mitigation measures.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies to ensure improvements align with local and regional transportation goals.

Project #N-4: SR 260 (MP 215.05) - Bridge #966 (Cherry Creek)

Location Description:	Two-lane state highway; constructed in 1967; 202 FT in length; seven span concrete slab structure		
Responsible Agency:	ADOT		
Project Length:	202 FT		
Adjacent Land Owner:	Private Land		
Number of Lanes	2 lanes	**Speed Limit:**	55 mph
Functional Classification:	Principal Arterial		



Existing and Future Conditions

Existing ADT	~16,100	**Existing LOS:**	LOS C
2040 ADT	~29,600	**2040 LOS:**	LOS C

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	None occurred on the bridge		
Fatal Crashes:	N/A	**Injury Crashes:**	N/A

Project Description

ID	*Location*	*Improvement*	*Cost Estimate*
4.1	*SR 260 (MP 215.05) - Bridge #966 (Cherry Creek)*	*Rehabilitate bridge*	$800,000

Purpose and Need

Structure #966 is located on SR 260, a major regional corridor that connects I-17/Camp Verde to Cottonwood and SR 89A. The corridor experiences high traffic volumes and vehicle speeds. If the structure fails commuter and tourist traffic between Cottonwood and I-17/Camp Verde would need to utilize an alternative route, which may increase travel time. Listed in the Arizona State Highway Bridge Inventory as having a sufficiency rating of 59.9, the structure requires rehabilitation to improve its condition. The purpose of this project is to repair the bridge in order to meet bridge sufficiency standards.

Project Benefits

1) Rehabilitates the bridge to meet federal standards; 2) extends the life of current facilities; 3) improves safety for the traveling public

Environmental Impacts

Improvements are located at an existing structure; therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, projected species, wildlife linkages, and cultural resources. Additionally, effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies to ensure improvements align with local and regional transportation goals.

Project #N-5: Cornville Rd - Bridge #9100 (Oak Creek)

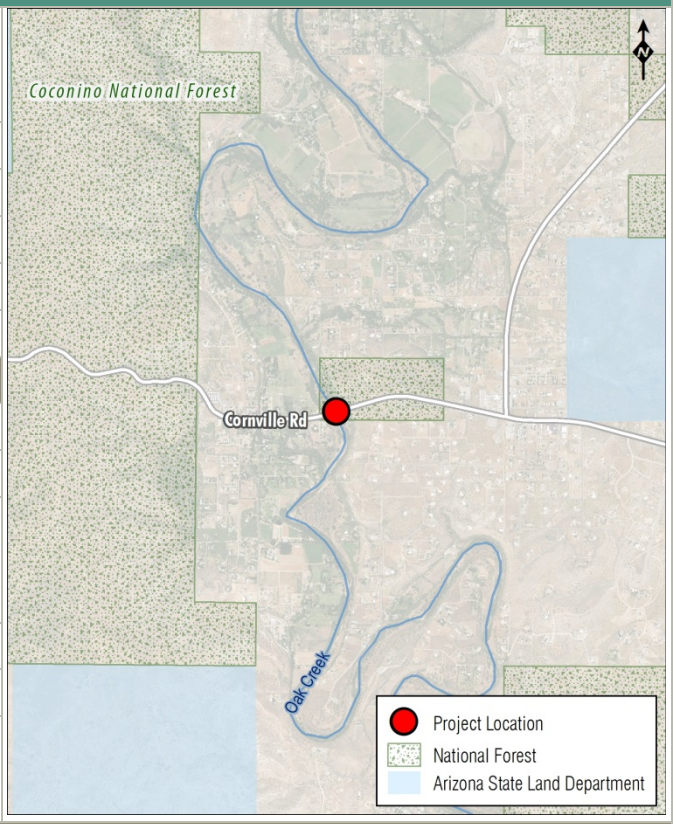
Location Description:	Two-lane state highway; constructed in 1962; 348 FT in length; four span steel stringer/multi-beam structure		
Responsible Agency:	Yavapai County		
Project Length:	348 FT		
Adjacent Land Owner:	Coconino National Forest, Private Land		
Number of Lanes	2 lanes	**Speed Limit:**	25 mph
Functional Classification:	Major Collector		

Existing and Future Conditions

Existing ADT	~7,300	**Existing LOS:**	LOS D
2040 ADT	~7,800	**2040 LOS:**	LOS D

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	None occurred on the bridge		
Fatal Crashes:	N/A	**Injury Crashes:**	N/A



Project Description

ID	Location	Improvement	Cost Estimate
5.1	Cornville Rd - Bridge #9100 (Oak Creek)	Rehabilitate bridge	$800,000

Purpose and Need

Structure #9100 is located on Cornville Road, a major regional corridor that connects I-17 to SR 89A and the Cornville area. Cornville Road is also heavily utilized by tourists visiting the Verde Valley vineyards in Cornville. If the structure fails residents and visitors to Cornville Road would need to use an alternative route, which may increase congestion on routes. Listed in the Arizona State Highway Bridge Inventory as having a sufficiency rating of 64.9, the structure requires rehabilitation to improve its condition. The purpose of this project is to repair the bridge in order to meet bridge sufficiency standards.

Project Benefits

1) Rehabilitates the bridge to meet federal standards; 2) extends the life of current facilities; 3) improves safety for the traveling public

Environmental Impacts

Improvements are located at an existing structure; therefore, environmental impacts are minimal. As the project progresses, consideration needs to be given to the impacts of the corridor on National Forest Land, biological and riparian habitats along Oak Creek, drainage and soil erosion. Coordination should occur with the Coconino National Forest to assess negative impacts on the natural environment and to develop mitigation measures.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies to ensure improvements align with local and regional transportation goals.

Project #N-6: SR 89A/SR 260

Location Description:	Signalized intersection at SR 260/SR 89A intersection; pedestrian facilities with street lighting; exclusive left-turn lanes		
Responsible Agency:	ADOT		
Project Length:	N/A		
Adjacent Land Owner:	Private Land, City of Cottonwood		
Number of Lanes	5 lanes	**Speed Limit:**	35-45 mph
Functional Classification:	Principal Arterial		



Existing and Future Conditions

Existing ADT	~ 25,400	**Existing LOS:**	LOS C
2040 ADT	~39,800	**2040 LOS:**	LOS D

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	143		
Fatal Crashes:	0	**Injury Crashes:**	16

Project Description

ID	*Location*	*Improvement*	*Cost Estimate*
6.1	*SR 89A/SR 260 Intersection*	*Conduct a traffic study to evaluate performance and operation of intersection. Study should also: evaluate traffic control options - signal vs roundabout; identify alternate routes to reroute traffic to reduce intersection congestion*	$75,000

Purpose and Need

The SR 89A/SR 260 intersection is a critical intersection centrally located along Cottonwood's commercial corridors. As one of the busiest intersections in the Verde Valley, the intersection experiences significant congestion and vehicle crashes (particularly rear-end crashes). The purpose of this project is to conduct an intersection specific study that: 1) evaluates operational and safety issues; 2) evaluate traffic control options (traffic signal or roundabout); 3) identifies alternate routes to reroute traffic to reduce intersection congestion

Project Benefits

1) Improved motor vehicle, pedestrian, bicyclist safety conditions; 2) improved intersection performance; 3) enhanced streetscaping potential

Environmental Impacts

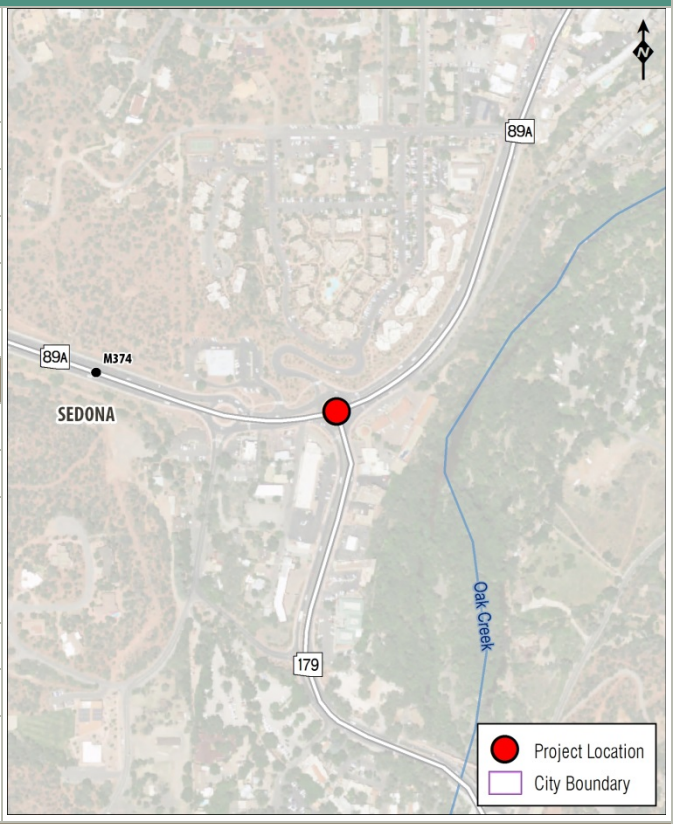
Recommended improvements developed as part of the study will occur at an existing intersection; therefore, environmental impacts are minimal. Consideration should be given to impacts on utilities, hazardous material sites, and noise receptors. Additionally, effort should be made to limit the impacts on Title VI populations during construction of recommended improvements.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies to ensure improvements align with local and regional transportation goals.

Project #N-7: SR 89A/SR 179

Location Description:	Two-lane roundabout at SR 89A/SR179 intersection; pedestrian facilities with street lighting present		
Responsible Agency:	ADOT		
Project Length:	N/A		
Adjacent Land Owner:	Private Land, City of Sedona		
Number of Lanes	4 lanes	**Speed Limit:**	25-40 mph
Functional Classification:	Principal Arterial		



Existing and Future Conditions

Existing ADT	~21,800	**Existing LOS:**	LOS C
2040 ADT	~28,500	**2040 LOS:**	LOS D

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	151		
Fatal Crashes:	0	**Injury Crashes:**	8

Project Description

ID	Location	Improvement	Cost Estimate
7.1	*SR 89A/SR 179 Intersection*	*Conduct a traffic study to evaluate performance and operation of intersection. Study should also: assess the need for channelized right turns at the roundabouts; identify methods to slow down approaching traffic; identify alternate routes to reroute traffic*	$75,000

Purpose and Need

Otherwise known as the "Y-intersection", the SRA 89A/SR 179 intersection in Sedona is one of the busiest intersections in the Verde Valley. All local and regional traffic traveling through Sedona must utilize this intersection, which can cause significant congestion issues. Additionally, the intersection has a high number of vehicle crashes, particularly sideswipe crashes. The purpose of this project is to conduct an intersection specific study that: 1) identifies alternate routes to reroute traffic to reduce intersection congestion; 2) identifies travel demand management strategies; 3) assess the need for channelized right turns at the roundabouts; 4) identifies methods to slow down approaching traffic.

Project Benefits

1) Improved motor vehicle, pedestrian, bicyclist safety conditions; 2) improved intersection performance; 3) reduced turning movement conflicts

Environmental Impacts

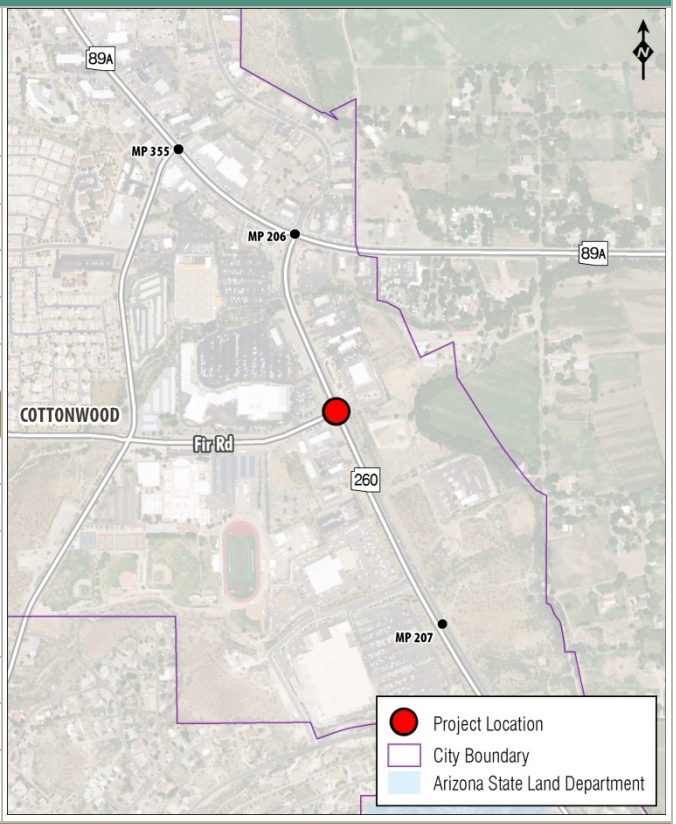
Recommended improvements developed as part of the study will occur at an existing intersection; therefore, environmental impacts are minimal. Consideration should be given to impacts on utilities, hazardous material sites, and noise receptors. Additionally, effort should be made to limit the impacts on Title VI populations during construction of recommended improvements.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies to ensure improvements align with local and regional transportation goals.

Project #N-8: SR 260/Fir St

Location Description:	Signalized intersection at SR 260/Fir Street intersection; pedestrian facilities with street lighting; exclusive left-turn lanes		
Responsible Agency:	ADOT		
Project Length:	N/A		
Adjacent Land Owner:	Private Land, City of Cottonwood		
Number of Lanes	3-5 lanes	**Speed Limit:**	25-45 mph
Functional Classification:	Principal Arterial and Major Collector		



Existing and Future Conditions

Existing ADT	~27,200	**Existing LOS:**	LOS C
2040 ADT	~43,800	**2040 LOS:**	LOS D

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	63		
Fatal Crashes:	1	**Injury Crashes:**	14

Project Description

ID	Location	Improvement	Cost Estimate
8.1	*SR 260/Fir St Intersection*	*Conduct a traffic study to evaluate performance and operation of intersection. Study should also: evaluate need to reduce speed limit on SR 260; modify signal phasing to safely accommodate pedestrians and left turn movements*	$30,000

Purpose and Need

The Fir Street/SR 260 intersection is a critical intersection that provides access to shopping centers and the Mingus Mountain High School. As one of the busiest intersections in Cottonwood, the intersection experiences heavy bottlenecking during AM, lunch, and PM periods due to students and parents accessing the school. The purpose of this project is to conduct an intersection specific study that: 1) evaluates operational and safety issues; 2) analyze signal phasing modifications; 3)

Project Benefits

1) Improved motor vehicle, pedestrian, bicyclist safety conditions; 2) improved intersection performance; 3) improved safety for school buses and students

Environmental Impacts

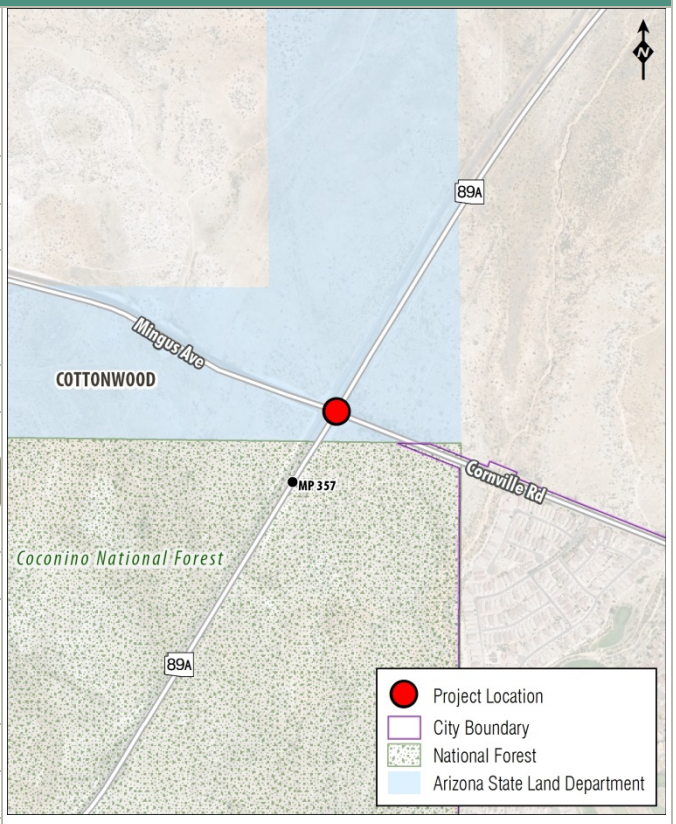
Recommended improvements developed as part of the study will occur at an existing intersection; therefore, environmental impacts are minimal. Consideration should be given to impacts on utilities, hazardous material sites, and noise receptors. Additionally, effort should be made to limit the impacts on Title VI populations during construction of recommended improvements.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies to ensure improvements align with local and regional transportation goals.

Project #N-9: SR 89A/Cornville Rd

Location Description:	Signalized intersection with exclusive left-turn lanes; master plan community and 118 acre commercial area planned northeast of intersection		
Responsible Agency:	ADOT		
Project Length:	N/A		
Adjacent Land Owner:	Arizona State Land Department, Coconino National Forest, City of Cottonwood		
Number of Lanes	2-4 lanes	**Speed Limit:**	45-55 mph
Functional Classification:	Principal Arterial and Major Collector		



Existing and Future Conditions

Existing ADT	~21,600	**Existing LOS:**	LOS C
2040 ADT	~35,200	**2040 LOS:**	LOS D

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	26		
Fatal Crashes:	1	**Injury Crashes:**	7

Project Description

ID	Location	Improvement	Cost Estimate
9.1	*SR 89A/Cornville Rd Intersection*	*Conduct a traffic study to evaluate performance and operation of intersection. Study should also: evaluate need to reduce speed limits on State Route 89A and Cornville Rd at the intersection approaches; install appropriate signage on Cornville Rd to warn drivers of approaching intersection*	$30,000

Purpose and Need

The SR 89A/Cornville Road intersection is a critical intersection that provides access to residential areas along Cornville Road. Currently, the intersection experiences a high congestion and a significant number of crashes. Planned developments along Cornville Road will only add to the already congested intersection. The purpose of this project is to conduct an intersection specific study that: 1) evaluates operational and safety issues; 2) analyzes signage needs; 3) improves motor vehicle, pedestrian, and bicyclist safety conditions

Project Benefits

1) Improved motor vehicle, pedestrian, bicyclist safety conditions; 2) improved intersection performance; 3) develop solution scenarios to accommodate future traffic

Environmental Impacts

Recommended improvements developed as part of the study will occur at an existing intersection; therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, projected species, wildlife linkages, and cultural resources. Additionally, effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies to ensure improvements align with local and regional transportation goals.

Project #N-10: I-17/Cornville Rd

Location Description:	Overpass on the interstate that serves traffic between Phoenix and Flagstaff, as well as tourist and commuter traffic within the Verde Valley		
Responsible Agency:	ADOT		
Project Length:	N/A		
Adjacent Land Owner:	Private Land		
Number of Lanes	2 lanes	**Speed Limit:**	35 mph
Functional Classification:	Major Collector		



Existing and Future Conditions

Existing ADT	~7,600	**Existing LOS:**	LOS D
2040 ADT	~12,100	**2040 LOS:**	LOS F

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	25		
Fatal Crashes:	0	**Injury Crashes:**	5

Project Description

ID	Location	Improvement	Cost Estimate
10.1	I-17/Cornville Rd Intersection	Upgrade signage to provide clear directions to motorists	$10,000

Purpose and Need

This critically important interchange connects regional and local traffic to Cornville Road, Lake Montezuma, and the Montezuma Well National Monument. The interchange's geometric configuration is confusing to tourists and limited sight distance causes safety issues. The purpose of the project is to upgrade the signage at the interchange to provide motorists with clear directions to major attractions and communities.

Project Benefits

1) Improves safety for the traveling public; 2) directs motorists to major activity centers and communities; 3) improves traffic flow

Environmental Impacts

Improvements are located at an existing interchange; therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, projected species, wildlife linkages, and cultural resources. Additionally, effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies to ensure improvements align with local and regional transportation goals.

Project #N-11: SR 179/Beaverhead Flat Rd

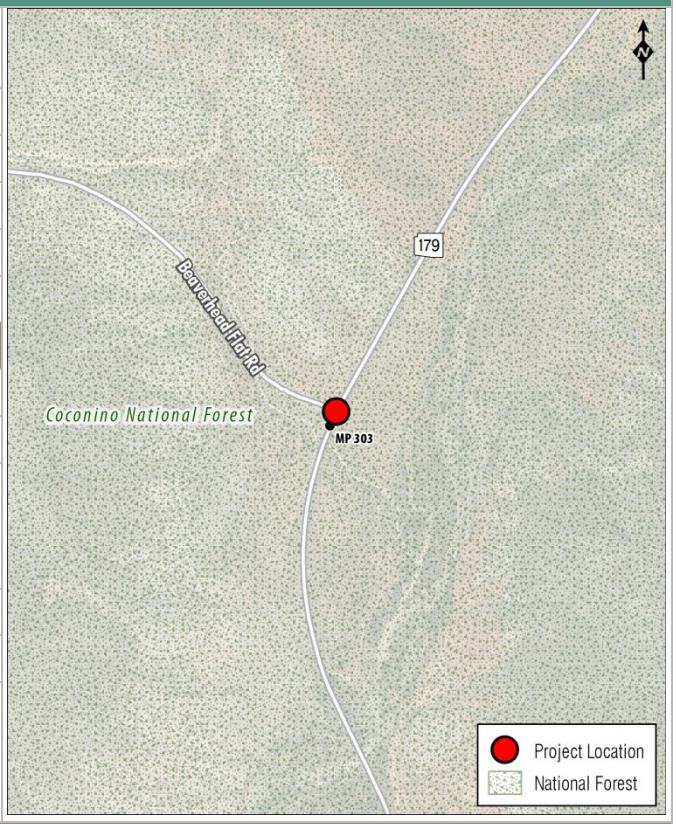
Location Description:	Unsignalized three-leg intersection with a stop sign on Beaverhead Flat Rd		
Responsible Agency:	ADOT		
Project Length:	N/A		
Adjacent Land Owner:	Coconino National Forest		
Number of Lanes	2 lanes	**Speed Limit:**	30 -55 mph
Functional Classification:	Principal Arterial and Major Collector		

Existing and Future Conditions

Existing ADT	~10,000	**Existing LOS:**	LOS B
2040 ADT	~14,900	**2040 LOS:**	LOS C

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	6		
Fatal Crashes:	0	**Injury Crashes:**	0



Project Description

ID	Location	Improvement	Cost Estimate
11.1	SR 179/Beaverhead Flat Rd Intersection	Conduct Traffic Signal Warrant study to confirm if the intersection meets signal warrants.	$10,000
11.2	SR 179/Beaverhead Flat Rd Intersection	Remove roadside vegetation to increase sight distance	

Purpose and Need

The Beaverhead Flat Road/SR 179 intersection is critical intersection that links Cornville Road to SR 179. The route is heavily utilized by commuter traffic and trucks to access the Village of Oak Creek. Delays often occur on Beaverhead Flat Road, because high vehicle speeds on SR 179 make it difficult for motorists to turn onto the roadway. The purpose of this project is: 1) conduct an intersection specific study that evaluates the need for traffic control; 2) increase driver visibility; 3) improve intersection safety

Project Benefits

1) Improves safety for the traveling public; 2) improves driver visibility; 3) improves traffic flow

Environmental Impacts

Recommended improvements developed as part of the study will occur at an existing intersection; therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, projected species, wildlife linkages, and cultural resources. Effort should be made to limit the impacts on Title VI populations during construction. During the design phase, close coordination should occur with representatives of Coconino National Forest to assess the impacts of improvements on the natural environment. As the project progresses, coordination should occur with the Coconino National Forest to assess negative impacts on the natural environment and to develop mitigation measures.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies to ensure improvements align with local and regional transportation goals.

Project #N-12: Intelligent Transportation Systems (ITS) Assessment

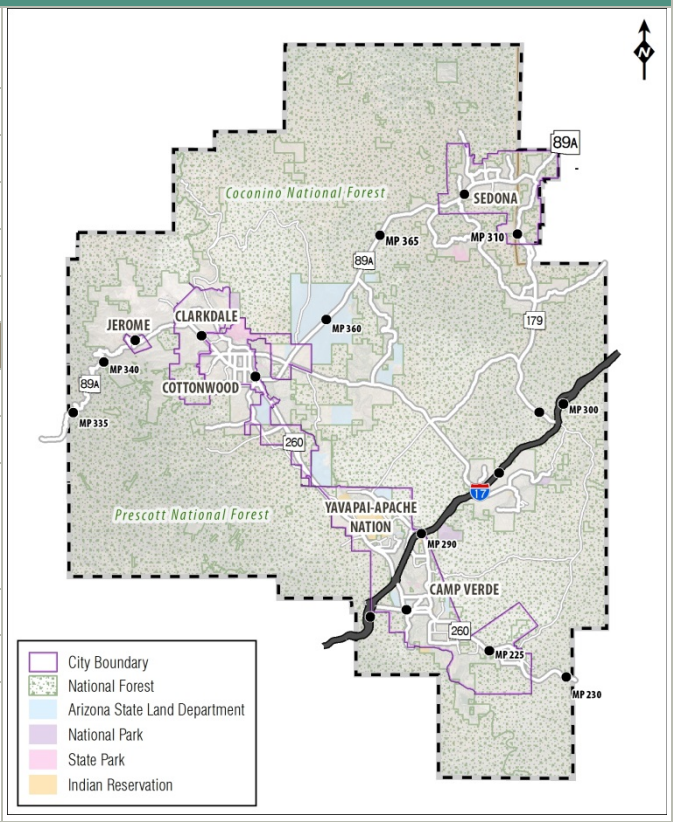
Location Description:	Project assesses the needs for warning signs on I-17 and state routes		
Responsible Agency:	Multi-jurisdictional		
Project Length:	N/A		
Adjacent Land Owner:	N/A		
Number of Lanes	N/A	**Speed Limit:**	N/A
Functional Classification:	N/A		

Existing and Future Conditions

Existing ADT	N/A	**Existing LOS:**	N/A
2040 ADT	N/A	**2040 LOS:**	N/A

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	N/A		
Fatal Crashes:	N/A	**Injury Crashes:**	N/A



Project Description

ID	Location	Improvement	Cost Estimate
12.1	Study Area Wide	Conduct an assessment to determine the feasibility and potential locations for dynamic message signboard (DMS) or variable message signboards (VMS). The ADOT I-17 Corridor Profile Study recommended sign placements at MP 297.4(SB), MP289 (NB) MP 303.4 (NB) and MP 305.0 (NB). Additional locations for potential message boards include: I-17 at MP 286.0 (NB), I-17 at MP 301.0 (SB), SR 260 at MP 216.0, and SR 179 at MP 301.0.	$50,000

Purpose and Need

Currently, the Verde Valley does not have a warning system that alerts motorists of traffic conditions, adverse weather, and emergency situations. The purpose of this study is to install electronic message boards that provide real-time congestion and travel-time information along major corridors and I-17. The *ADOT I-17 Corridor Profile Study* recommended sign placements at MP 297.4(SB), MP289 (NB) MP 303.4 (NB) and MP 305.0 (NB). Additional locations for potential message boards include: I-17 at MP 286.0 (NB), I-17 at MP 301.0 (SB), SR 260 at MP 216.0, and SR 179 at MP 301.0.

Project Benefits

1) May assist in improving traffic flow along area highways, as motorists may alter their route depending on congestion levels; 2) alerts motorists of roadway conditions and closures due to weather or emergency situations

Environmental Impacts

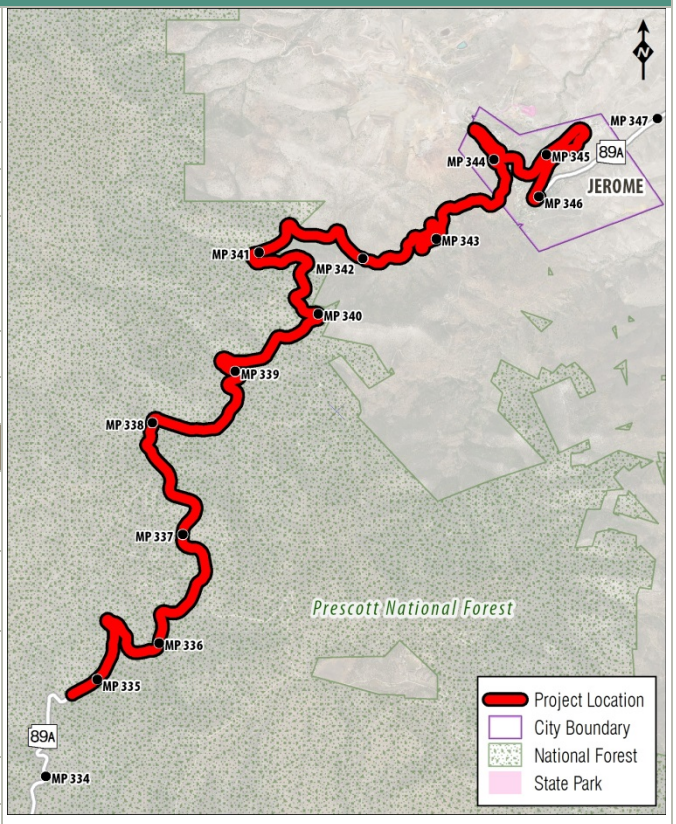
Recommended improvements developed as part of the study will occur within existing right-of-way; therefore, environmental impacts are minimal. Consideration should be given to impacts on visual resources, utilities, and noise receptors.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies to ensure improvements align with local and regional transportation goals.

Project #N-13: SR 89A: MP 334 - MP 346

Location Description:	Two-lane state highway; commuter and tourist route between Jerome and the Prescott area; mountainous terrain		
Responsible Agency:	ADOT		
Project Length:	14.3 mi		
Adjacent Land Owner:	Prescott National Forest, City of Jerome, Town of Clarkdale, Private Land		
Number of Lanes	2 lanes	**Speed Limit:**	20 -50 mph
Functional Classification:	Minor Arterial and Major Collector		



Existing and Future Conditions

Existing ADT	~1,400-6,000	**Existing LOS:**	LOS A
2040 ADT	~2,100 - 8,000	**2040 LOS:**	LOS C

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	123		
Fatal Crashes:	1	**Injury Crashes:**	25

Project Description

ID	*Location*	*Improvement*	*Cost Estimate*
13.1	*SR 89A: MP 334 - MP 346*	*Conduct a Roadway Safety Assessment (RSA) to develop safety related improvement strategies*	$30,000

Purpose and Need

This segment of SR 89A is a major commuter and tourist route that connects the Verde Valley to the Prescott area. Traversing through Mingus Mountain, the corridor is a windy road that has a high number of vehicle crashes and areas with limited sight distance. The purpose of this project is to conduct a RSA to identify and assess safety related improvements to improve the overall safety of the corridor.

Project Benefits

1) Identifies improvements to address corridor safety issues such as geometry, signage, etc.

Environmental Impacts

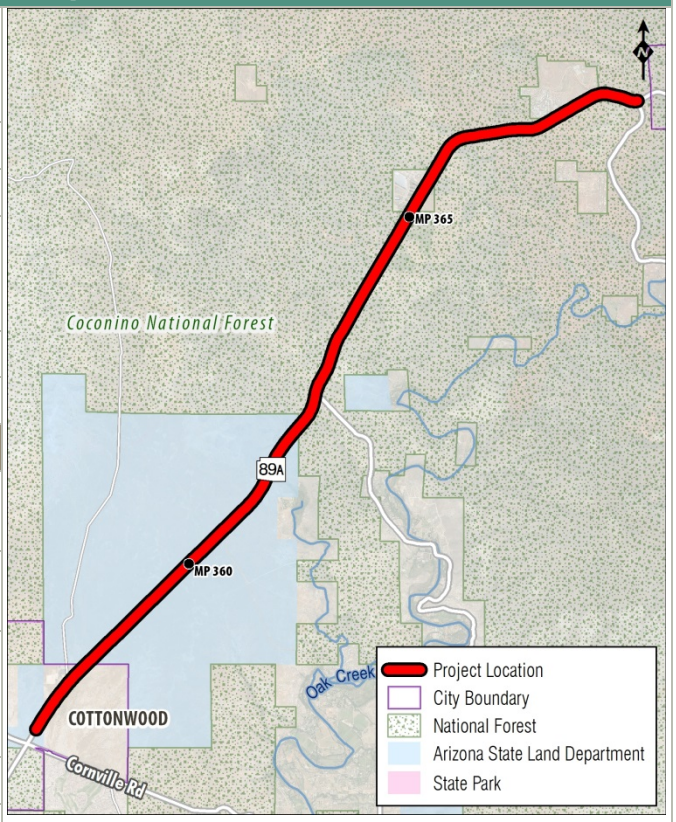
Recommended improvements developed as part of the study will occur along existing corridor; therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, projected species, wildlife linkages, visual resources, and cultural resources. Effort should be made to limit the impacts on Title VI populations during construction. During the design phase, coordination should occur with the Coconino National Forest to assess negative impacts on the natural environment and to develop mitigation measures.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies, particularly the Prescott National Forest, to ensure improvements align with local and regional transportation goals.

Project #N-14: SR 89A: Cornville Rd - MP 368.3 Red Rock Loop Rd

Location Description:	Four-lane roadway that serves as a tourist and commuter route between Cottonwood and Sedona.		
Responsible Agency:	ADOT		
Project Length:	11.3 mi		
Adjacent Land Owner:	City of Cottonwood, Arizona State Land Department, Coconino National Forest, Private Land		
Number of Lanes	4 lanes	**Speed Limit:**	55 - 65 mph
Functional Classification:	Principal Arterial		



Existing and Future Conditions

Existing ADT	~16,200 – 20,500	**Existing LOS:**	LOS B
2040 ADT	~28,200 – 29,900	**2040 LOS:**	LOS C

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	200		
Fatal Crashes:	6	**Injury Crashes:**	19

Project Description

ID	Location	Improvement	Cost Estimate
14.1	*SR 89A: Cornville Rd - MP 368.3 Red Rock Loop Rd*	*Conduct a Roadway Safety Assessment (RSA) to develop safety related improvement strategies*	$25,000

Purpose and Need

This segment of SR 89A is a major commuter and tourist route that connects Cottonwood, Cornville, and Sedona. The corridor experiences high traffic volumes, high vehicles speeds, and has numerous crashes. The purpose of this project is to conduct a RSA to identify and assess safety related improvements to improve the overall safety of the corridor.

Project Benefits

1) Identifies improvements to address corridor safety issues such as geometry, signage, etc.

Environmental Impacts

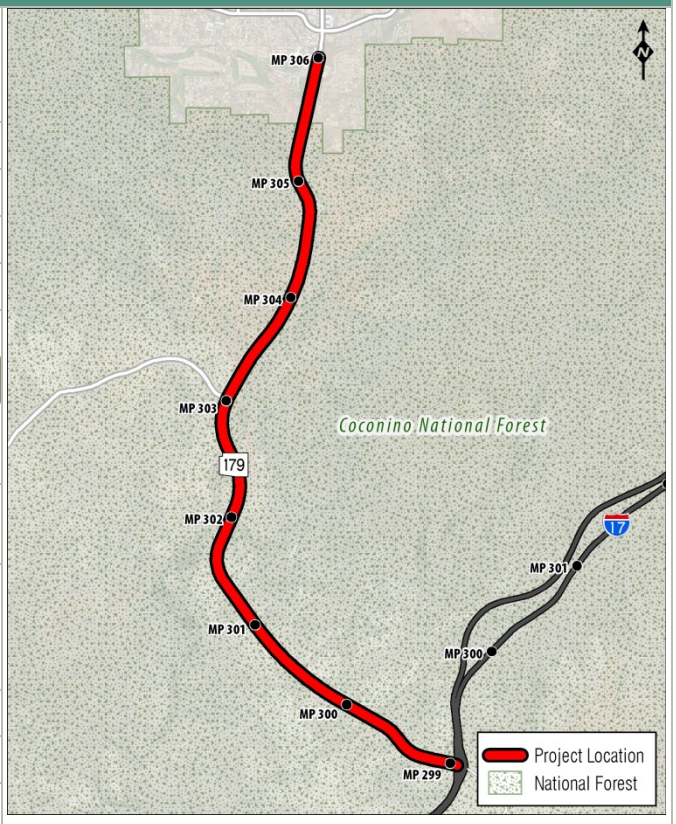
Recommended improvements developed as part of the study will occur along existing corridor; therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, projected species, wildlife linkages, visual resources, and cultural resources. Effort should be made to limit the impacts on Title VI populations during construction. During the design phase, coordination should occur with the Coconino National Forest to assess negative impacts on the natural environment and to develop mitigation measures.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies, particularly the Coconino National Forest, to ensure improvements align with local and regional transportation goals.

Project #N-15: SR 179: I-17 - Verde Valley School Rd

Location Description:	Two-lane segment of a state route that provides the primary access for tourists and locals between I-17 and Sedona		
Responsible Agency:	ADOT		
Project Length:	7.3 mi		
Adjacent Land Owner:	Coconino National Forest, Private Land		
Number of Lanes	2 lanes	**Speed Limit:**	35 -55 mph
Functional Classification:	Principal Arterial		



Existing and Future Conditions

Existing ADT	~7,700-10,000	**Existing LOS:**	LOS B
2040 ADT	~12,000 - 14,900	**2040 LOS:**	LOS C

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	74		
Fatal Crashes:	0	**Injury Crashes:**	6

Project Description

ID	Location	Improvement	Cost Estimate
15.1	SR 179: I-17 - Verde Valley School Rd	Conduct a Roadway Safety Assessment (RSA) to develop safety related improvement strategies	$20,000

Purpose and Need

Due to its scenic quality, SR 179 is designated as an All-American Road that is a critical regional corridor that links I-17 major tourist attractions in the City of Sedona. The corridor experiences high traffic volumes and vehicle speeds, and is listed as having fair to poor pavement conditions. The purpose of this project is to conduct a RSA to identify and assess safety related improvements to improve the overall safety of the corridor.

Project Benefits

1) Identifies improvements to address corridor safety issues such as geometry, signage, etc.

Environmental Impacts

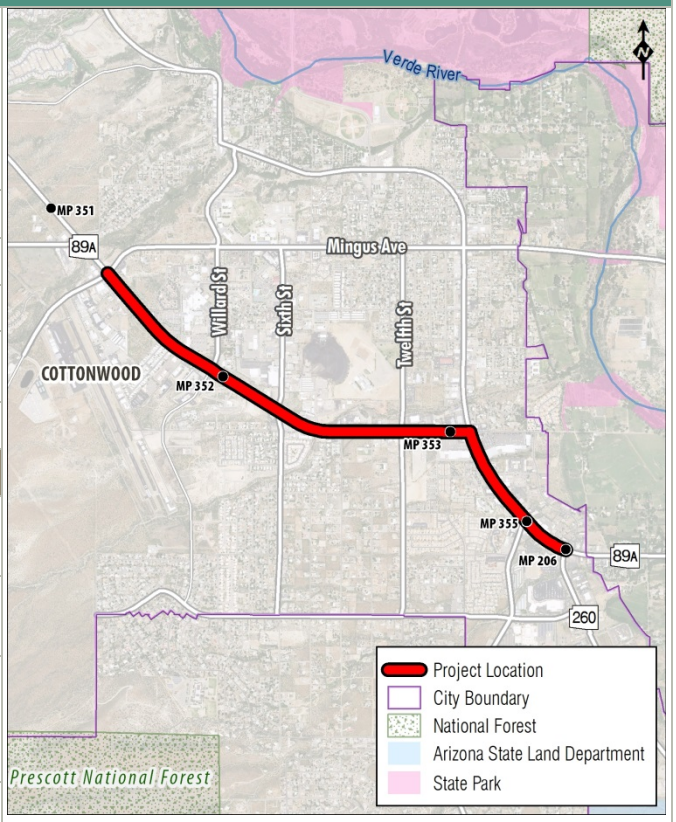
Recommended improvements developed as part of the study will occur along existing corridor; therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, projected species, wildlife linkages, visual resources, and cultural resources. Effort should be made to limit the impacts on Title VI populations during construction. During the design phase, coordination should occur with the Coconino National Forest to assess negative impacts on the natural environment and to develop mitigation measures.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies, particularly the Coconino National Forest, to ensure improvements align with local and regional transportation goals.

Project #N-16: SR 89A: Mingus Ave - SR 260

Location Description:	Segment of a state highway with four-lanes and a center turn-lane; The road is located within the business corridor of Cottonwood and is utilized by local and regional traffic within Verde Valley		
Responsible Agency:	ADOT		
Project Length:	2.4 mi		
Adjacent Land Owner:	City of Cottonwood, Private Land		
Number of Lanes	4 lanes with center turn lane	**Speed Limit:**	35 -45 mph
Functional Classification:	Minor Arterial		



Existing and Future Conditions

Existing ADT	~18,800 – 32,900	**Existing LOS:**	LOS B to C
2040 ADT	~24,700 – 44,900	**2040 LOS:**	LOS B to D

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	213		
Fatal Crashes:	0	**Injury Crashes:**	33

Project Description

ID	Location	Improvement	Cost Estimate
16.1	*SR 89A: Mingus Ave - SR 260*	*Conduct an access management assessment to identify improvement scenarios*	$50,000

Purpose and Need

The road is located within the business corridor of Cottonwood and utilized by both local and regional traffic in the Verde Valley. The corridor experiences high vehicle volumes, has close driveway spacing, and has a high number of crashes. The purpose of this project is to conduct an asset management assessment to identify access management techniques to improve the overall safety of the corridor.

Project Benefits

1) Identifies access management techniques to address corridor safety issues such as condensing driveways, installing medians, etc.

Environmental Impacts

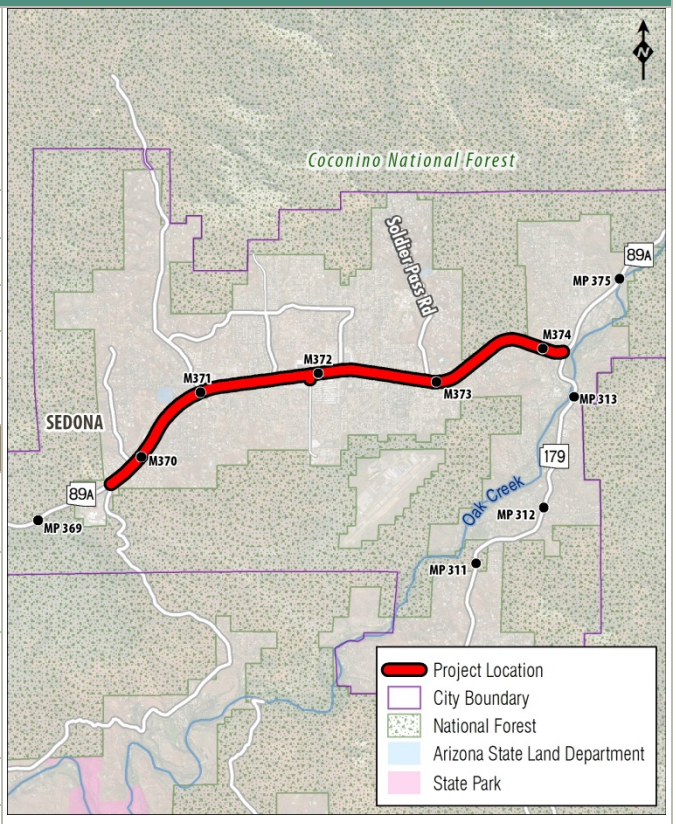
Recommended improvements developed as part of the study will occur along existing corridor; therefore, environmental impacts are minimal. Consideration should be given to impacts on utilities, hazardous material sites, and noise receptors. Effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies to ensure improvements align with local and regional transportation goals.

Project #N-17: SR 89A: Red Rock Loop Rd to Uptown Sedona

Location Description:	Segment of a state highway with four-lanes and a center turn-lane; The road is located within the business corridor of Sedona and is utilized by local, regional, and tourist traffic		
Responsible Agency:	ADOT		
Project Length:	2.4 mi		
Adjacent Land Owner:	City of Cottonwood, Private Land		
Number of Lanes	5 lanes	**Speed Limit:**	35 -45 mph
Functional Classification:	Minor Arterial		



Existing and Future Conditions

Existing ADT	~19,500 – 33,700	**Existing LOS:**	LOS B to C
2040 ADT	~28,000 – 42,300	**2040 LOS:**	LOS C to D

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	280		
Fatal Crashes:	3	**Injury Crashes:**	44

Project Description

ID	Location	Improvement	Cost Estimate
17.1	*SR 89A: Mingus Ave - SR 260*	*Conduct an access management assessment to identify improvement scenarios*	$60,000

Purpose and Need

Located in the business area of Sedona, SR 89A is a major route that provides access to numerous businesses and local residential roads. The corridor experiences high vehicle volumes, has close driveway spacing, and has a high number of crashes. The purpose of this project is to conduct an asset management assessment to identify access management techniques to improve the overall safety of the corridor.

Project Benefits

1) Identifies access management techniques to address corridor safety issues such as condensing driveways, installing medians, etc.

Environmental Impacts

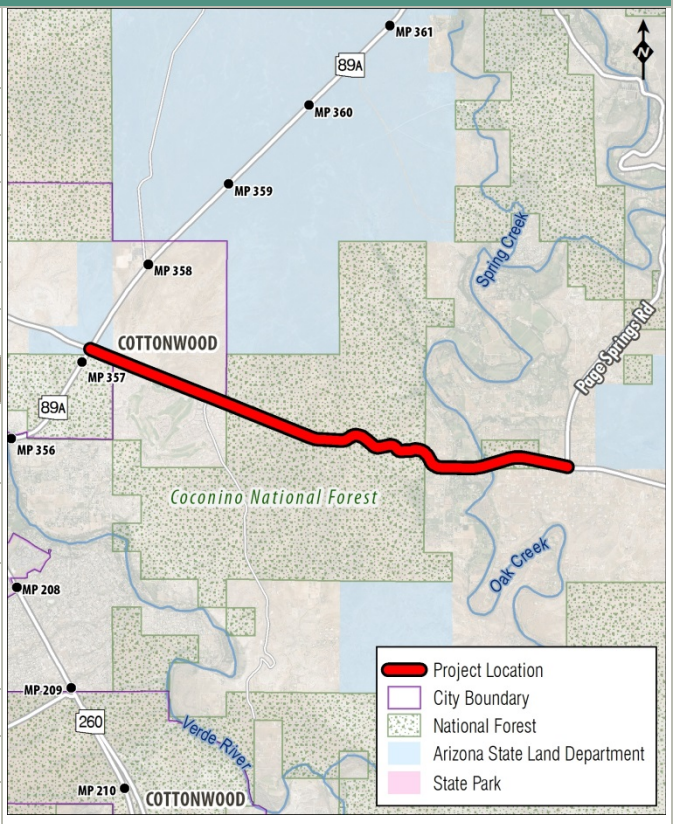
Recommended improvements developed as part of the study will occur along existing corridor; therefore, environmental impacts are minimal. Consideration should be given to impacts on utilities, hazardous material sites, and noise receptors. Effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies to ensure improvements align with local and regional transportation goals.

Project #N-18: Cornville Rd: SR 89A - Page Springs Rd

Location Description:	Two-lane roadway segment that links Cottonwood to Cornville		
Responsible Agency:	Yavapai County		
Project Length:	4.5 mi		
Adjacent Land Owner:	City of Cottonwood, Coconino National Forest, Private Land		
Number of Lanes	2-3 lanes	**Speed Limit:**	25 -50 mph
Functional Classification:	Major Collector		



Existing and Future Conditions

Existing ADT	~7,300 – 12,700	**Existing LOS:**	LOS C to F
2040 ADT	~7,700 to 18,800	**2040 LOS:**	LOS C to F

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	57		
Fatal Crashes:	1	**Injury Crashes:**	9

Project Description

ID	*Location*	*Improvement*	*Cost Estimate*
18.1	*Cornville Rd: SR 89A - Page Springs Rd*	*Conduct a Roadway Safety Assessment (RSA) to develop safety related improvement strategies*	$20,000

Purpose and Need

Cornville Road is a major corridor that connectsI-17, Cornville, and SR 89A in Cottonwood. It is a two-lane road that experience high traffic volumes, high vehicles speeds, and has a high number of crashes. The purpose of this project is to conduct a roadway safety to develop safety related improvement strategies.

Project Benefits

1) Identifies improvements to address corridor safety issues such as geometry, signage, etc.

Environmental Impacts

Recommended improvements developed as part of the study will occur along existing corridor; therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, projected species, wildlife linkages, visual resources, and cultural resources. Effort should be made to limit the impacts on Title VI populations during construction. During the design phase, coordination should occur with the Coconino National Forest to assess negative impacts on the natural environment and to develop mitigation measures.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies, particularly Coconino National Forest, to ensure improvements align with local and regional transportation goals.

Project #N-19: SR 89A: MP 346.6 - MP 349.0

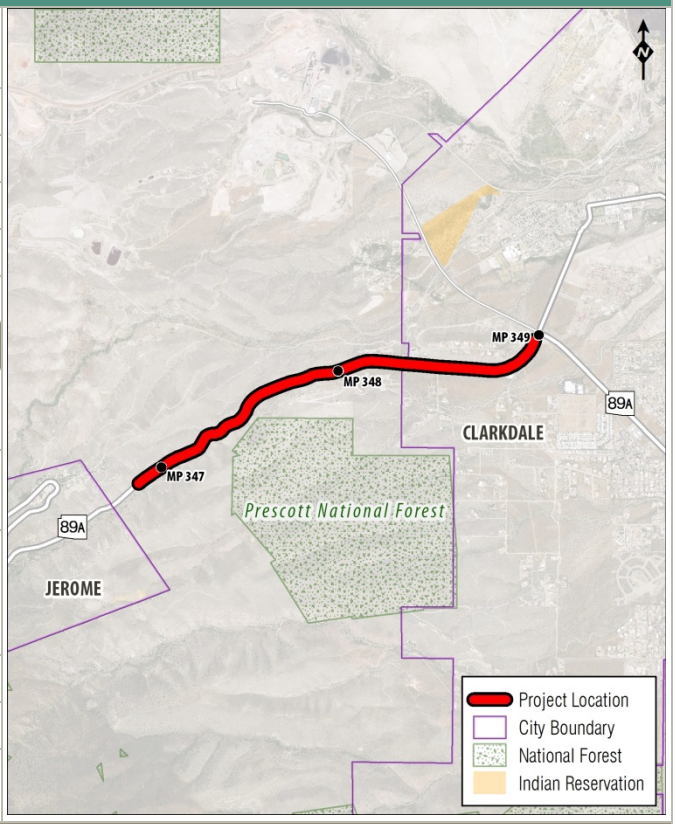
Location Description:	Two-lane roadway that connects Clarkdale to Jerome.		
Responsible Agency:	ADOT		
Project Length:	2.1 mi		
Adjacent Land Owner:	Town of Clarkdale, Private Land		
Number of Lanes	2 lanes	**Speed Limit:**	35 -50 mph
Functional Classification:	Minor Arterial and Major Collector		

Existing and Future Conditions

Existing ADT	~5,500 – 6,000	**Existing LOS:**	LOS A
2040 ADT	~7,100 – 8,000	**2040 LOS:**	LOS B

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	24		
Fatal Crashes:	2	**Injury Crashes:**	4



Project Description

ID	Location	Improvement	Cost Estimate
19.1	SR 89A: MP 346.6 - MP 349.0	Widen shoulders from 1 FT to 5 FT	$724,500

Purpose and Need

As a major tourist and commuter route, this section of SR 89A experience high traffic volumes and is heavily utilized by heavy vehicles between Jerome and Clarkdale. Currently, the corridor has narrow shoulders affecting the safety of the corridor. The purpose of this project is to provide bicyclists with a safe buffer zone from vehicular traffic and to improve the overall safety of the corridor.

Project Benefits

1) Increases safety for all modes of transportation; 2) provides a location for disabled vehicles to pull over; 3) improves emergency response times; 4) extends the life of roadway surface

Environmental Impacts

Recommended improvements will occur along an existing corridor; however, a detailed review of the existing right-of-way constraints is needed to determine if additional right-of-way is required. During the design phase, consideration should be given to impacts on the natural environment, utilities, wildlife linkages, and cultural resources. Effort should be made to limit the impacts on Title VI populations during construction. During the design phase, coordination should occur with the Prescott National Forest to assess negative impacts on the natural environment and to develop mitigation measures.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies to ensure improvements align with local and regional transportation goals.

Project #N-20: SR 89A: MP 374.0 - MP 376.0

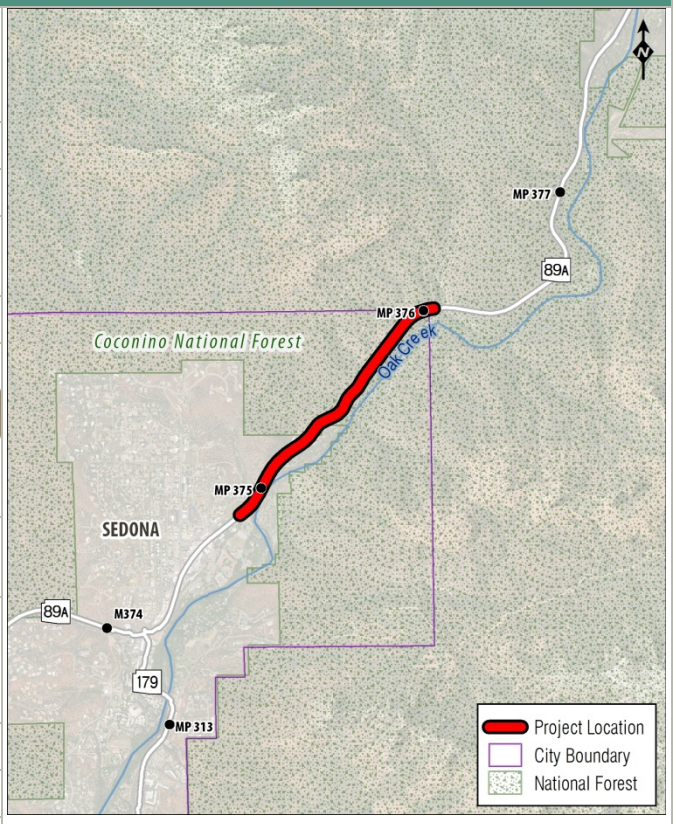
Location Description:	Two-lane roadway that is heavily utilized by tourists between Sedona and Flagstaff.		
Responsible Agency:	ADOT		
Project Length:	2.0 mi		
Adjacent Land Owner:	City of Sedona, Coconino National Forest, Private Land		
Number of Lanes	2 lanes	**Speed Limit:**	40 mph
Functional Classification:	Principal Arterial		

Existing and Future Conditions

Existing ADT	~5,000 – 5,500	**Existing LOS:**	LOS A
2040 ADT	~7,600 – 8,100	**2040 LOS:**	LOS B

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	76		
Fatal Crashes:	1	**Injury Crashes:**	7



Project Description

ID	Location	Improvement	Cost Estimate
20.1	*SR 89A: MP 374.0 - MP 376.0*	*Widen shoulders from 1 FT to 5 FT*	$690,000

Purpose and Need

Located in Oak Creek Canyon, SR 89A is one of the mostly heavily utilized scenic routes in Arizona. This critical corridor experiences high traffic volumes and can experience heavy congestion, particularly during the tourist season. The purpose of this project is to provide bicyclists with a safe buffer zone from vehicular traffic and to improve the overall safety of the corridor.

Project Benefits

1) Increases safety for all modes of transportation; 2) provides a location for disabled vehicles to pull over; 3) improves emergency response times; 4) extends the life of roadway surface

Environmental Impacts

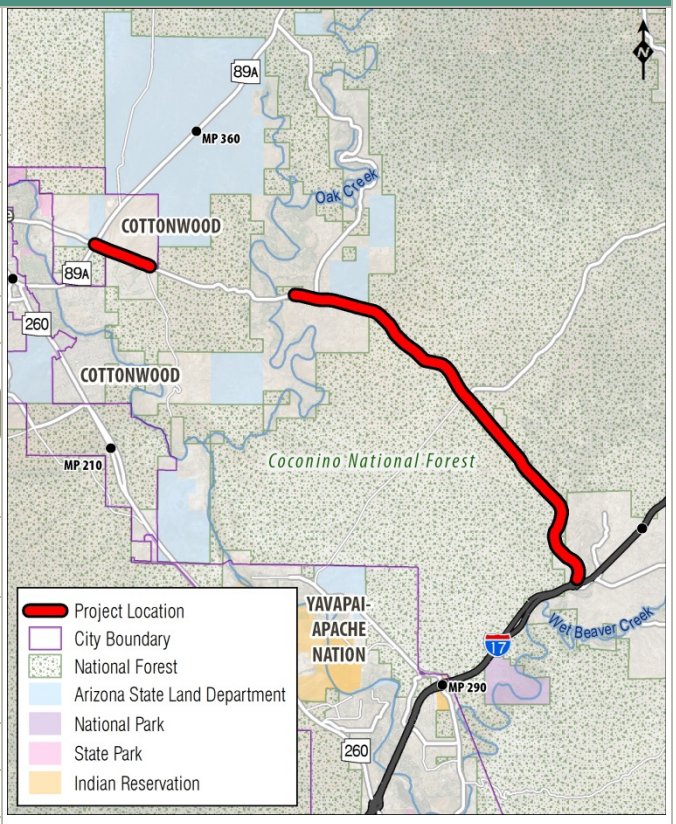
Recommended improvements will occur along an existing corridor; however, a detailed review of the existing right-of-way constraints is needed to determine if additional right-of-way is required. As the project progresses, close coordination should occur with the Coconino National Forest to assess negative impacts on the natural environment and to develop mitigation measures. During the design phase, consideration should be given to impacts on the natural environment, utilities, wildlife linkages, and cultural resources. Effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies, particularly the Coconino National Forest, to ensure improvements align with local and regional transportation goals.

Project #N-21: Cornville Rd: SR 89A - Tissaw Road; Aspaas Road -I-17

Location Description:	Two-lane roadway segment that links Cottonwood, Cornville, and I-17		
Responsible Agency:	Yavapai County		
Project Length:	9.5 mi		
Adjacent Land Owner:	City of Cottonwood, Coconino National Forest, Private Land, Arizona State Land Department		
Number of Lanes	2-3 lanes	**Speed Limit:**	30-50 mph
Functional Classification:	Major Collector		



Existing and Future Conditions

Existing ADT	~2,900 – 12,700	**Existing LOS:**	LOS A to F
2040 ADT	~4,400 – 18,800	**2040 LOS:**	LOS B to F

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	93		
Fatal Crashes:	3	**Injury Crashes:**	20

Project Description

ID	Location	Improvement	Cost Estimate
21.1	Cornville Rd: SR 89A –Tissaw Rd and Aspaas Rd - I-17	Widen shoulders from 0 FT to 5 FT	$4,132,500

Purpose and Need

Cornville Road is a major corridor that connectsI-17, Cornville, and SR 89A in Cottonwood. It is a two-lane road that experiences high traffic volumes, high vehicles speeds, and has a high number of crashes. This critical corridor experiences high traffic volumes and can experience heavy congestion, particularly during the tourist season. The purpose of this project is to provide bicyclists with a safe buffer zone from vehicular traffic and to improve the overall safety of the corridor.

Project Benefits

1) Increases safety for all modes of transportation; 2) provides a location for disabled vehicles to pull over; 3) improves emergency response times; 4) extends the life of roadway surface

Environmental Impacts

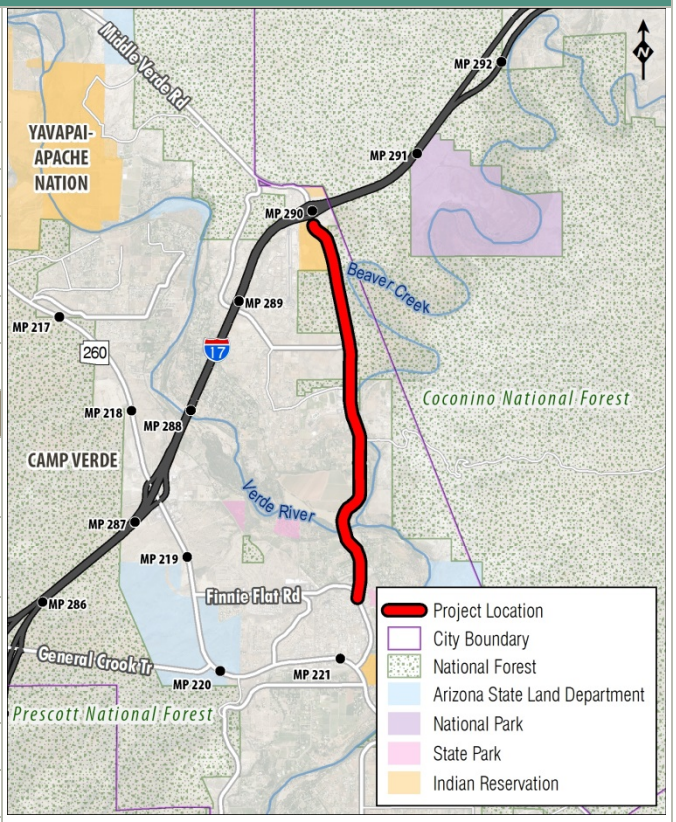
Recommended improvements will occur along an existing corridor; however, a detailed review of the existing right-of-way constraints is needed to determine if additional right-of-way is required. As the project progresses, close coordination should occur with the Coconino National Forest to assess negative impacts on the natural environment and to develop mitigation measures. During the design phase, consideration should be given to impacts on the natural environment, utilities, wildlife linkages, and cultural resources. Effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies, particularly Coconino National Forest, to ensure improvements align with local and regional transportation goals.

Project #N-22: Montezuma Castle Highway: Finnie Flat Rd to I-17

Location Description:	Two-lane roadway linking Camp Verde to I-17; The road connects downtown Camp Verde and the Cliff Castle Casino		
Responsible Agency:	Town of Camp Verde		
Project Length:	3.2 mi		
Adjacent Land Owner:	Town of Camp Verde, Coconino National Forest, Private Land		
Number of Lanes	2-4 lanes	**Speed Limit:**	25-35 mph
Functional Classification:	Major Collector		



Existing and Future Conditions

Existing ADT	~3,700 – 10,700	**Existing LOS:**	LOS C to F
2040 ADT	~3,800 – 12,600	**2040 LOS:**	LOS C to F

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	19		
Fatal Crashes:	0	**Injury Crashes:**	4

Project Description

ID	Location	Improvement	Cost Estimate
22.1	*Montezuma Castle Highway: Finnie Flat Rd to I-17*	*Widen shoulders from 0 FT to 5 FT*	$1,392,000

Purpose and Need

Montezuma Castle Highway is a two-lane roadway that provides a connection between I-17, Cliff Castle Casino, and downtown Camp Verde. The corridor is a school bus route with no shoulders and often experiences delays due to vehicles waiting to turn left. The purpose of this project is to provide bicyclists with a safe buffer zone from vehicular traffic and to improve the overall safety of the corridor.

Project Benefits

1) Increases safety for all modes of transportation; 2) provides a location for disabled vehicles to pull over; 3) improves emergency response times; 4) extends the life of roadway surface

Environmental Impacts

Recommended improvements will occur along an existing corridor; however, a detailed review of the existing right-of-way constraints is needed to determine if additional right-of-way is required. As the project progresses, close coordination should occur with the Coconino National Forest to assess negative impacts on the natural environment and to develop mitigation measures. During the design phase, consideration should be given to impacts on the natural environment, utilities, wildlife linkages, and cultural resources. Effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies, particularly Coconino National Forest and the Yavapai-Apache Nation, to ensure improvements align with local and regional transportation goals.

Project #N-23: Camino Real: Donner Trl to Arrowhead Ln

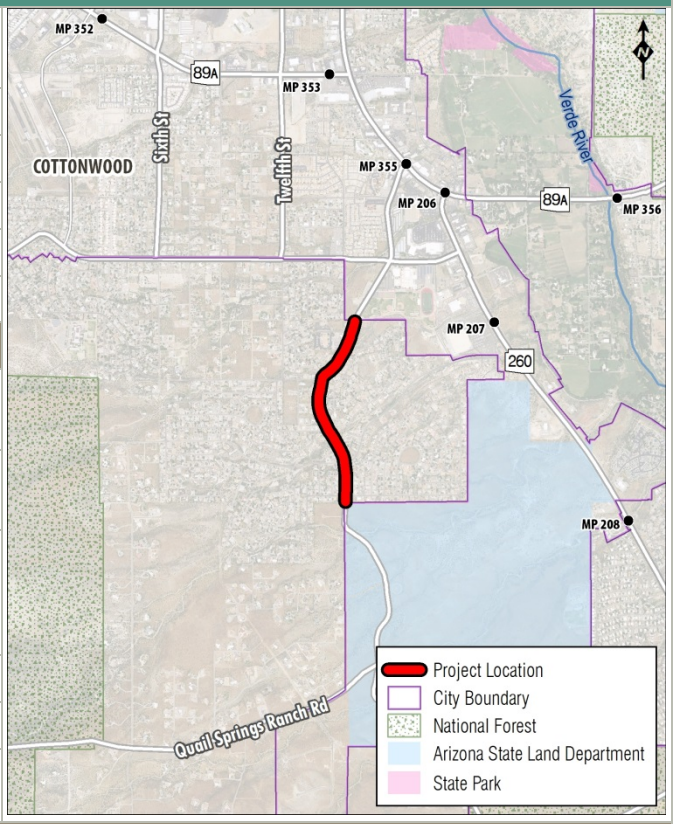
Location Description:	Two-lane roadway primarily utilized by local residents		
Responsible Agency:	Yavapai County		
Project Length:	0.8 mi		
Adjacent Land Owner:	Private Land		
Number of Lanes	2 lanes	**Speed Limit:**	25 mph
Functional Classification:	Major Collector		

Existing and Future Conditions

Existing ADT	~4,400 – 7,200	**Existing LOS:**	LOS B to C
2040 ADT	~6,900 – 9,200	**2040 LOS:**	LOS C to D

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	17		
Fatal Crashes:	0	**Injury Crashes:**	7



Project Description

ID	Location	Improvement	Cost Estimate
23.1	*Camino Real: Donner Trl to Arrowhead Ln*	*Widen shoulders from 0 FT to 5 FT*	$348,000

Purpose and Need

Camino Real is a two-lane paved road that is primarily used by local residents to access residential areas and Mingus Union High School. Currently, the corridor has narrow shoulders affecting the safety of the corridor. The purpose of this project is to provide bicyclists with a safe buffer zone from vehicular traffic and to improve the overall safety of the corridor.

Project Benefits

1) Increases safety for all modes of transportation; 2) provides a location for disabled vehicles to pull over; 3) improves emergency response times; 4) extends the life of roadway surface

Environmental Impacts

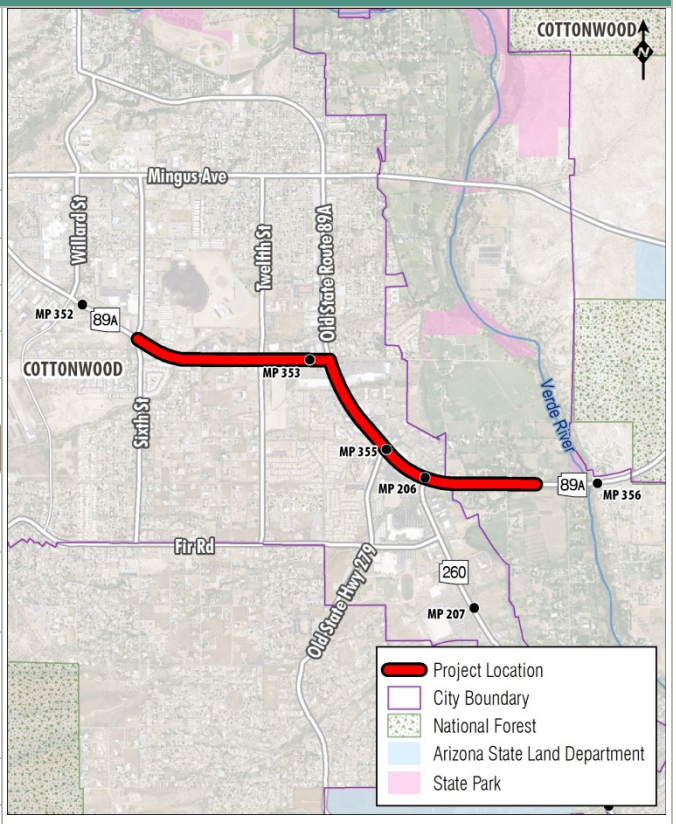
Recommended improvements will occur along an existing corridor; however, a detailed review of the existing right-of-way constraints is needed to determine if additional right-of-way is required. Consideration should be given to impacts on the natural environment, utilities, wildlife linkages, and cultural resources. Effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies to ensure improvements align with local and regional transportation goals.

Project #N-24: SR 89A: 6th St - MP 355.7

Location Description:	Segment of a state highway with four-lanes and a center turn-lane; The road is located within the business corridor of Cottonwood and is utilized by local and regional traffic within Verde Valley		
Responsible Agency:	ADOT		
Project Length:	1.9 mi		
Adjacent Land Owner:	City of Cottonwood, Private Land		
Number of Lanes	5 lanes	**Speed Limit:**	35-45 mph
Functional Classification:	Principal Arterial and Minor Arterial		



Existing and Future Conditions

Existing ADT	~22,400 – 32,900	**Existing LOS:**	LOS B to C
2040 ADT	~32,500 – 45,000	**2040 LOS:**	LOS C to D

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	248		
Fatal Crashes:	0	**Injury Crashes:**	40

Project Description

ID	Location	Improvement	Cost Estimate
24.1	*SR 89A: 6th St - MP 355.7*	*Major pavement rehabilitation*	$1,881,000

Purpose and Need

The road is located within the business corridor of Cottonwood and utilized by both local and regional traffic in the Verde Valley. The corridor experiences high vehicle volumes, has close driveway spacing, has poor pavement condition, and has a high number of crashes. The purpose of this project is to rehabilitate the pavement of the roadway in order to improve the poor pavement conditions.

Project Benefits

1) Extends the life of existing infrastructure; 2) improves roadway conditions; 3) improves driver experience; 4) improves economically important corridor

Environmental Impacts

Recommended improvements will occur along an existing corridor; therefore, environmental impacts are minimal. Consideration should be given to impacts on utilities, hazardous material sites, and noise receptors. Effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies to ensure improvements align with local and regional transportation goals.

Project #N-25: SR 179: I-17 - MP 304.7

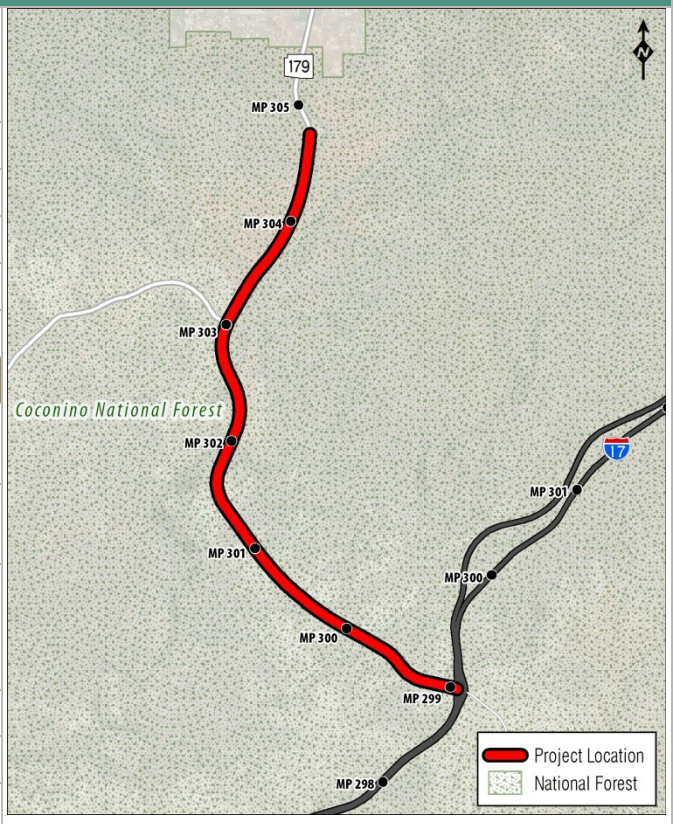
Location Description:	Two-lane segment of a state route that provides the primary access for tourists and locals between I-17 and Sedona		
Responsible Agency:	ADOT		
Project Length:	5.8 mi		
Adjacent Land Owner:	Coconino National Forest		
Number of Lanes	2 lanes	**Speed Limit:**	45-55 mph
Functional Classification:	Principal Arterial		

Existing and Future Conditions

Existing ADT	~7,700 – 10,000	**Existing LOS:**	LOS B
2040 ADT	~12,000 – 14,900	**2040 LOS:**	LOS C

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	46		
Fatal Crashes:	0	**Injury Crashes:**	4



Project Description

ID	Location	Improvement	Cost Estimate
25.1	SR 179: I-17 - MP 304.7	Major pavement rehabilitation	$2,465,000

Purpose and Need

Due to its scenic quality, SR 179 is designated as an All-American Road that is a critical regional corridor that links I-17 major tourist attractions in the City of Sedona. The corridor experiences high traffic volumes and vehicle speeds, and is listed as having fair to poor pavement conditions. The purpose of the project is to rehabilitate the roadway surface to improve safety for the traveling public.

Project Benefits

1) Extends the life of existing infrastructure; 2) improves roadway conditions; 3) improves driver experience; 4) improves economically important corridor

Environmental Impacts

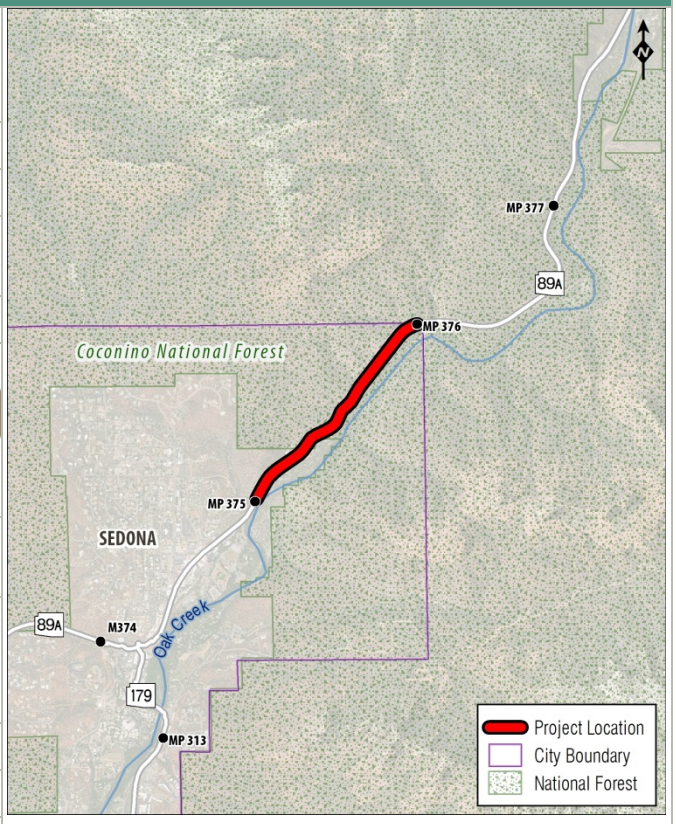
Recommended improvements will occur along an existing corridor; therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, utilities, wildlife linkages, and cultural resources. Effort should be made to limit the impacts on Title VI populations during construction. As the project progresses, coordination should occur with the Coconino National Forest to assess negative impacts on the natural environment and to develop mitigation measures.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies to ensure improvements align with local and regional transportation goals.

Project #N-26: SR 89A: MP 375.0 - MP 376.0

Location Description:	Two-lane roadway that is heavily utilized by tourists between Sedona and Flagstaff.		
Responsible Agency:	ADOT		
Project Length:	1.0 mi		
Adjacent Land Owner:	City of Sedona, Coconino National Forest, Private Land		
Number of Lanes	2 lanes	**Speed Limit:**	40 mph
Functional Classification:	Principal Arterial		



Existing and Future Conditions

Existing ADT	~5,000 – 5,500	**Existing LOS:**	LOS A
2040 ADT	~7,600 – 8,100	**2040 LOS:**	LOS B

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	73		
Fatal Crashes:	1	**Injury Crashes:**	14

Project Description

ID	Location	Improvement	Cost Estimate
26.1	SR 89A: MP 375.0 - MP 376.0	Major pavement rehabilitation	$425,000

Purpose and Need

Located in Oak Creek Canyon, SR 89A is one of the mostly heavily utilized scenic routes in Arizona. This critical corridor experiences high traffic volumes and can experience heavy congestion, particularly during the tourist season. Currently, the ADOT Pavement Management System rates the corridor has having fair to poor pavement conditions. The purpose of the project is to rehabilitate the roadway surface to improve safety for the traveling public.

Project Benefits

1) Extends the life of existing infrastructure; 2) improves driver experience; 3) improves economically important corridor; 4) improves safety for all modes

Environmental Impacts

Recommended improvements will occur along an existing corridor; therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, utilities, wildlife linkages, and cultural resources. Effort should be made to limit the impacts on Title VI populations during construction. As the project progresses, coordination should occur with the Coconino National Forest to assess negative impacts on the natural environment and to develop mitigation measures.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies, particularly the Coconino National Forest, to ensure improvements align with local and regional transportation goals.

Project #N-27: SR 89A: MP 343.3 - MP 348.6

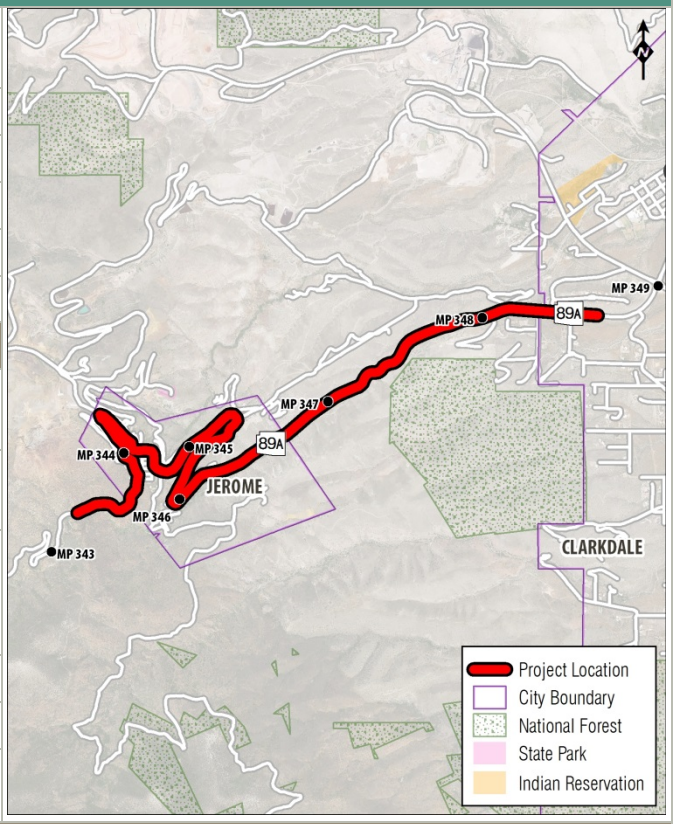
Location Description:	Two-lane roadway that connects Clarkdale to Jerome.		
Responsible Agency:	ADOT		
Project Length:	5.3 mi		
Adjacent Land Owner:	Town of Clarkdale, Private Land		
Number of Lanes	2 lanes	**Speed Limit:**	50 mph
Functional Classification:	Minor Arterial and Major Collector		

Existing and Future Conditions

Existing ADT	~5,400 – 5,500	**Existing LOS:**	LOS A
2040 ADT	~7,100 – 7,200	**2040 LOS:**	LOS B

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	41		
Fatal Crashes:	1	**Injury Crashes:**	17



Project Description

ID	*Location*	*Improvement*	*Cost Estimate*
27.1	*SR 89A: MP 343.3 - MP 348.6*	*Major pavement rehabilitation*	$765,000

Purpose and Need

As a major tourist and commuter route, this section of SR 89A experience high traffic volumes and is heavily utilized by heavy vehicles between Jerome and Clarkdale. Currently, the ADOT Pavement Management System rates the corridor has having fair to poor pavement conditions. The purpose of the project is to rehabilitate the roadway surface to improve safety for the traveling public.

Project Benefits

1) Extends the life of existing infrastructure; 2) improves driver experience; 3) improves economically important corridor; 4) improves safety for all modes

Environmental Impacts

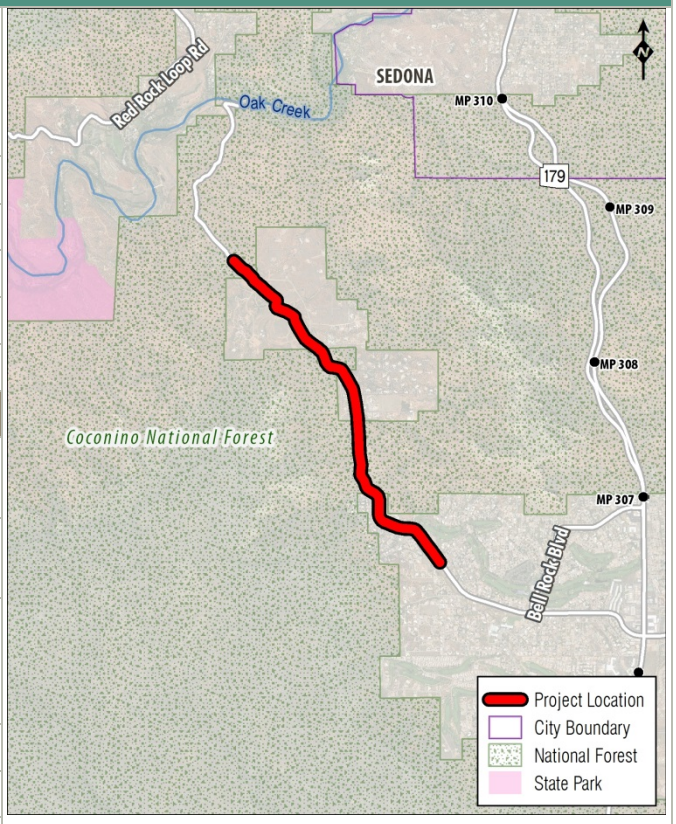
Recommended improvements will occur along an existing corridor; therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, utilities, wildlife linkages, and cultural resources. Effort should be made to limit the impacts on Title VI populations during construction. As the project progresses, coordination should occur with the Prescott National Forest to assess negative impacts on the natural environment and to develop mitigation measures.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies to ensure improvements align with local and regional transportation goals.

Project #N-28: Verde Valley School Rd: Red Rock Cove Dr - End of Pavement

Location Description:	Two-lane paved roadway that provides local access to residential areas is often utilized by tourists accessing recreation areas along Oak Creek		
Responsible Agency:	ADOT		
Project Length:	2.4 mi		
Adjacent Land Owner:	Coconino National Forest, Private Land		
Number of Lanes	2 lanes	**Speed Limit:**	25-30 mph
Functional Classification:	Major Collector		



Existing and Future Conditions

Existing ADT	~1,500 – 2,400	**Existing LOS:**	LOS A
2040 ADT	~1,900 – 3,000	**2040 LOS:**	LOS A to B

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	6		
Fatal Crashes:	0	**Injury Crashes:**	3

Project Description

ID	Location	Improvement	Cost Estimate
28.1	*Verde Valley School Rd: Red Rock Cove Dr - End of Pavement*	*Major pavement rehabilitation*	$1,020,000

Purpose and Need

Verde Valley School Road is a paved two-lane roadway extending west from SR 179 in the Village of Oak Creek. The corridor provides local access to residential areas, the Verde Valley School, and recreational areas along Oak Creek. Currently, the roadway surface is in poor condition. The purpose of the project is to rehabilitate the roadway surface to improve safety for the traveling public.

Project Benefits

1) Extends the life of existing infrastructure; 2) improves driver experience; 3) improves economically important corridor; 4) improves safety for all modes

Environmental Impacts

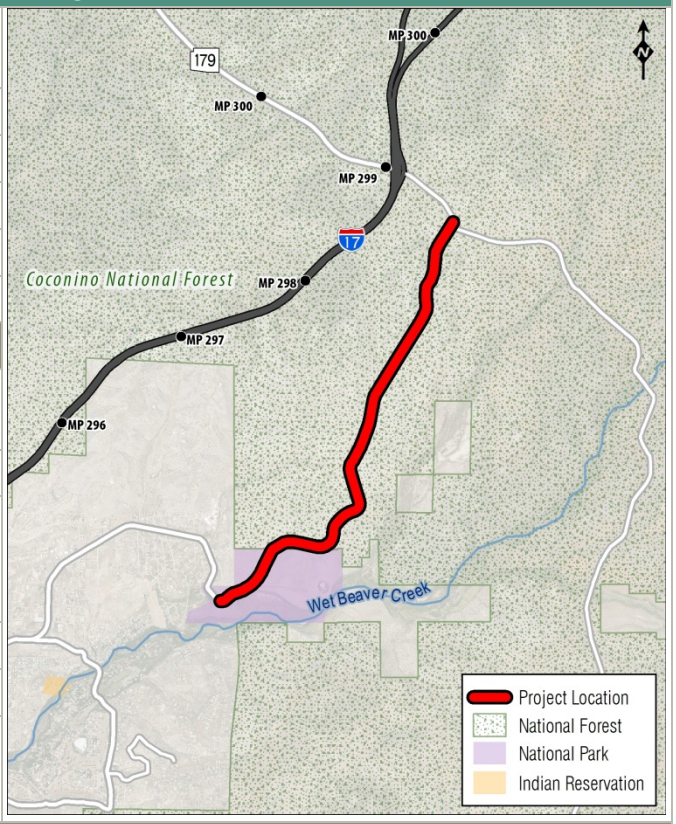
Recommended improvements will occur along an existing corridor; therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, utilities, wildlife linkages, and cultural resources. Effort should be made to limit the impacts on Title VI populations during construction. As the project progresses, coordination should occur with the Coconino National Forest to assess negative impacts on the natural environment and to develop mitigation measures.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies, particularly Coconino National Forest, to ensure improvements align with local and regional transportation goals.

Project #N-29: Beaver Creek Rd: Montezuma Well Rd to Ranger Rd

Location Description:	Unpaved roadway between Lake Montezuma and Ranger Road		
Responsible Agency:	Multi-jurisdictional		
Project Length:	3.4 mi		
Adjacent Land Owner:	Private Land, National Park Service		
Number of Lanes	2 lanes	**Speed Limit:**	N/A
Functional Classification:	Minor Collector		



Existing and Future Conditions

Existing ADT	~1,900 – 2,000	**Existing LOS:**	LOS A to C
2040 ADT	N/A	**2040 LOS:**	N/A

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	4		
Fatal Crashes:	0	**Injury Crashes:**	1

Project Description

ID	*Location*	*Improvement*	*Cost Estimate*
29.1	*Beaver Creek Rd: Montezuma Well Rd to Ranger Rd*	*Improve roadway surface conditions by applying unpaved road treatments that provide for a much stable and smoother surface and reduce dust emissions*	$255,000

Purpose and Need

Beaver Creek Road is an unpaved roadway that transverses through the Coconino National Forest from Lake Montezuma to Beaver Creek Ranger Station Road. Currently, access to Lake Montezuma is only available via Beaver Creek Road to the west or via this unpaved roadway. At certain points, the roadway is too narrow for vehicles to safely pass each other. Additionally, vehicles have difficultly utilizing the roadway during adverse weather due to the muddy conditions of the roadway. The purpose of this study is to apply unpaved roadway surface treatments to stabilize the roadway.

Project Benefits

1) Provides an alternative/emergency route to Lake Montezuma; 2) improves roadway conditions; 3) improves driver experience; 4) reduces dust emissions

Environmental Impacts

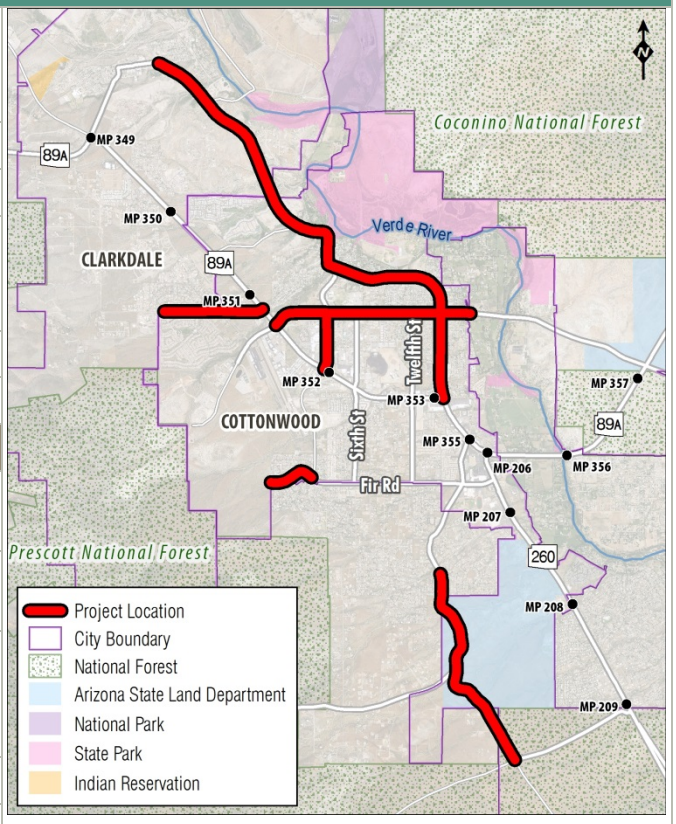
As the project progresses, additional analysis will need to occur to determine which road suppressant treatment has the least impact on the natural environment. Consideration should be given on the impacts on the water quality from treated road surfaces, vegetation health, and roadside soils. As the project progresses, coordination should occur with the Coconino National Forest to assess negative impacts on the natural environment and to develop mitigation measures.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. Representatives from the Coconino Forest commented that additional coordination needs to occur to determine if proposed improvements align with the *Land and Resource Management Plan for the Coconino National Forest* and is compliant with NEPA.

Project #N-30: Cottonwood Pavement Rehabilitation

Location Description:	Citywide project of roadways that provide access to commercial and residential areas of Cottonwood		
Responsible Agency:	City of Cottonwood		
Project Length:	10.0 mi		
Adjacent Land Owner:	Arizona State Land Department, Private Land, City of Cottonwood, Prescott National Forest		
Number of Lanes	2-4 lanes	**Speed Limit:**	25-35 mph
Functional Classification:	N/A		



Existing and Future Conditions

Existing ADT	~100 – 17,000	**Existing LOS:**	LOS A to C
2040 ADT	~500 – 21,500	**2040 LOS:**	LOS A to D

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	N/A		
Fatal Crashes:	N/A	**Injury Crashes:**	N/A

Project Description

ID	Location	Improvement	Cost Estimate
30.1	*Broadway: 0.5mi west of Bill Gray Rd - SR 89A*	*Major pavement rehabilitation*	$4,250,000
30.2	*Mingus Ave: SR 89A - 18th St*	*Major pavement rehabilitation*	
30.3	*Black Hills Dr: SR 89A - 0.9mi west of SR 89A*	*Major pavement rehabilitation*	
30.4	*Fir St: Chuckwalla St - Willard St*	*Major pavement rehabilitation*	
30.5	*Willard St: SR 89A - Mingus Ave*	*Major pavement rehabilitation*	
30.6	*Beaver Creek Rd: Montezuma Well Rd to Ranger Rd*	*Major pavement rehabilitation*	

Purpose and Need

This project focuses on two to four lane roadways within Cottonwood. These roadways are used by local and regional traffic to access the commercial and residential areas of Cottonwood. The segments connect to SR 89A and Cornville Rd outside of Cottonwood. The purpose of this project is to improve poor pavement conditions by rehabilitating the existing pavement.

Project Benefits

1) Extends the life of existing infrastructure; 2) improves driver experience; 3) improves safety for all modes

Environmental Impacts

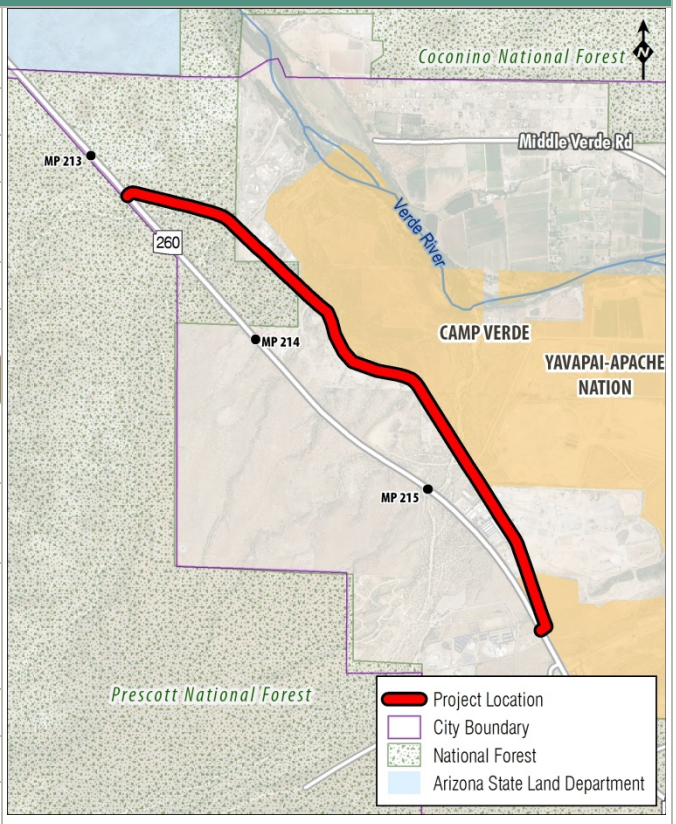
Recommended improvements will occur along an existing corridor; therefore, therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, utilities, wildlife linkages, and cultural resources. Effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies, particularly Prescott National Forest, to ensure improvements align with local and regional transportation goals.

Project #N-31: Old State Highway SR 279

Location Description:	Roadway that connects Yavapai-Apache Nation roadways to SR 260		
Responsible Agency:	Town of Camp Verde		
Project Length:	1.7 mi		
Adjacent Land Owner:	Town of Camp Verde, Prescott National Forest, Private Land		
Number of Lanes	2 lanes	**Speed Limit:**	35 mph
Functional Classification:	Local Road		



Existing and Future Conditions

Existing ADT	~100 – 1,100	**Existing LOS:**	LOS A
2040 ADT	~100 – 2,000	**2040 LOS:**	LOS A to B

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	16		
Fatal Crashes:	0	**Injury Crashes:**	2

Project Description

ID	Location	Improvement	Cost Estimate
31.1	Old State Highway 279: SR 260 to Aultman Pkwy	Major pavement rehabilitation	$722,500
31.2	Old State Highway 279: Aultman Pkwy to Clover Ranch Rd	Pave unpaved roadway	
31.3	Old State Highway 279: SR 260 to Clover Ranch Road	Major pavement rehabilitation	

Purpose and Need

Old State Highway 279 is connected to and runs roughly parallel to SR 260 on the western boundary of the Yavapai-Apache Nation. It consists of two paved segments, connected to SR 260, and an unpaved segment joining the paved segments. The road provides access to several commercial and industrial areas. The purpose of this project is to rehabilitate the pavement of the existing paved sections and to pave the unpaved section to improve access to local businesses and increase the safety of the roadway.

Project Benefits

1) Extends the life of existing infrastructure; 2) improves driver experience; 3) improves safety for all modes

Environmental Impacts

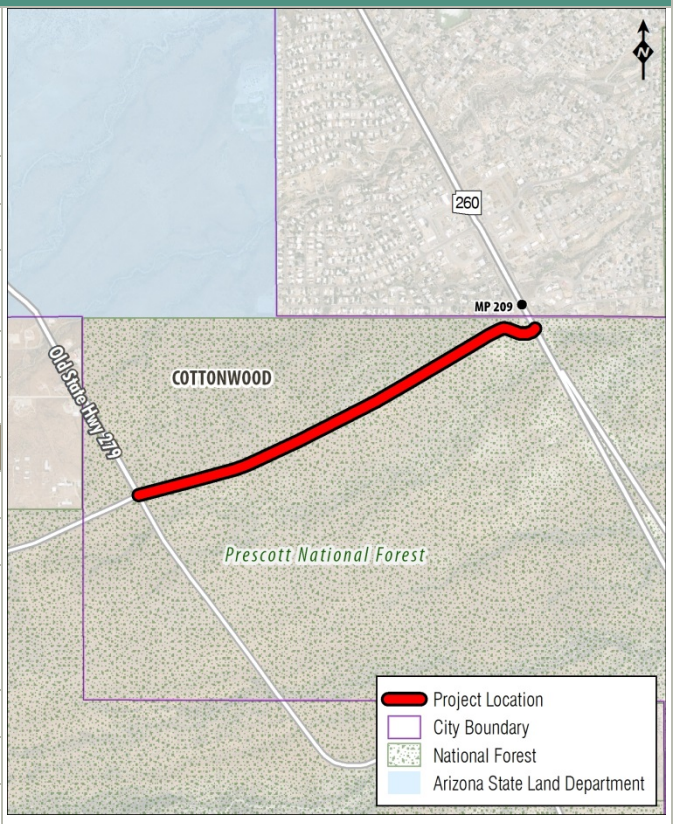
Recommended improvements will occur along an existing corridor; however, a detailed review of the existing right-of-way and coordination with Prescott National Forest will need to occur to determine negative impacts of the project on the natural environment. Consideration should be given to impacts on the natural environment, utilities, wildlife linkages, and cultural resources. Effort should be made to limit the impacts on Title VI populations during construction. As the project progresses, coordination should occur with the Prescott National Forest to assess negative impacts on the natural environment and to develop mitigation measures.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies, particularly Prescott National Forest and Yavapai-Apache Nation, to ensure improvements align with local and regional transportation goals.

Project #N-32: Ogden Ranch Rd: Camino Real to SR 260

Location Description:	Unpaved roadway linking Camino Real to SR 260 within Cottonwood; The segment connects to residential areas and serves local traffic		
Responsible Agency:	City of Cottonwood		
Project Length:	1.1 mi		
Adjacent Land Owner:	City of Cottonwood, Prescott National Forest		
Number of Lanes	2 lanes	**Speed Limit:**	N/A
Functional Classification:	Local Road		



Existing and Future Conditions

Existing ADT	~400	**Existing LOS:**	LOS A
2040 ADT	~800	**Existing LOS:**	LOS A

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	4		
Fatal Crashes:	0	**Injury Crashes:**	2

Project Description

ID	*Location*	*Improvement*	*Cost Estimate*
32.1	*Ogden Ranch Rd: Camino Real to SR 260*	*Pave unpaved roadway*	$2,249,500

Purpose and Need

Ogden Ranch Road is an unpaved roadway connecting SR 260 and Camino Real. The segment connects to residential areas and serves local traffic. The purpose of this project is to pave the unpaved roadway in order to provide additional access to the area.

Project Benefits

1) Provides additional access; 2) improves driver experience; 3) improves safety for all modes

Environmental Impacts

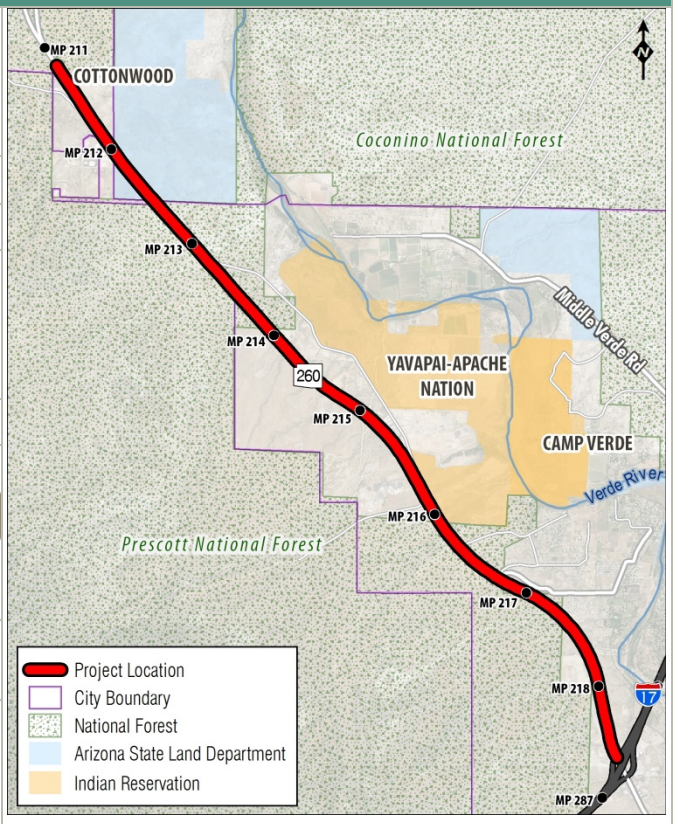
Recommended improvements will occur along an existing corridor; however, a detailed review of the existing right-of-way and coordination with Prescott National Forest will need to occur to determine negative impacts of the project on the natural environment. Consideration should be given to impacts on the natural environment, utilities, wildlife linkages, and cultural resources. Effort should be made to limit the impacts on Title VI populations during construction. As the project progresses, coordination should occur with the Prescott National Forest to assess negative impacts on the natural environment and to develop mitigation measures.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies, particularly Prescott National Forest, to ensure improvements align with local and regional transportation goals.

Project #N-33: SR 260: Thousand Trails Rd to I-17

Location Description:	Two-lane State Highway that provides local and regional access to Cottonwood, Camp Verde, and I-17; scheduled for widening in 2016		
Responsible Agency:	ADOT		
Project Length:	7.4 mi		
Adjacent Land Owner:	Town of Camp Verde, City of Cottonwood, Coconino National Forest, Arizona State Land Department, Private Land		
Number of Lanes	2-4 lanes	**Speed Limit:**	35-55 mph
Functional Classification:	Principal Arterial		



Existing and Future Conditions

Existing ADT	~15,200 – 16,800	**Existing LOS:**	LOS B to C
2040 ADT	~28,000 – 30,900	**2040 LOS:**	LOS C

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	102		
Fatal Crashes:	5	**Injury Crashes:**	33

Project Description

ID	Location	Improvement	Cost Estimate
33.1	SR 260: Thousand Trails Rd to I-17	Widen to four lane roadway Projected funded (Tracs H869901C)	$52,000,00

Purpose and Need

SR 260 is a two lane roadway that provides local and regional access to Cottonwood, Camp Verde, and I-17. It is scheduled for widening in 2016. The purpose of this project is to widen the roadway to four lanes to reduce congestion and turning movement conflicts.

Project Benefits

1) Increases roadway capacity; 2) Improves corridor safety; 3) Improves intersection safety

Environmental Impacts

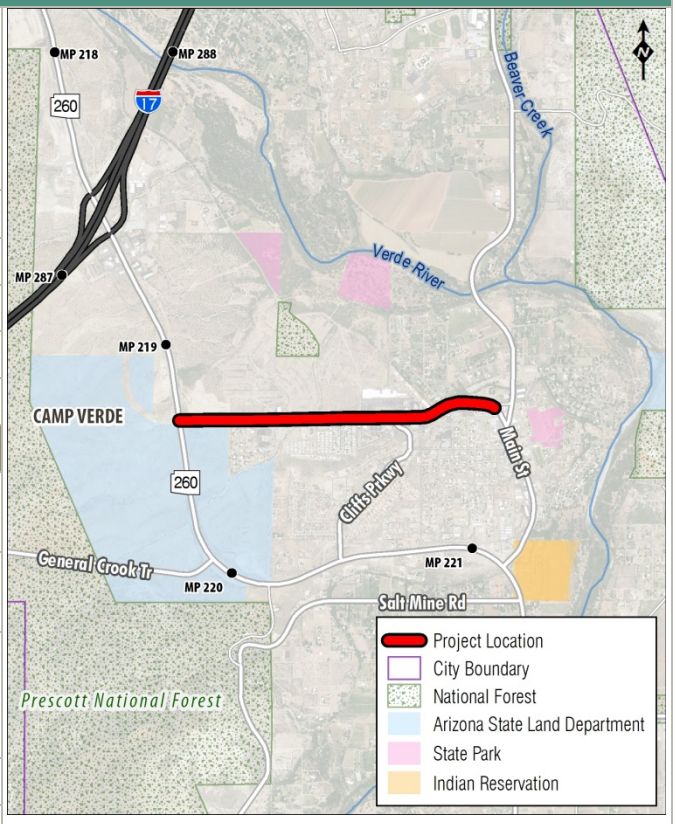
An Environmental Assessment was prepared as part of the design of the study. Please refer to the study for additional information.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies, particularly Prescott National Forest, Yavapai-Apache Nation, and the Town of Camp Verde, to ensure improvements align with local and regional transportation goals.

Project #N-34: Finnie Flat Rd: SR 260 to Main St

Location Description:	Local road that provides access to downtown Camp Verde, SR 260, and Montezuma Castle Highway; The road links residential and commercial areas of Camp Verde to SR 260		
Responsible Agency:	Town of Camp Verde		
Project Length:	1.3 mi		
Adjacent Land Owner:	Town of Camp Verde, Private Land		
Number of Lanes	2-3 lanes	**Speed Limit:**	25-35 mph
Functional Classification:	Minor Arterial		



Existing and Future Conditions

Existing ADT	~6,200 – 7,500	**Existing LOS:**	LOS B to C
2040 ADT	~8,100 – 8,500	**2040 LOS:**	LOS C to D

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	14		
Fatal Crashes:	1	**Injury Crashes:**	5

Project Description

ID	Location	Improvement	Cost Estimate
34.1	*Finnie Flat Rd: SR 260 to Main St*	*Widen roadway to a four lane arterial roadway (Complete Streets CS # 2) with bike lanes and sidewalk in both directions. Install center turn lane or median with left-turn pockets where feasible*	$2,795,000

Purpose and Need

Finnie Flat Road is a local road that provides access to downtown Camp Verde, SR 260, and Montezuma Castle Highway. The road links residential and commercial areas of Camp Verde to SR 260. The surrounding area is also targeted for future residential and commercial growth. The purpose of this project is to widen the roadway to four lanes to improve future congestion and to add pedestrian and bicycle facilities to increase safety.

Project Benefits

1) Improves safety for all modes; 2) Improves corridor safety; 3) Encourages economic development; 4) improves driver experience; 5) increases pedestrian and bicycle mobility

Environmental Impacts

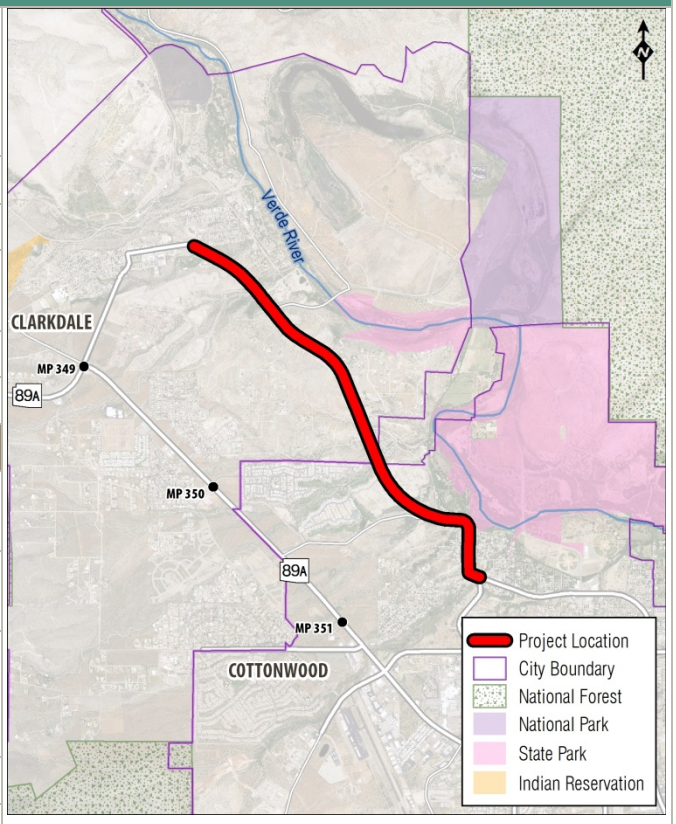
Recommended improvements will occur along an existing corridor; therefore, environmental impacts are minimal. Consideration should be given to impacts on utilities, hazardous material sites, and noise receptors. Additionally, effort should be made to limit the impacts on Title VI populations during construction of recommended improvements.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT.

Project #N-35: Broadway Rd: Main St (Cottonwood) to Main St (Clarkdale)

Location Description:	Two-lane road which is a major linkage between Cottonwood and Clarkdale; The road provides access to residential, commercial, and industrial areas		
Responsible Agency:	Multi-jurisdictional		
Project Length:	2.6 mi		
Adjacent Land Owner:	City of Cottonwood, Town of Clarkdale, Private Land		
Number of Lanes	2 lanes	**Speed Limit:**	25-45 mph
Functional Classification:	Minor Arterial and Major Collector		



Existing and Future Conditions

Existing ADT	~2,000 – 8,900	**Existing LOS:**	LOS A to B
2040 ADT	~3,500 to 12,900	**2040 LOS:**	LOS A to C

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	7		
Fatal Crashes:	1	**Injury Crashes:**	0

Project Description

ID	*Location*	*Improvement*	*Cost Estimate*
35.1	*Broadway Rd: Main St (Cottonwood) to Main St (Clarkdale)*	*Upgrade to major collector (Complete Streets CS # 1) with bike lanes and sidewalks in both directions. Install center turn lane or median with left-turn pockets where feasible.*	$332,800

Purpose and Need

Broadway Road is a two lane corridor linking Cottonwood and Clarkdale. The road provides access to residential, commercial, and industrial areas. The purpose of this project is to upgrade the road to a major collector as well as add bike and pedestrian facilities and center turn lanes in order to improve the overall safety of the corridor.

Project Benefits

1) Improves safety for all modes; 2) Improves corridor safety; 3) Encourages economic development; 4) improves driver experience; 5) increases pedestrian and bicycle mobility

Environmental Impacts

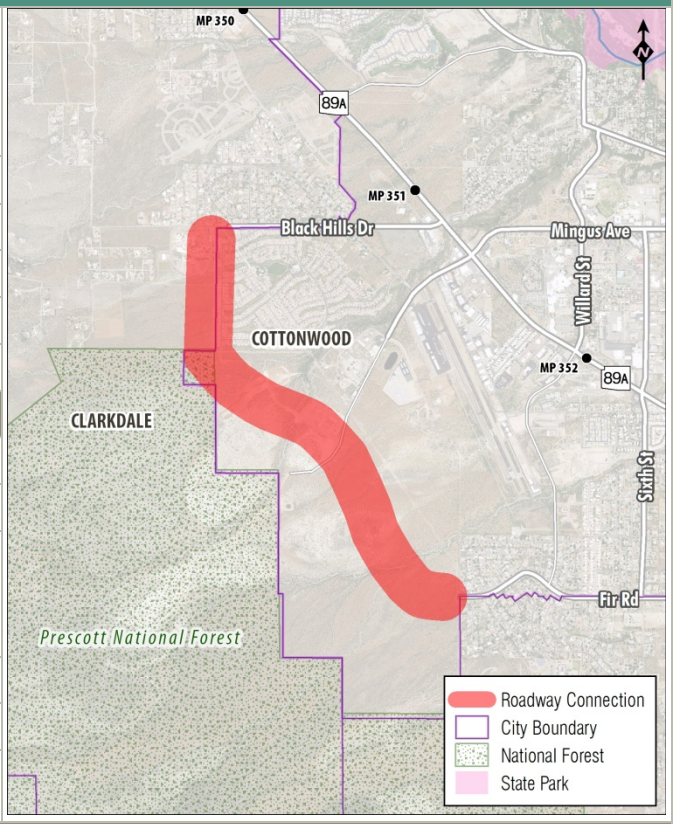
Recommended improvements will occur along an existing corridor; therefore, environmental impacts are minimal. Consideration should be given to impacts on utilities, hazardous material sites, and noise receptors. Additionally, effort should be made to limit the impacts on Title VI populations during construction of recommended improvements.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT.

Project #N-36: West Loop Phase 1: Black Hills Dr to Fir St

Location Description:	Future road connecting the western side of Cottonwood, reaching residential areas and Cottonwood Airport		
Responsible Agency:	Multi-jurisdictional		
Project Length:	~2 miles		
Adjacent Land Owner:	City of Cottonwood, Private Land		
Number of Lanes	N/A	**Speed Limit:**	N/A
Functional Classification:	N/A		



Existing and Future Conditions

Existing ADT	N/A	**Existing LOS:**	N/A
2040 ADT	N/A	**2040 LOS:**	N/A

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	N/A		
Fatal Crashes:	N/A	**Injury Crashes:**	N/A

Project Description

ID	Location	Improvement	Cost Estimate
36.1	*West Loop Phase 1: Black Hills Dr to Fir St*	*Construct two-lane minor collector (Complete Streets CS # 1) with bike lanes and sidewalks in both directions. Install center turn lane or median with left-turn pockets where feasible. Extend Black Hills Drive and Mingus Avenue to connect with West Loop Road*	$4,294,500

Purpose and Need

Due to recent and planned developments in the western portion of Cottonwood, an alternative/emergency route is needed to provide additional access to residential areas and the Yavapai College. The purpose of this project is to construct a two-lane corridor connecting Black Hills Drive to Fir Road. The corridor may alleviate some congestion on SR 89A and will provide additional routes to developments in the area.

Project Benefits

1) Provides alternative access to the residents of the area; 2) Increases mobility and circulation; 3) Provides pedestrian and bicycle facilities

Environmental Impacts

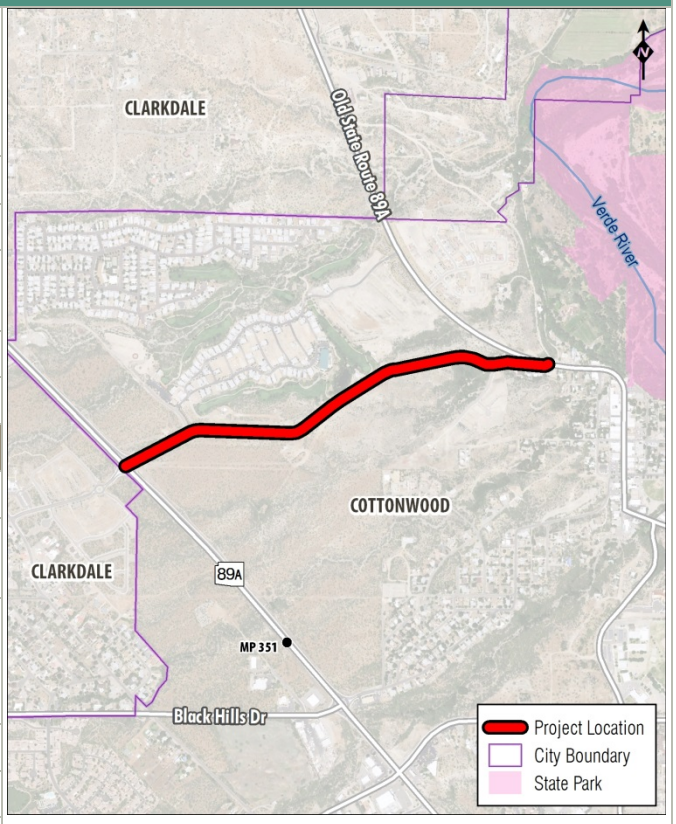
While an exact alignment is current unknown, the construction of a new corridor win the area may have physical and environmental impacts. During the alternative analysis and design phase of the study, consideration needs to be given to the impacts of the corridor on Prescott National Forest Land, the Verde River watershed, rangeland, off-highway vehicle areas, trailheads, and wildlife habitats. As the project progresses, coordination should occur with the Prescott National Forest to assess negative impacts on the natural environment and to develop mitigation measures.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT.

Project #N-37: Groseta Ranch Rd: SR 89A to North Main St

Location Description:	Unpaved road connecting Broadway to SR 89A providing alternate access to Cottonwoods residential and historic district on Broadway		
Responsible Agency:	City of Cottonwood		
Project Length:	0.9 mi		
Adjacent Land Owner:	City of Cottonwood, Town of Clarkdale, Private Land		
Number of Lanes	2 lanes	**Speed Limit:**	25-45 mph
Functional Classification:	Minor Arterial and Major Collector		



Existing and Future Conditions

Existing ADT	~600 – 700	**Existing LOS:**	LOS A
Existing ADT	~700 – 1,600	**Existing LOS:**	LOS A to B

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	No crashes occurred on the corridor		
Fatal Crashes:	N/A	**Injury Crashes:**	N/A

Project Description

ID	Location	Improvement	Cost Estimate
37.1	*Broadway Rd: Main St (Cottonwood) to Main St (Clarkdale)*	*Upgrade to major collector (Complete Streets CS # 1) with bike lanes and sidewalks in both directions. Install center turn lane or median with left-turn pockets where feasible.*	$3,676,500

Purpose and Need

Broadway Road is a two-lane corridor linking Cottonwood and Clarkdale. The road provides access to residential, commercial, and industrial areas. The purpose of this project is to upgrade the road to a major collector as well as add bike and pedestrian facilities and center turn lanes in order to improve the overall safety of the corridor.

Project Benefits

1) Improves safety for all modes; 2) Improves corridor safety; 3) provides alternative route between Cottonwood and SR 89A; 4) serves a s a truck route; 5) increases pedestrian and bicycle mobility

Environmental Impacts

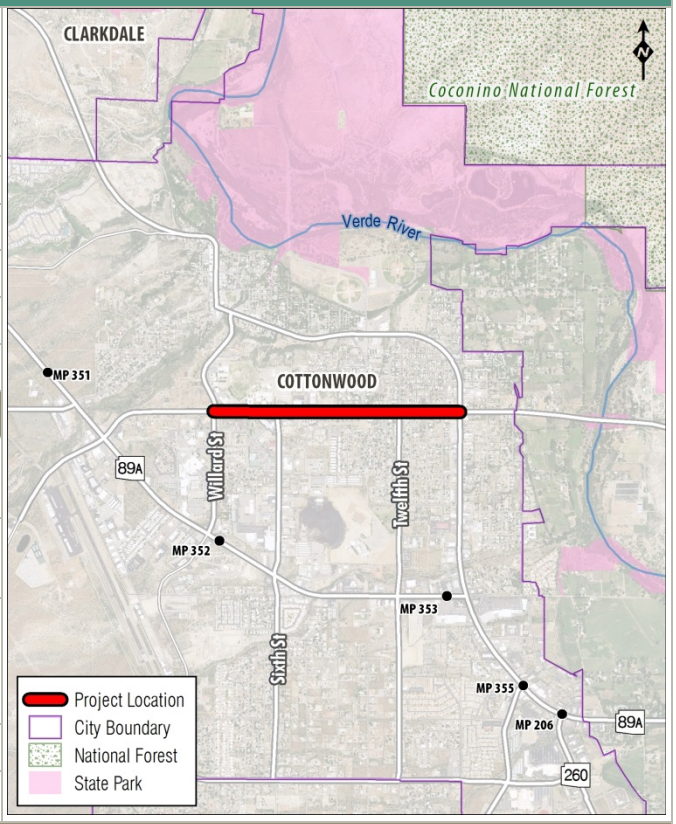
Recommended improvements will occur along an existing corridor; therefore, environmental impacts are minimal. Consideration should be given to impacts on utilities, hazardous material sites, and noise receptors. Additionally, effort should be made to limit the impacts on Title VI populations during construction of recommended improvements.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. Comments were received that right-of-way will need to be acquired to develop the corridor.

Project #N-38: Mingus Ave: North Main St to Willard St

Location Description:	Two-lane roadway with center turn lane; provides access to Cottonwood Middle School and government facilities		
Responsible Agency:	City of Cottonwood		
Project Length:	1.0 mi		
Adjacent Land Owner:	City of Cottonwood, Private Land		
Number of Lanes	2-3 lanes	**Speed Limit:**	25 mph
Functional Classification:	Minor Arterial		



Existing and Future Conditions

Existing ADT	~4,200 – 9,900	**Existing LOS:**	LOS A to B
2040 ADT	~6,500 – 13,200	**2040 LOS:**	LOS A to C

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	188		
Fatal Crashes:	5	**Injury Crashes:**	55

Project Description

ID	*Location*	*Improvement*	*Cost Estimate*
38.1	*Mingus Ave: North Main St to Willard St*	*Upgrade roadway to an arterial (Complete Streets CS # 1) with bike lanes and sidewalks in both directions. Install center turn lane or median with left-turn pockets where feasible*	$128,000

Purpose and Need

Mingus Avenue is a two-lane roadway that provides access to the Cottonwood Middle School, Yavapai County Cottonwood Annex, Cottonwood Recreation Center, US Post Office, residential areas, and other government facilities. Linking SR 89A and Main Street to numerous activity centers makes Mingus Avenue one of the most heavily utilized local roadways. The purpose of this project is: 1) improve pedestrian access to major activity centers; 2) improve traffic flow; 3) improve turning movements; 4) improve safety for all modes

Project Benefits

1) Upgrades corridor to provide safe facilities for all modes; 2) encourages economic development; 3) increases access to activity centers; 4) improves access and safety for students to the Cottonwood Middle School

Environmental Impacts

Recommended improvements will occur along an existing corridor; therefore, environmental impacts are minimal. Consideration should be given to impacts on utilities, hazardous material sites, and noise receptors. Additionally, effort should be made to limit the impacts on Title VI populations during construction of recommended improvements.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT.

Project #N-39: Main St: SR 89A to Mingus Ave

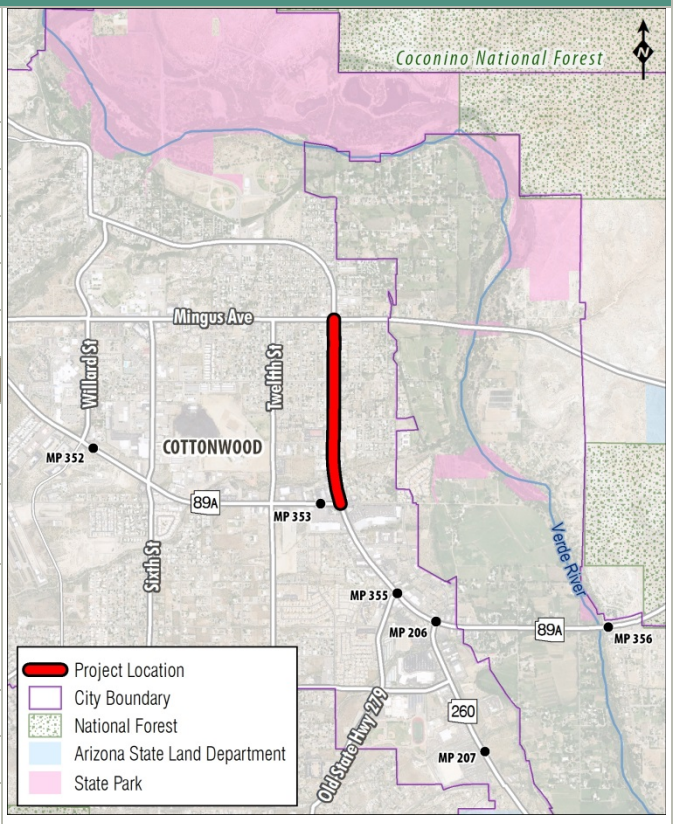
Location Description:	Four-lane road with center-turn lane, provides local access to commercial and residential areas		
Responsible Agency:	City of Cottonwood		
Project Length:	0.8 mi		
Adjacent Land Owner:	City of Cottonwood, Private Land		
Number of Lanes	5 lanes	**Speed Limit:**	35 mph
Functional Classification:	Minor Arterial		

Existing and Future Conditions

Existing ADT	~8,200 – 17,000	**Existing LOS:**	LOS B to C
2040 ADT	~11,400 – 21,500	**2040 LOS:**	LOS B to D

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	31		
Fatal Crashes:	0	**Injury Crashes:**	7



Project Description

ID	Location	Improvement	Cost Estimate
39.1	*Main St: SR 89A to Mingus Ave*	*Upgrade roadway to an arterial (Complete Streets CS # 2) with bike lanes and sidewalks in both directions. Install center turn lane or median with left-turn pockets where feasible*	$102,400

Purpose and Need

Main Street is a four-lane roadway with a center-turn lane and is one of Cottonwood's major commercial corridors. Linking SR 89A and SR 260 to Downtown Main Street makes Mingus Avenue one of the most heavily utilized local roadways. The purpose of this project is: 1) improve pedestrian access to major activity centers; 2) improve traffic flow; 3) improve turning movements; 4) improve access management

Project Benefits

1) Upgrades corridor to provide safe facilities for all modes; 2) encourages economic development; 3) increases access to activity centers; 4) increases the overall safety of the corridor

Environmental Impacts

Recommended improvements will occur along an existing corridor; therefore, environmental impacts are minimal. Consideration should be given to impacts on utilities, hazardous material sites, and noise receptors. Additionally, effort should be made to limit the impacts on Title VI populations during construction of recommended improvements.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT.

Project #N-40: Fir St Extension: SR 260 to SR 89A

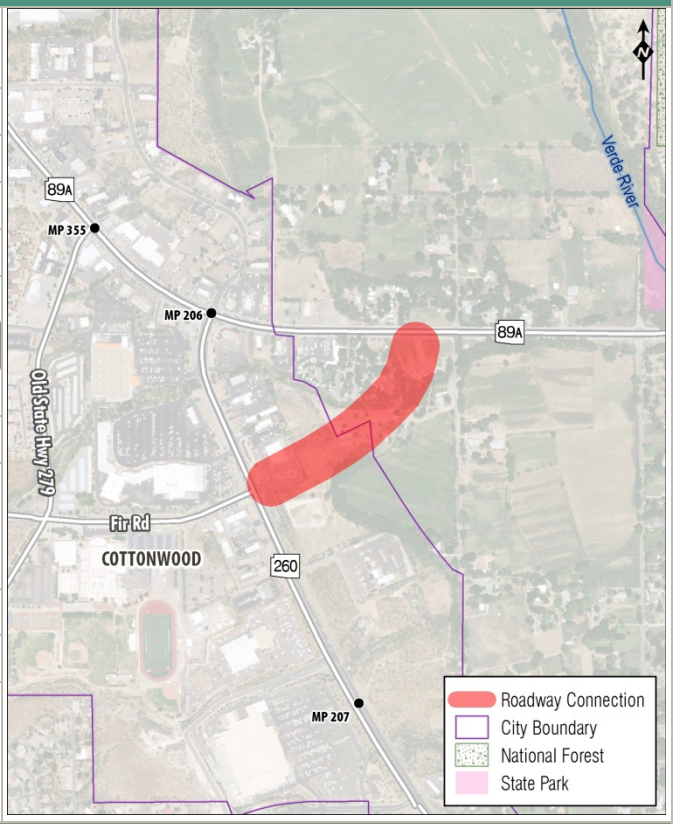
Location Description:	New road will provide access between SR 260 and SR 89A in Cottonwood.		
Responsible Agency:	Multi-jurisdictional		
Project Length:	< 1 mile		
Adjacent Land Owner:	City of Cottonwood, Private Land		
Number of Lanes	N/A	**Speed Limit:**	N/A
Functional Classification:	N/A		

Existing and Future Conditions

Existing ADT	N/A	**Existing LOS:**	N/A
2040 ADT	N/A	**2040 LOS:**	N/A

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	N/A		
Fatal Crashes:	N/A	**Injury Crashes:**	N/A



Project Description

ID	*Location*	*Improvement*	*Cost Estimate*
40.1	*Fir St Extension: SR 260 to SR 89A*	*Extend Fir Street to SR 89A as a four lane minor collector roadway*	$1,345,500

Purpose and Need

The purpose of this project is to construct a four-lane corridor connecting SR 260 to SR 89A in Cottonwood. The SR 89A/SR 260 intersection is a critical intersection centrally located along Cottonwood's commercial corridors. As one of the busiest intersections in the Verde Valley, the intersection experiences significant congestion and vehicle crashes. Creating a bypass route would assist in alleviate congestion at the SR 89A/SR 260 intersection and assist in improving emergency access.

Project Benefits

1) Increases mobility and circulation; 2) redirections traffic from SR 89A/SR260 intersection; 3) improves emergency services

Environmental Impacts

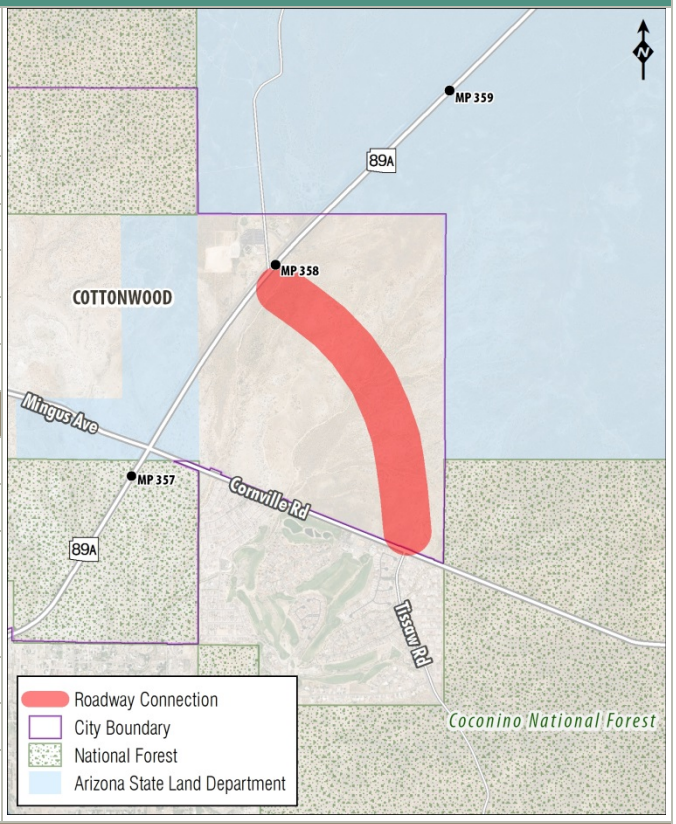
While an exact alignment is currently unknown, the construction of a new corridor within the area may have physical and environmental impacts. During the alternative analysis and design phase of the study, consideration should be given to impacts on the natural environment, protected species, wildlife linkages, utilities, hazardous material sites, noise receptors, visual resources, and cultural resources. Effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT.

Project #N-41: Tissaw Rd: Cornville Rd to SR 89A

Location Description:	Future roadway connecting SR 89A and Cornville Road through planned residential community (scheduled for development in the near-term)		
Responsible Agency:	Private Developer		
Project Length:	~1.3 miles		
Adjacent Land Owner:	City of Cottonwood, Private Land		
Number of Lanes	N/A	**Speed Limit:**	N/A
Functional Classification:	N/A		



Existing and Future Conditions

Existing ADT	N/A	**Existing LOS:**	N/A
2040 ADT	N/A	**2040 LOS:**	N/A

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	N/A		
Fatal Crashes:	N/A	**Injury Crashes:**	N/A

Project Description

ID	Location	Improvement	Cost Estimate
41.1	Tissaw Rd: Cornville Rd to SR 89A	Coordinate with developer to construct a four-lane major collector roadway. This project is recommended to be constructed as development occurs at the northwest corner of the Cornville Road/SR 89A intersection	$5,830,500

Purpose and Need

The purpose of this project is to construct a two-lane corridor connecting Cornville Road to SR 89A. The SR 89A/Cornville Road intersection is a critical intersection that provides access to residential areas along Cornville Road. Currently, the intersection experiences a high congestion and a significant number of crashes. Planned developments along Cornville Road will only add to the already congested intersection. Creating a bypass route would assist in alleviating congestion at the SR 89A/Cornville Road intersection.

Project Benefits

1) Increases mobility and circulation; 2) redirects traffic from SR 89A/Cornville Road intersection; 3) improves emergency services; 4) accommodates future development

Environmental Impacts

As the project progresses and the master plan development is constructed, additional environmental analysis will need to occur to determine the impacts of the new road on the natural environment. Consideration should be given to impacts on the natural environment, utilities, wildlife linkages, and cultural resources. Effort should be made to limit the impacts on Title VI populations during construction. During the design phase, coordination should occur with the Coconino National Forest and Arizona State Land Department to assess negative impacts on the natural environment and to develop mitigation measures.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT.

Project #N-42: Brewer Rd - Ranger Rd Connection

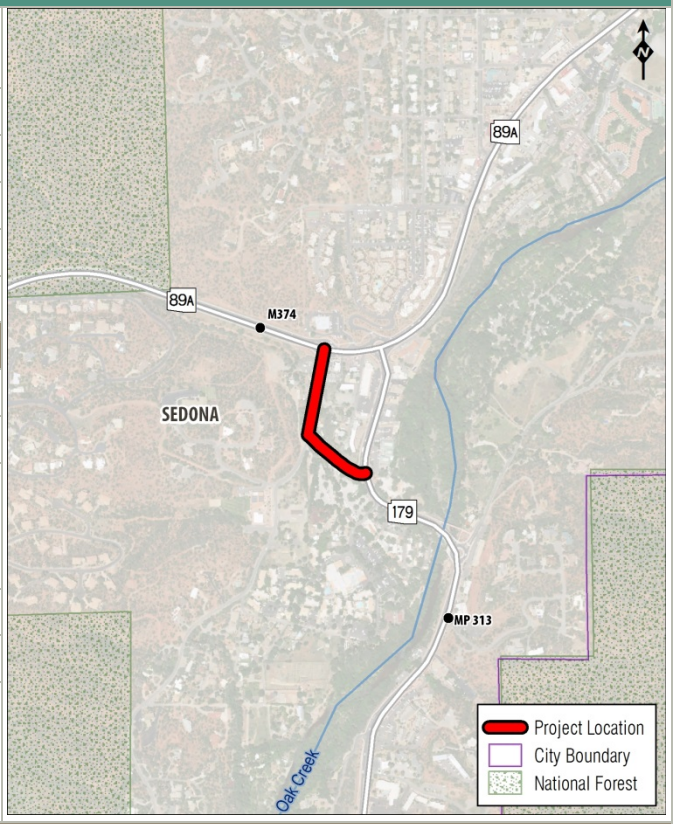
Location Description:	Local, two-lane roadway utilized to bypass the SR 89A/SR 179 intersection		
Responsible Agency:	City of Sedona		
Project Length:	0.2 mi		
Adjacent Land Owner:	City of Sedona, Private Land		
Number of Lanes	2 lanes	**Speed Limit:**	25 mph
Functional Classification:	Local Roadway		

Existing and Future Conditions

Existing ADT	<1,000	**Existing LOS:**	LOS A
2040 ADT	<1,000	**2040 LOS:**	LOS A

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	No crashes occurred on the corridor		
Fatal Crashes:	N/A	**Injury Crashes:**	N/A



Project Description

ID	Location	Improvement	Cost Estimate
42.1	Brewer Rd - Ranger Rd Connection	Conduct a study to evaluate upgrading the corridor to a paved two-lane roadway. The study should include: Traffic demand analysis, evaluation of constructability, and environmental impacts analysis	$25,600

Purpose and Need

The purpose of this project is to conduct a corridor specific study that: 1) analyze the impacts of paving the corridor on the transportation networks congestion levels; 2) evaluate the feasible of paving the corridor; 3) analyze potential environmental constraints. Schnebly Hill Road is currently a primitive, unpaved roadway that connects Sedona to I-17. Traveling through the Coconino National Forest, the corridor provides scenic views of Sedona and is heavily utilized by off-road vehicles.

Project Benefits

1) provides an emergency/alternative route between I-17 and Sedona; 2) improves roadway conditions for tourists

Environmental Impacts

Recommended improvements developed as part of the study will occur along an existing corridor; therefore, environmental impacts are minimal. Consideration should be given to impacts on utilities, hazardous material sites, and noise receptors. Additionally, effort should be made to limit the impacts on Title VI populations during construction of recommended improvements.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT.

Project #N-43: Schnebly Hill Rd - SR 179 to I-17

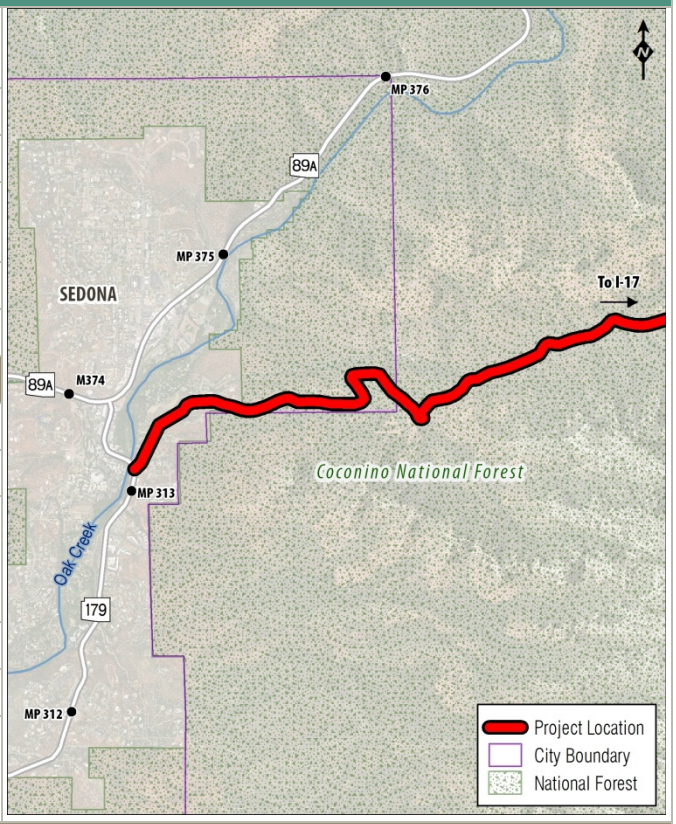
Location Description:	Unpaved, scenic road that connects Sedona to I-17; mountainous terrain		
Responsible Agency:	Multi-jurisdictional		
Project Length:	12.0 mi		
Adjacent Land Owner:	City of Sedona, Coconino National Forest, Private Land		
Number of Lanes	N/A	**Speed Limit:**	N/A
Functional Classification:	Local Road		

Existing and Future Conditions

Existing ADT	N/A	**Existing LOS:**	N/A
2040 ADT	N/A	**2040 LOS:**	N/A

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	N/A		
Fatal Crashes:	N/A	**Injury Crashes:**	N/A



Project Description

ID	Location	Improvement	Cost Estimate
43.1	Schnebly Hill Rd - SR 179 to I-17	Conduct a study to evaluate upgrading the corridor to a paved two-lane roadway. The study should also include: traffic demand analysis, evaluation of constructability, and environmental impacts analysis	$200,000

Purpose and Need

The purpose of this project is to conduct a corridor specific study that: 1) analyze the impacts of paving the corridor on the transportation networks congestion levels; 2) evaluate the feasible of paving the corridor; 3) analyze potential environmental constraints. Schnebly Hill Road is currently a primitive, unpaved roadway that connects Sedona to I-17. Traveling through the Coconino National Forest, the corridor provides scenic views of Sedona and is heavily utilized by off-road vehicle

Project Benefits

1) provides an emergency/alternative route between I-17 and Sedona; 2) improves roadway conditions for tourists

Environmental Impacts

During the study, close collaboration should occur with representatives of Coconino National Forest in order to determine the feasibility and environmental impacts of paving the roadway. As the project progresses, additional analysis will need to occur to determine the impacts of paving the corridor on the natural and cultural environment. Consideration should be given to the impacts on erosion, roadside soils, vegetation health, wildlife linkages, and cultural resources. During the design phase, coordination should occur with the Coconino National Forest to assess negative impacts on the natural environment and to develop mitigation measures.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. Representatives from the Coconino Forest commented that additional coordination needs to occur to determine if proposed improvements align with the Land and Resource Management Plan for the Coconino National Forest and is compliant with NEPA.

Project #N-44: Red Rock Crossing

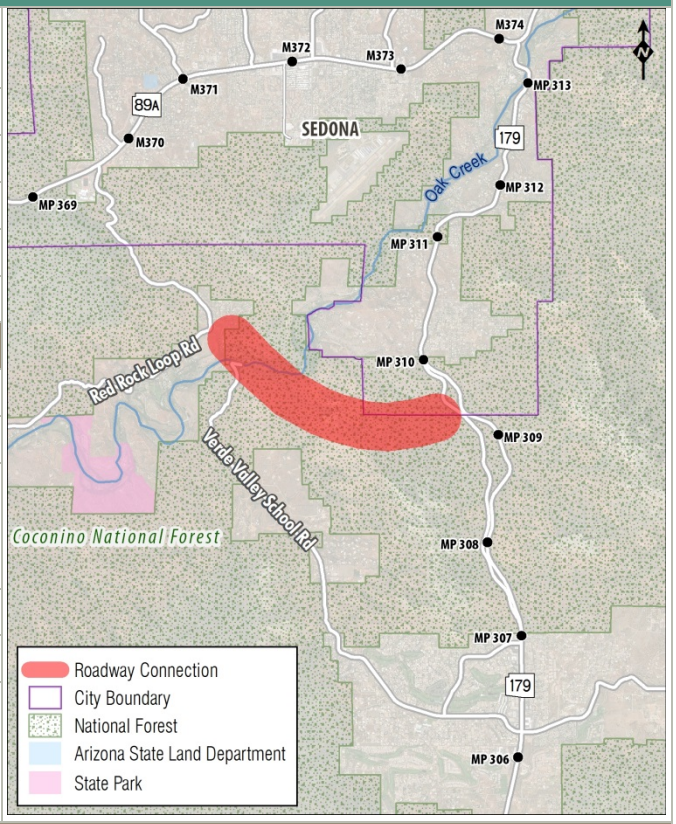
Location Description:	Potential Road that would link Red Rock Loop Road to SR 179		
Responsible Agency:	Multi-jurisdictional		
Project Length:	N/A		
Adjacent Land Owner:	N/A		
Number of Lanes	N/A	**Speed Limit:**	N/A
Functional Classification:	N/A		

Existing and Future Conditions

Existing ADT	N/A	**Existing LOS:**	N/A
2040 ADT	N/A	**2040 LOS:**	N/A

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	N/A		
Fatal Crashes:	N/A	**Injury Crashes:**	N/A



Project Description

ID	*Location*	*Improvement*	*Cost Estimate*
44.1	*Red Rock Crossing*	*Conduct a feasibility study for a new connection from SR 179 to west Sedona. The study should include: Evaluation of Oak Creek crossing locations, future traffic demand analysis, and environmental assessment*	$100,000

Purpose and Need

The purpose of this project is to construct a two-lane corridor connecting SR 179 to Red Rock Loop Road to provide a local bypass route for Village of Oak Creek residents to access medical and commercial facilities in West Sedona. Currently, Village of Oak Creek residents must utilize SR 179 and enter the SR 89A/SR 179 intersection to access activity centers along SR 89A. Creating a bypass route would assist in alleviating some congestion along SR 179 and would provide local residents with alternative/emergency route.

Project Benefits

1) Improve corridor safety; 2) Improve pedestrian and bicycle mobility; 3) Encourage economic development

Environmental Impacts

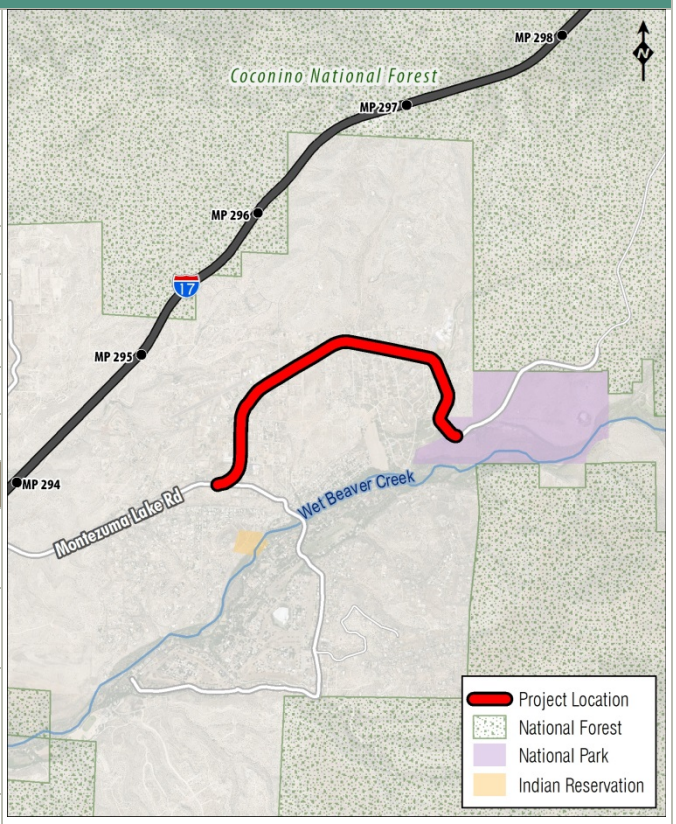
While an exact alignment is current unknown, the construction of a new corridor win the area may have physical and environmental impacts. During the alternative analysis and design phase of the study, consideration needs to be given to the impacts of the corridor on National Forest Land, biological and riparian habitats along the Oak Creek, drainage and soil erosion. As the project progresses, coordination should occur with the Coconino National Forest, Yavapai County, and the City of Sedona to determine the appropriate alignment.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT.

Project #N- 45: Beaver Creek Rd: Montezuma Ave to Montezuma Well Rd

Location Description:	Two lane roadway linking Montezuma Ave to Montezuma Well Rd; This road also connects to Montezuma Well National Park and would be utilized as the main access point for its tourism from I-17		
Responsible Agency:	Yavapai County		
Project Length:	2.1 mi		
Adjacent Land Owner:	Private Land		
Number of Lanes	2-3 lanes	**Speed Limit:**	35-45 mph
Functional Classification:	Minor Collector		



Existing and Future Conditions

Existing ADT	~1,700 – 4,000	**Existing LOS:**	A to C
2040 ADT	~3,700 – 7,000	**2040 LOS:**	B to E

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	6		
Fatal Crashes:	0	**Injury Crashes:**	1

Project Description

ID	Location	Improvement	Cost Estimate
45.1	*Beaver Creek Rd: Montezuma Ave to Montezuma Well Rd*	*Upgrade functional classification to Major Collector*	N/A

Purpose and Need

Beaver Creek Road is a two-lane road that is utilized heavily by tourists visiting Montezuma Well National Monument, commuters to regional employment centers, and by local traffic accessing business along the roadway. The roadway is also the main school bus route for the Rimrock Public High School and the Beaver Creek Elementary School. The purpose of this project is to upgrade the corridor's functional classification in order to preserve future right-of-way and to widen the corridor to four-lanes and install pedestrian and bicycle facilities.

Project Benefits

1) Upgrades corridor to provide safe facilities for all modes; 2) encourages economic development; 3) increases access to activity centers; 4) increases the overall safety of the corridor

Environmental Impacts

Recommended improvements will occur along an existing corridor; therefore, environmental impacts are minimal. Consideration should be given to impacts on utilities, hazardous material sites, and noise receptors. Additionally, effort should be made to limit the impacts on Title VI populations during construction of recommended improvements.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015, respectively. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Prescott and Coconino National Forests, and ADOT.

Mid-Term Improvements

Mid-term projects are more complex projects that improve safety, expand mobility and access, or address future development needs. Table 8.2 and Figure 8.2 present a list of the transportation recommendations for this phase, as well as the project number, location, and descriptions for each project. *Each project is assigned a unique project number; project numbering does not represent the priority of the project but rather it is an identification number to track project progress. Unless otherwise noted, funding has not been secured for additional studies, design, purchase of right-of-way, or construction. As each project progresses into the concept and design phase, close coordination with the Prescott and Coconino Forest should occur to assess if there are available solutions on non-federal land. All federally funded projects are also subject to the National Environmental Policy Act (NEPA) process, which identifies projects potential environmental impacts and ensures that subsequent mitigation measures are addressed and implemented appropriately through construction. Planning level cost estimates were developed based on typical per-mile/foot construction costs. Estimated costs for each project are expressed in 2015 dollars and do not include costs associated with right-of-way acquisitions, design, utility relocation, environmental clearance, etc. Actual costs for projects could vary at the time of implementation; therefore, a detailed analysis should be performed on a case-by-case basis to determine actual costs. Unless otherwise noted, the recommended projects are not yet funded.*

Table 8.2: Recommended Mid-Term Improvement Projects

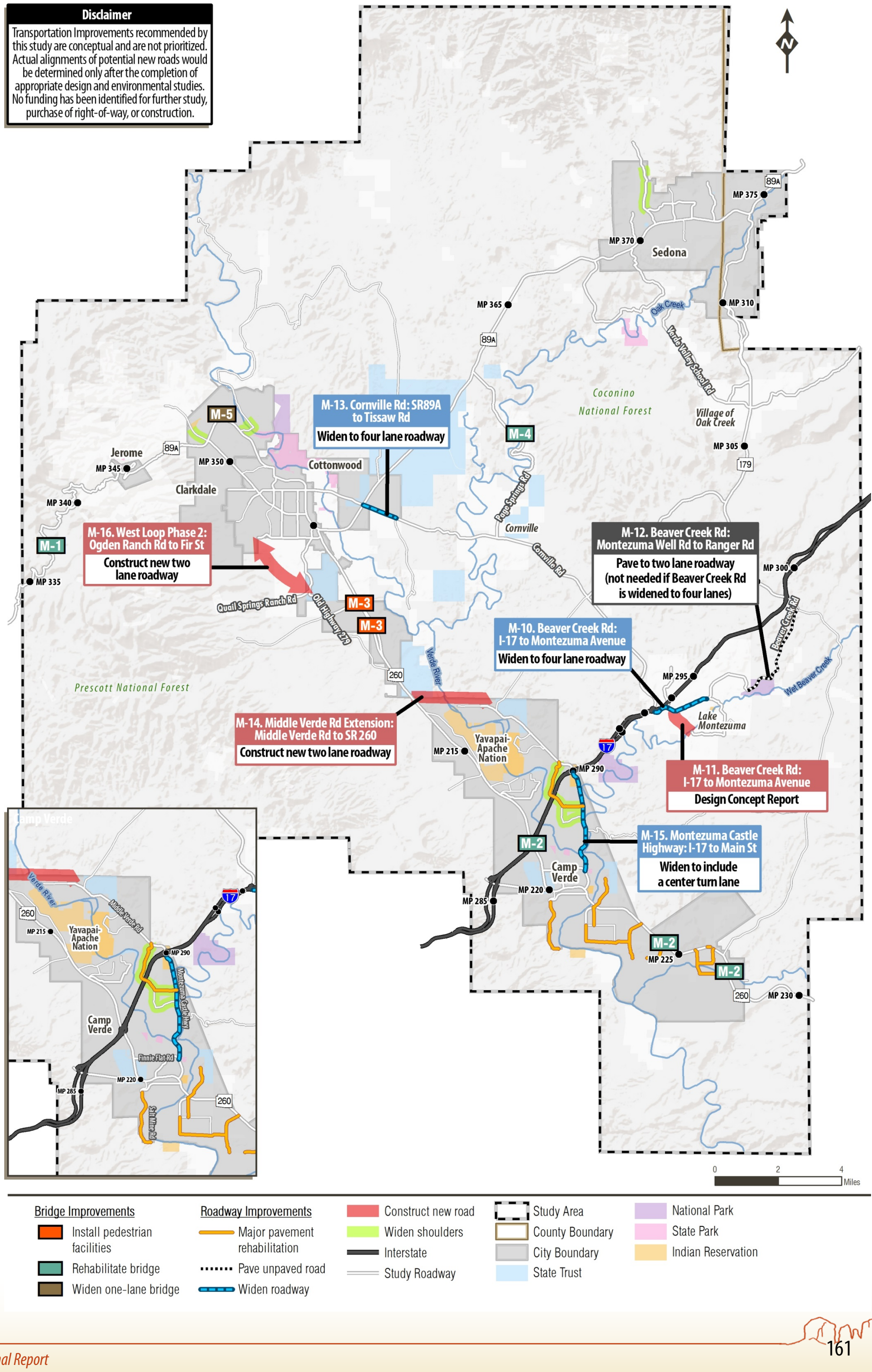
ID	Project Location and Description	Project Benefits	Cost Estimate
Bridge Improvement Projects			
Arizona Department of Transportation			
M-1	**SR 89A (MP 339.16) - Bridge #133 (Wash)** *Rehabilitate bridge*	Prevents increased deterioration; extends life of bridge; improves safety	$800,000
M-2	**SR 260 Bridge Rehabilitation**	Prevents increased deterioration; extends life of bridge; improves safety	$2,400,000
M-2.1	*SR 260 (MP 287.27) - Bridge #2575 (I-17)*		
M-2.2	*SR 260 (MP 224.43) - Bridge #2300 (Wickiup Wash)*		
M-2.3	SR 260 (MP 227.05) - Bridge #2301 (West Clear Creek)		
M-3	**Reconstruct Bridge to include Pedestrian Facilities**	Increased pedestrian and bicyclist access	$7,000,000
M-3.1	*SR 260 (MP 209.88) - Bridge #758 (Black Canyon Wash)*		
M-3.2	*SR 260 (MP 210.55) - Bridge #781 (Wilbur Canyon)*		
Yavapai County			
M-4	**Page Springs Rd - Bridge #9102 (Oak Creek)** *Rehabilitate bridge*	Prevents increased deterioration; extends life of bridge; improves safety	$800,000
M-5	**Broadway - Bridge #8488 (Bitter Creek)** *Widen One-Lane Bridge*	Increased capacity for trucks and tourists	$390,000
Shoulder Improvements			
Local Jurisdiction			
M-6	**Clarkdale: Widen shoulders from 0 FT to 5 FT**	Increases safety for all modes; improves emergency response	$652,500
M-6.1	*Cement Plant Rd*		
M-6.2	*Tuzigoot Rd*		
M-6.3	*Sycamore Canyon Rd*		
M-7	**Dry Creek Rd: Thunder Mountain Rd - Long Canyon Rd** *Widen shoulders from 0 FT to 5 FT*	Increases safety for all modes; improves emergency response	$565,500
M-8	**Camp Verde: Widen shoulders from 0 FT to 5 FT**	Increases safety for all modes; improves emergency response	$1,566,000
M-8.1	*Arena del Loma*		
M-8.2	*Boot Hill Dr*		
M-8.3	*Apache Trail*		

Table 8.2: Recommended Mid-Term Improvement Projects (Continued)

ID	Project Location and Description	Project Benefits	Cost Estimate
Roadway Surface Treatment Improvements			
Local Jurisdiction			
M-9	**Camp Verde: Pavement Preservation**	Extends life of existing infrastructure	$635,000
M-9.1	Aspen Way: SR 260 - Catclaw Drive		
M-9.2	*Arena del Loma*		
M-9.3	*Salt Mine Rd*		
M-9.4	*Verde Park Dr*		
M-9.5	*Verde Lakes Dr: SR 260 - Clinton Lane*		
M-9.6	*Murdock Rd: Quarterhorse Ln - Stolen Blvd*		
M-9.7	*Quarterhorse Ln: Stolen Blvd - Verde Park Dr*		
M-9.8	*Clinton Ln: Verde Lakes Drive - Creek View Dr*		
M-9.9	*McCracken Rd: SR 260 - 0.1mi north of Lena Dr*		
M-9.10	*Creek View Dr: Clinton Lane - Chino Dr*		
M-9.11	*Sierra Verde Rd: SR 260 - Sierra Ln*		
M-9.12	*Catclaw Dr: Verde Lakes Dr - Aspen Way*		
Roadway Capacity Improvements			
Yavapai County			
M-10	**Beaver Creek Rd: I-17 to Montezuma Avenue*** *Widen to four lane arterial roadway and install center turn lane or median where feasible.*	Improves congestion; improves safety for all modes; provides pedestrian and bicycle facilities	$387,000
M-11	**New Road: Beaver Creek Rd to Montezuma Ave** *Conduct Design Concept Report for New Road between Beaver Creek Road and Montezuma Avenue in the vicinity of Brocket Ranch Road.*	Provides alternative/emergency route to residents residing south of Beaver Creek; provides pedestrian and bicycle facilities	N/A
M-12	**Beaver Creek Rd: Montezuma Well Rd to Ranger Rd** *Pave unpaved roadway to a two lane minor collector roadway. This project is not needed if Beaver Creek Road is widened to four lanes between I-17 and Montezuma Avenue (M-12).*	Provides alternative/emergency route to Lake Montezuma; reduces congestion on Beaver Creek Road in Lake Montezuma	$6,953,000
M-13	**Cornville Rd: SR 89A to Tissaw Rd** *Widen roadway to four lane arterial roadway with bike lanes and sidewalks in both directions. Install center turn lane or median with left-turn pockets where feasible.*	Relieves congestion; improves safety for all modes; provides pedestrian and bicycle facilities	$236,500
Camp Verde			
M-14	**Middle Verde Rd Extension: Middle Verde Rd to SR 260** *Extend Middle Verde Road as a two lane minor collector (Complete Streets CS # 1) with bike lanes and sidewalk in both directions. Bridge will need to be constructed over Verde River.*	Provides alternative/emergency route to Yavapai-Apache Nation; increases access for all modes; encourage economic development	$7,737,500
M-15	**Montezuma Castle Highway: I-17 to Main St** *Widen corridor to include a center turn lane*	Improves corridor safety	$1,716,000
M-16	**West Loop Phase 2: Ogden Ranch Rd to Fir St** *Construct two lane minor collector (Complete Streets CS # 1) with bike lanes and sidewalks in both directions. Install center turn lane or median with left-turn pockets where feasible.*	Increases mobility and circulation; provide additional pedestrian and bicycle facilities	$3,067,500

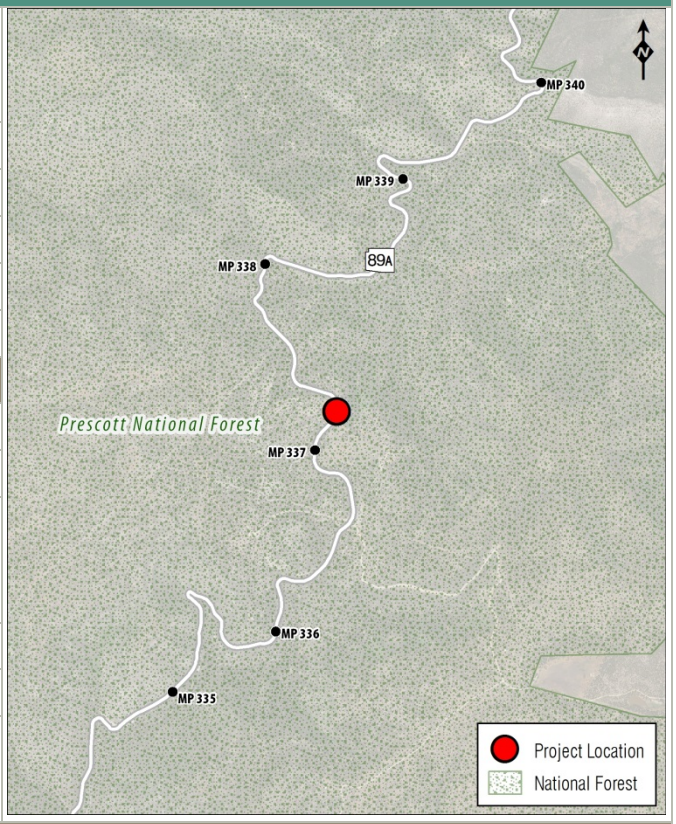
**During the public meetings, county residents expressed a strong interest in pedestrian and bicycles amenities along county roads. Yavapai County Resolution NO. 1036 contains the adopted roadway cross sections for all County roads which dictate the roadway design and include a 4 foot shoulders beyond the travel lane which provides for multimodal uses. County residents could work with their public officials to begin a dialogue on how to amend the resolution to include modified multimodal amenities in the roadway cross sections.*

Figure 8.2: Recommended Mid-Term Improvement Projects



Project #M-1: SR 89A (MP 339.16) - Bridge #133 (Wash)

Location Description:	Two-lane state highway; constructed in 1935; 24 FT in length; concrete slab structure		
Responsible Agency:	ADOT		
Project Length:	24 FT		
Adjacent Land Owner:	Prescott National Forest		
Number of Lanes	2 lanes	**Speed Limit:**	30 mph
Functional Classification:	Major Collector		



Existing and Future Conditions

Existing ADT	~1,400	**Existing LOS:**	LOS A
2040 ADT	~2,100	**2040 LOS:**	LOS A

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	No crashes occurred at bridge		
Fatal Crashes:	N/A	**Injury Crashes:**	N/A

Project Description

ID	*Location*	*Improvement*	*Cost Estimate*
1.1	*SR 89A (MP 339.16) - Bridge #133 (Wash)*	*Rehabilitate bridge*	$800,000

Purpose and Need

Structure #133 is located at on the scenic SR 89A west of Jerome. This bridge is located on a major tourist and commuter route between the Verde Valley and Prescott region. If the structure were to fail, motorists would need to utilize an alternative route, which would significantly increase travel times. Listed in the Arizona State Highway Bridge Inventory as having a sufficiency rating of 77.9, the structure requires rehabilitation to improve its condition. The purpose of this project is to repair the bridge in order to meet bridge sufficiency standards.

Project Benefits

1) Upgrades structurally deficient bridge to meet federal standards; 2) extends the life of current facilities; 3) improves safety for the traveling public

Environmental Impacts

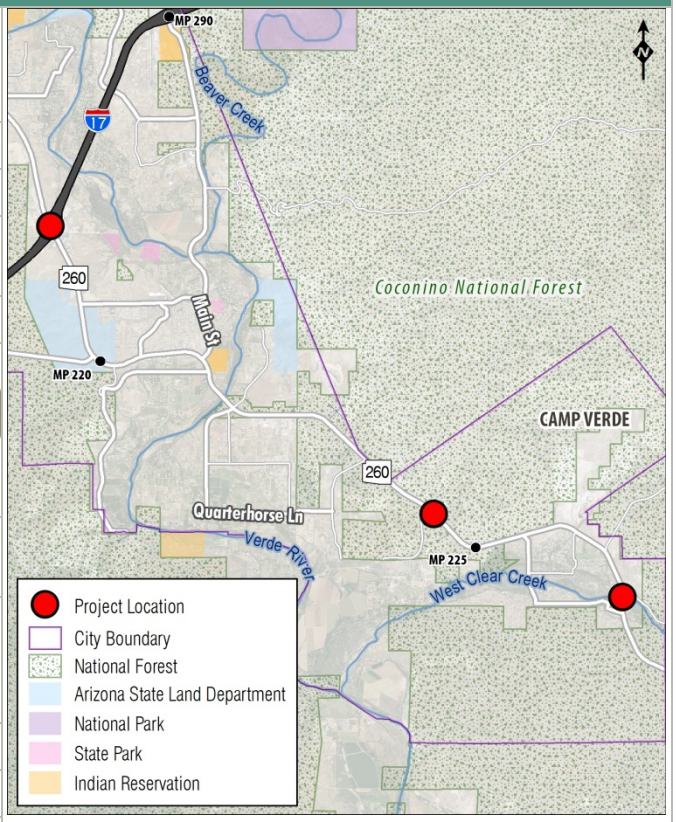
Improvements are located at an existing structure; therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, projected species, wildlife linkages, and cultural resources. Additionally, effort should be made to limit the impacts on Title VI populations during construction. As the project progresses, coordination should occur with the Prescott National Forest to assess negative impacts on the natural environment and to develop mitigation measures.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies to ensure improvements align with local and regional transportation goals.

Project #M-2: SR 260 Bridge Rehabilitation

Location Description:	Three structures between 107 and 300 FT in length; located along major regional corridor		
Responsible Agency:	ADOT		
Project Length:	107 to 300 FT		
Adjacent Land Owner:	Town of Camp Verde, Coconino National Forest, Private Land		
Number of Lanes	2-4 lanes	**Speed Limit:**	35-55 mph
Functional Classification:	Minor Arterial		



Existing and Future Conditions

Existing ADT	~2,700 – 15,400	**Existing LOS:**	LOS A to B
2040 ADT	~3,800 – 26,500	**2040 LOS:**	LOS A to C

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	No crashes occurred at bridge		
Fatal Crashes:	N/A	**Injury Crashes:**	N/A

Project Description

ID	Location	Improvement	Cost Estimate
2.1	SR 260 (MP 287.27) - Bridge #2575 (I-17)	Rehabilitate bridge	$2,400,000
2.2	SR 260 (MP 224.43) - Bridge #2300 (Wickiup Wash)	Rehabilitate bridge	
2.3	SR 260 (MP 227.05) - Bridge #2301 (West Clear Creek)	Rehabilitate bridge	

Purpose and Need

Located on SR 260, the three structures are on a major regional connector that serves residents of Camp Verde and regional traffic within the Verde Valley. The corridor experiences high traffic volumes and vehicle speeds. Listed in the Arizona State Highway Bridge Inventory as having sufficiency ratings between 77 and 79, the structures require rehabilitation to improve their condition. The purpose of this project is to repair these bridges in order to meet bridge sufficiency standards.

Project Benefits

1) Upgrades structurally deficient bridge to meet federal standards; 2) extends the life of current facilities; 3) improves safety for the traveling public

Environmental Impacts

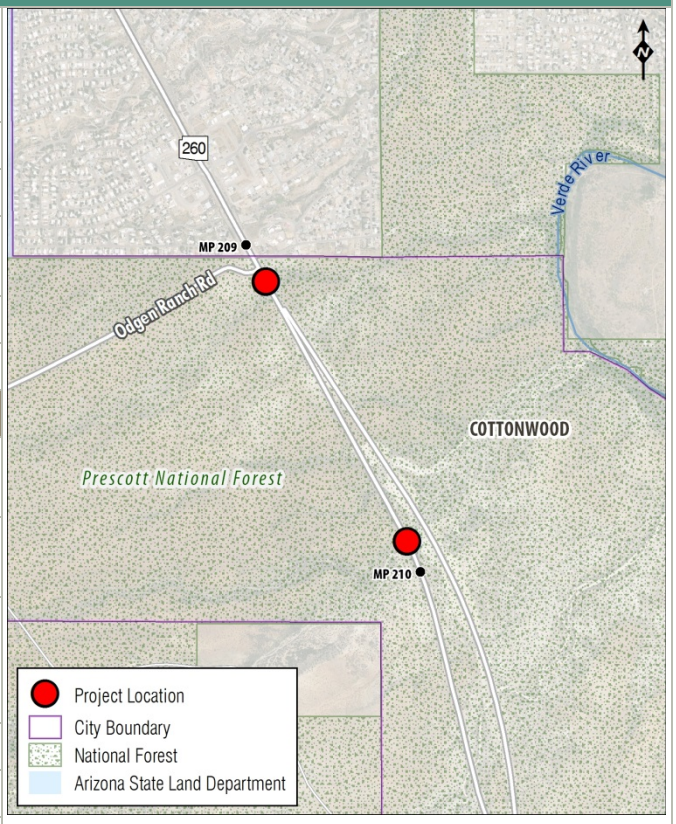
Improvements are located at an existing structure; therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, projected species, wildlife linkages, and cultural resources. Additionally, effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies to ensure improvements align with local and regional transportation goals.

Project #M-3: Reconstruct Bridge to include Pedestrian Facilities

Location Description:	Two structures on a four-lane divided highway; both constructed in 1963; between 184 and 274 FT in length		
Responsible Agency:	ADPT		
Project Length:	184 to 274 FT		
Adjacent Land Owner:	City of Cottonwood, Prescott National Forest		
Number of Lanes	2 lanes	**Speed Limit:**	45-55 mph
Functional Classification:	Principal Arterial		



Existing and Future Conditions

Existing ADT	~15,700 – 15,800	**Existing LOS:**	LOS A to B
2040 ADT	~28,300 – 29,000	**2040 LOS:**	LOS C

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	No crashes occurred at bridge		
Fatal Crashes:	N/A	**Injury Crashes:**	N/A

Project Description

ID	Location	Improvement	Cost Estimate
3.1	SR 260 (MP 209.88) - Bridge #758 (Black Canyon Wash)	Reconstruct bridge to include pedestrian facilities	$7,000,000
3.2	SR 260 (MP 210.55) - Bridge #781 (Wilbur Canyon)	Reconstruct bridge to include pedestrian facilities	

Purpose and Need

Structures #758 and #781 are on SR 260, a major regional corridor that connects I-17/Camp Verde to Cottonwood and SR89A. The SR 260 corridor experiences high traffic volumes and vehicle speeds and is heavily utilized by pedestrians and bicyclists. The structures currently lack safe pedestrian facilities, forcing pedestrians to enter travel lanes. As listed in Arizona State Highway Bridge Inventory, the structures' sufficiency rating is 82.4, which requires no structural improvements. The purpose of this project is to reconstruct the bridges to include facilities for pedestrians and bicyclists.

Project Benefits

1) Increased pedestrian and bicyclist access; 2) improves safety for the traveling public

Environmental Impacts

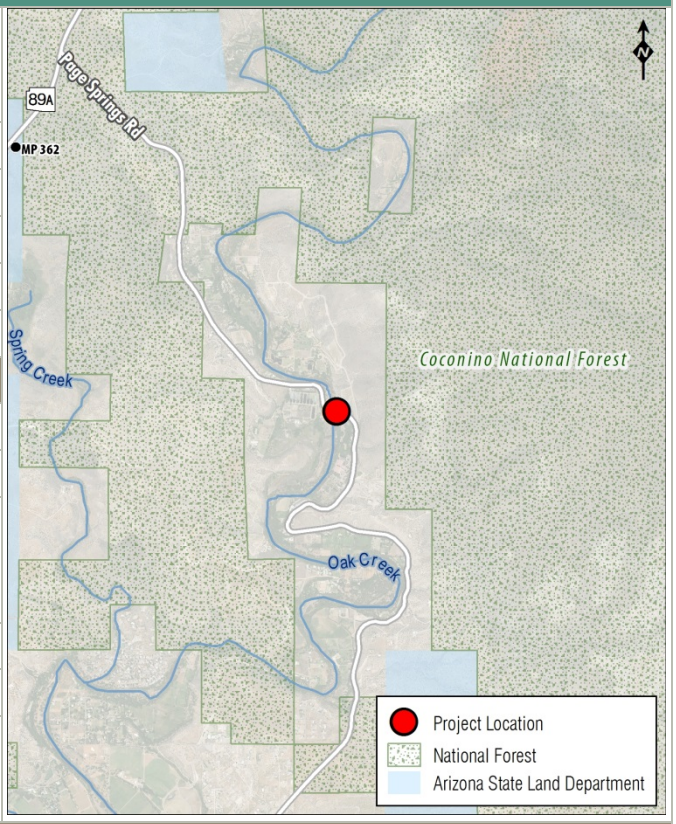
Improvements are located at an existing structure; therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, erosion, projected species, wildlife linkages, and cultural resources. Additionally, effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies to ensure improvements align with local and regional transportation goals.

Project #M-4: Page Springs Rd - Bridge #9102 (Oak Creek)

Location Description:	Two-lane local roadway; constructed in 1935; 247 FT in length; thirteen span concrete slab structure		
Responsible Agency:	Yavapai County		
Project Length:	247 FT		
Adjacent Land Owner:	Private Land		
Number of Lanes	2 lanes	**Speed Limit:**	35 mph
Functional Classification:	Major Collector		



Existing and Future Conditions

Existing ADT	~3,500	**Existing LOS:**	LOS B
2040 ADT	~5,900	**2040 LOS:**	LOS D

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	No crashes occurred at bridge		
Fatal Crashes:	N/A	**Injury Crashes:**	N/A

Project Description

ID	*Location*	*Improvement*	*Cost Estimate*
4.1	*Page Springs Rd - Bridge #9102 (Oak Creek)*	*Rehabilitate bridge*	$800,000

Purpose and Need

Structure #9102 is located on Page Springs Rd over Oak Creek and provides access to Cornville from SR 89A. The road is frequently utilized by tourists accessing vineyards along the roadway. Listed in the Arizona State Highway Bridge Inventory as having a sufficiency rating of 74.7, this bridge is also Functionally Obsolete requiring upgrades to better serve existing and future traffic of Page Springs Rd. The purpose of the project is to repair the bridge in order to meet structural standards and to improve safety for the traveling public.

Project Benefits

1) Upgrades structurally deficient bridge to meet federal standards; 2) extends the life of current facilities; 3) improves safety for the traveling public

Environmental Impacts

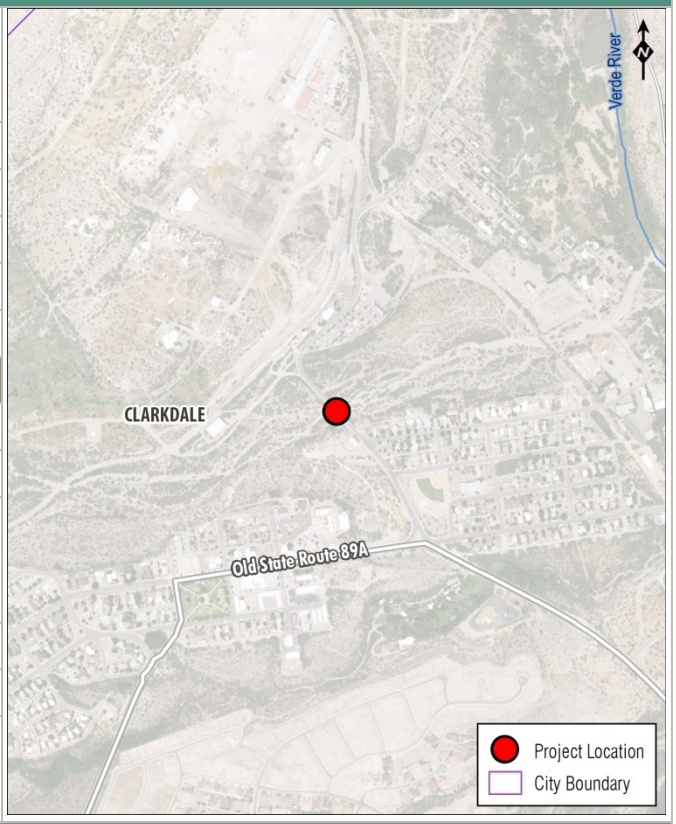
Improvements are located at an existing structure; therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, projected species, riparian habitats, wildlife linkages, and cultural resources. Additionally, effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies to ensure improvements align with local and regional transportation goals.

Project #M-5: Broadway - Bridge #8488 (Bitter Creek)

Location Description:	One-lane bridges; constructed in 1917; 130 FT in length, five span concrete slab structure		
Responsible Agency:	Town of Clarkdale		
Project Length:	130 FT		
Adjacent Land Owner:	Town of Clarkdale, Private Land		
Number of Lanes	1 lane	**Speed Limit:**	25mph
Functional Classification:	Local Road		



Existing and Future Conditions

Existing ADT	< 1,000	**Existing LOS:**	LOS A
2040 ADT	< 1,000	**2040 LOS:**	LOS A

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	No crashes occurred at bridge		
Fatal Crashes:	N/A	**Injury Crashes:**	N/A

Project Description

ID	*Location*	*Improvement*	*Cost Estimate*
5.1	*Broadway - Bridge #8488 (Bitter Creek)*	*Widen One-Lane Bridge*	$390,000

Purpose and Need

Located on Broadway in Clarkdale, Structure #8488 spans across Bitter Creek and is utilized by tourists to access Verde Canyon Railroad. This bridge also experiences also heavy truck usage and congestion issues due to its one-lane design. In the Arizona State Highway Bridge Inventory, the bridge is listed as having a sufficiency rating of 44.3. The purpose of this project is to repair and widen the bridge.

Project Benefits

1) Increased capacity for trucks and tourists; 2) extends the life of current facilities; 3) improves safety for the traveling public

Environmental Impacts

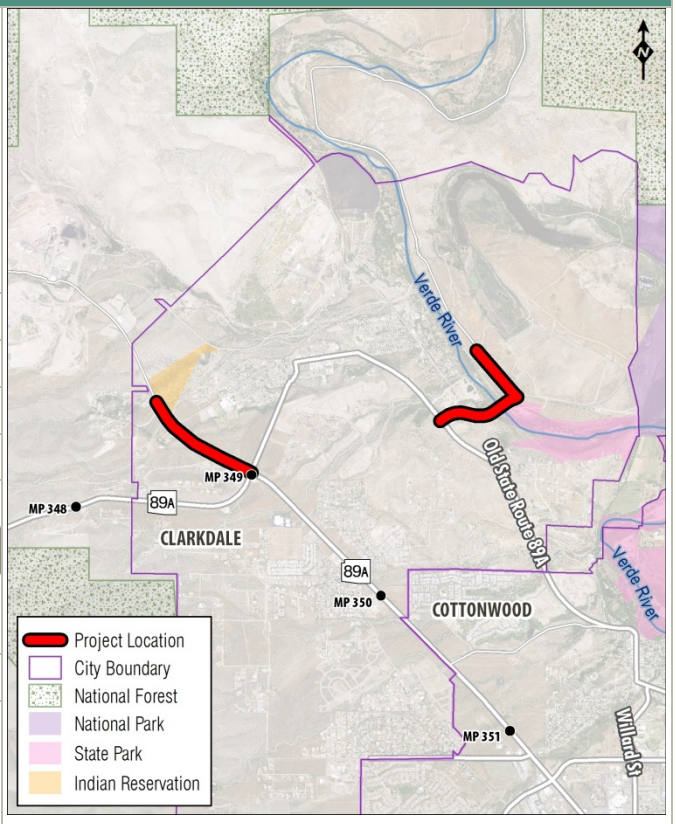
Improvements are located at an existing structure; therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, projected species, riparian habitats, sediment conditions in the Verde River, wildlife linkages, and cultural resources. Additionally, effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT.

Project #M-6: Clarkdale: Widen shoulders from 0 FT to 5 FT

Location Description:	Paved two-lane roadways that link Broadway and SR 89A to major traffic generators such as the Salt River Materials Group (SRMG) Cement Plant and Local roadways that provide access to the Salt River Materials Group (SRMG) Cement Plant and Tuzigoot National Monument		
Responsible Agency:	Town of Clarkdale		
Project Length:	1.5 mi		
Adjacent Land Owner:	Town of Clarkdale, Private Land		
Number of Lanes	2 lanes	**Speed Limit:**	20-45 mph
Functional Classification:	Major Collector		



Existing and Future Conditions

Existing ADT	~400 – 1,300	**Existing LOS:**	LOS A
2040 ADT	~1,200	**2040 LOS:**	LOS A

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	7		
Fatal Crashes:	0	**Injury Crashes:**	5

Project Description

ID	Location	Improvement	Cost Estimate
6.1	Cement Plant Rd	Widen shoulders from 0 FT to 5 FT	$652,500
6.2	Tuzigoot Rd	Widen shoulders from 0 FT to 5 FT	
6.3	Sycamore Canyon Rd	Widen shoulders from 0 FT to 5 FT	

Purpose and Need

Cement Plant Road is the only access point to the Salt River Materials Group Cement Plant; therefore, the roadway carries 200 to 400 trucks daily. Tuzigoot Road and Sycamore Canyon Road provide access to the Tuzigoot National Monument and to recreational areas northeast of Clarkdale. The purpose of this project is to construct 5 FT shoulders to improve the overall safety of the roadways.

Project Benefits

1) Increases safety for all modes of transportation; 2) provides a location for disabled vehicles to pull over; 3) improves emergency response times; 4) extends the life of roadway surface

Environmental Impacts

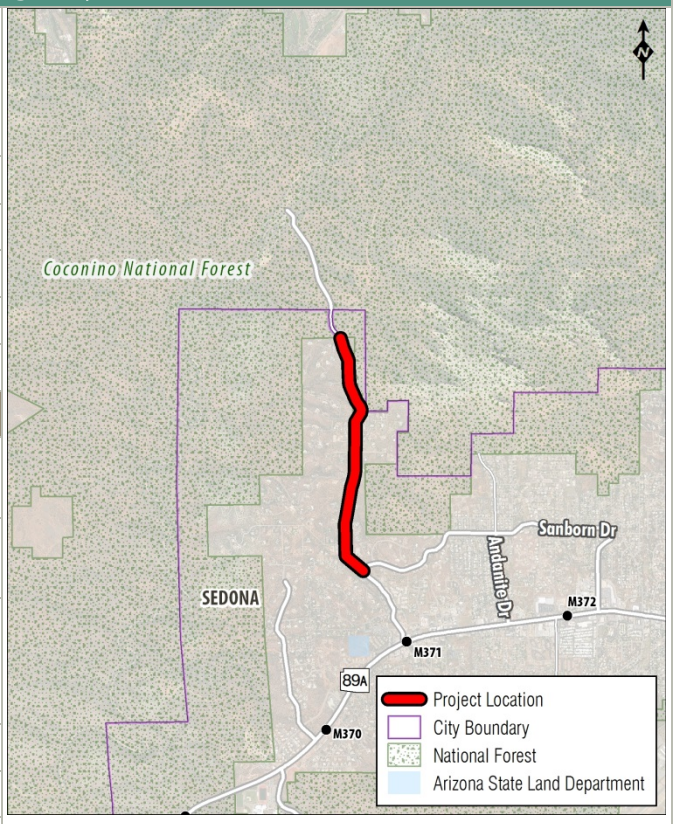
Recommended improvements will occur along an existing corridor; however, a detailed review of the existing right-of-way constraints is needed to determine if additional right-of-way is required. Consideration should be given to impacts on the natural environment, hazardous materials sites, utilities, wildlife linkages, and cultural resources. Effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies to ensure improvements align with local and regional transportation goals.

Project #M-7: Dry Creek Rd: Thunder Mountain Rd - Long Canyon Rd

Location Description:	Two-lane roadway that connects SR 89A to the Enchantment Resort and outdoor recreational destinations north of Sedona		
Responsible Agency:	City of Sedona		
Project Length:	1.3 mi		
Adjacent Land Owner:	City of Sedona, Private Land		
Number of Lanes	2 lanes	**Speed Limit:**	25-36 mph
Functional Classification:	Major Collector and Minor Collector		



Existing and Future Conditions

Existing ADT	~5,900 – 6,900	**Existing LOS:**	LOS C to D
2040 ADT	~6,500 – 9,200	**2040 LOS:**	LOS C to D

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	9		
Fatal Crashes:	0	**Injury Crashes:**	1

Project Description

ID	*Location*	*Improvement*	*Cost Estimate*
7.1	*Dry Creek Rd: Thunder Mountain Rd - Long Canyon Rd*	*Widen shoulders from 0 FT to 5 FT*	$565,500

Purpose and Need

Dry Creek Road is primarily utilized by tourists and commuters to access the Enchantment Resort and outdoor recreational areas in the Coconino National Forest. The purpose of this project is to construct 5 FT shoulders to improve the overall safety of the roadway.

Project Benefits

1) Increases safety for all modes of transportation; 2) provides a location for disabled vehicles to pull over; 3) improves emergency response times; 4) extends the life of roadway surface

Environmental Impacts

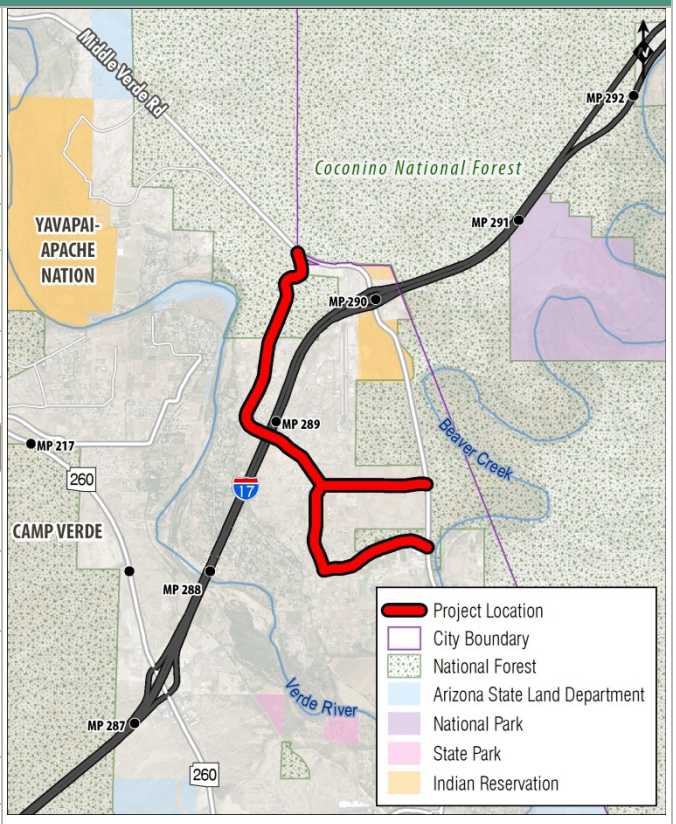
Recommended improvements will occur along an existing corridor; however, a detailed review of the existing right-of-way constraints is needed to determine if additional right-of-way is required. As the project progresses, close coordination should occur with the Coconino National Forest to assess negative impacts on the natural environment and to develop mitigation measures. During the design phase, consideration should be given to impacts on the natural environment, utilities, wildlife linkages, and cultural resources. Effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies, particularly the Coconino National Forest, to ensure improvements align with local and regional transportation goals.

Project #M-8: Camp Verde: Widen shoulders from 0 FT to 5 FT

Location Description:	Two-lane roadways utilized by local residents to access homes and Camp Verde elementary, middle, and high schools		
Responsible Agency:	Town of Camp Verde		
Project Length:	N/A		
Adjacent Land Owner:	Town of Camp Verde, Coconino National Forest, Private Land		
Number of Lanes	2 lanes	**Speed Limit:**	25-35 mph
Functional Classification:	Minor Collector		



Existing and Future Conditions

Existing ADT	~1,000 – 2,100	**Existing LOS:**	LOS A to B
2040 ADT	~2,100 – 3,300	**2040 LOS:**	LOS A to C

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	7		
Fatal Crashes:	0	**Injury Crashes:**	2

Project Description

ID	Location	Improvement	Cost Estimate
8.1	Arena del Loma	Widen shoulders from 0 FT to 5 FT	$1,566,000
8.2	Boot Hill Dr	Widen shoulders from 0 FT to 5 FT	
8.3	Apache Trl	Widen shoulders from 0 FT to 5 FT	

Purpose and Need

Arena del Loma, Boot Hill Drive, and Apache Trail are local roadways that connect residential areas and Camp Verde schools to Montezuma Castle Highway and Middle Verde Road. The purpose of this project is to construct 5 FT shoulders to improve the overall safety of the roadway.

Project Benefits

1) Improved motor vehicle, pedestrian, bicyclist safety conditions; 2) improved emergency services; 3) extends the life of roadway surface

Environmental Impacts

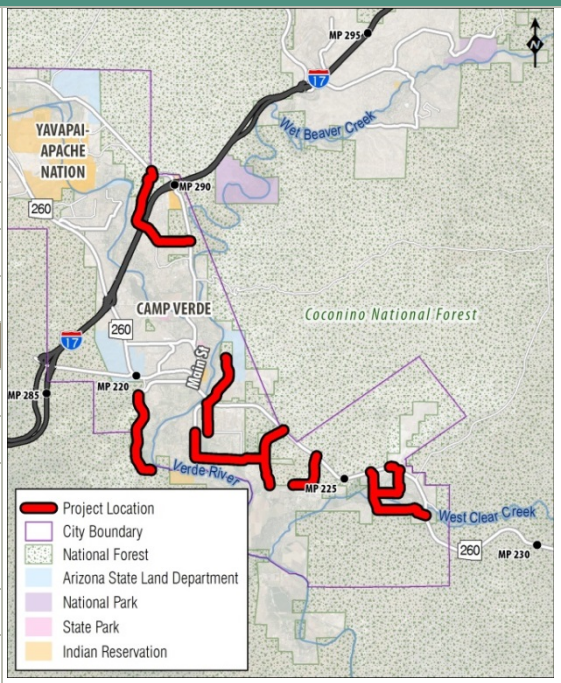
Recommended improvements will occur along an existing corridor; however, a detailed review of the existing right-of-way constraints is needed to determine if additional right-of-way is required. As the project progresses, close coordination should occur with the Coconino National Forest to assess negative impacts on the natural environment and to develop mitigation measures. During the design phase, consideration should be given to impacts on the natural environment, utilities, wildlife linkages, and cultural resources. Effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT.

Project #M-9: Camp Verde: Pavement Preservation

Location Description:	Local two-lane roadways serving residential areas in Camp Verde		
Responsible Agency:	Town of Camp Verde		
Project Length:	12.7 mi total		
Adjacent Land Owner:	N/A		
Number of Lanes	2 lanes	**Speed Limit:**	25mph
Functional Classification:	N/A		



Existing and Future Conditions

Existing ADT	<5,000	**Existing LOS:**	A to B
2040 ADT	<8,000	**2040 LOS:**	A to C

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	N/A		
Fatal Crashes:	N/A	**Injury Crashes:**	N/A

Project Description

ID	Location	Improvement	Cost Estimate
9.1	Aspen Way: SR 260 - Catclaw Drive	Major pavement rehabilitation	$635,000
9.2	Arena del Loma	Major pavement rehabilitation	
9.3	Salt Mine Rd	Major pavement rehabilitation	
9.4	Verde Park Dr	Major pavement rehabilitation	
9.5	Verde Lakes Dr: SR 260 - Clinton Lane	Major pavement rehabilitation	
9.6	Murdock Rd: Quarterhorse Ln - Stolen Blvd	Major pavement rehabilitation	
9.7	Quarterhorse Ln: Stolen Blvd - Verde Park Dr	Major pavement rehabilitation	
9.8	Clinton Ln: Verde Lakes Drive - Creek View Dr	Major pavement rehabilitation	
9.9	McCracken Rd: SR 260 - 0.1mi north of Lena Dr	Major pavement rehabilitation	
9.10	Creek View Dr: Clinton Lane - Chino Dr	Major pavement rehabilitation	
9.11	Sierra Verde Rd: SR 260 - Sierra Ln	Major pavement rehabilitation	
9.12	Catclaw Dr: Verde Lakes Dr - Aspen Way	Major pavement rehabilitation	

Purpose and Need

This project consists of local, two-lane roadways utilized by local residents to access major corridors such as SR 260, Montezuma Castle Highway, and Middle Verde Road. Due to aging pavement, traffic usage, and weather impacts the roadways currently have poor pavement conditions. The purpose of this project is to perform a major rehabilitation on the roadway's pavement surface.

Project Benefits

1) Extends life of existing infrastructure; 2) improves driver experience; 3) improves safety for all modes

Environmental Impacts

Recommended improvements will occur along an existing corridor; however, a detailed review of the existing right-of-way constraints is needed to determine if additional right-of-way is required. Close coordination should occur with the Coconino National Forest to assess negative impacts on the natural environment and to develop mitigation measures. Consideration should also be given to impacts on the utilities, wildlife linkages, and cultural resources. Effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT.

Project #M-10: Beaver Creek Rd: I-17 to Montezuma Ave

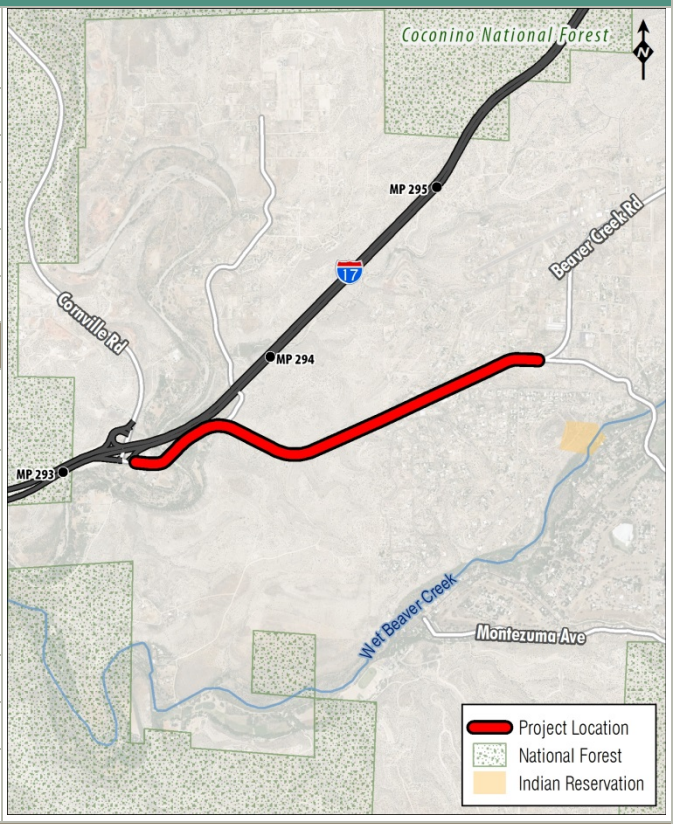
Location Description:	Local roadway that is the only access point to Lake Montezuma		
Responsible Agency:	Yavapai County		
Project Length:	1.8 mi		
Adjacent Land Owner:	Private Land		
Number of Lanes	2-3 lanes	**Speed Limit:**	25-45 mph
Functional Classification:	Major Collector		

Existing and Future Conditions

Existing ADT	~7,600 – 12,500	**Existing LOS:**	LOS D
2040 ADT	~9,100 – 21,200	**2040 LOS:**	LOS E to F

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	15		
Fatal Crashes:	0	**Injury Crashes:**	6



Project Description

ID	*Location*	*Improvement*	*Cost Estimate*
10.1	*Beaver Creek Rd: I-17 to Montezuma Ave*	*Widen to four lane arterial roadway and install center turn lane or median where feasible.*	$387,000

Purpose and Need

Connecting Lake Montezuma to I-17 and Cornville Road, Beaver Creek Road is currently the only paved route connecting Lake Montezuma to the rest of the Verde Valley. The corridor is utilized heavily by tourists visiting Montezuma Well National Monument, commuters to regional employment centers, and by local traffic accessing business along the roadway. The roadway is also the main school bus route for the Rimrock Public High School and the Beaver Creek Elementary School. The purpose of this project is to widen the corridor to four-lanes and install pedestrian and bicycle facilities.

Project Benefits

1) accommodate future growth; 2) improve traffic flow and turning movements; 3) improve school bus route safety; 4) provide safe pedestrian and bicycle facilities

Environmental Impacts

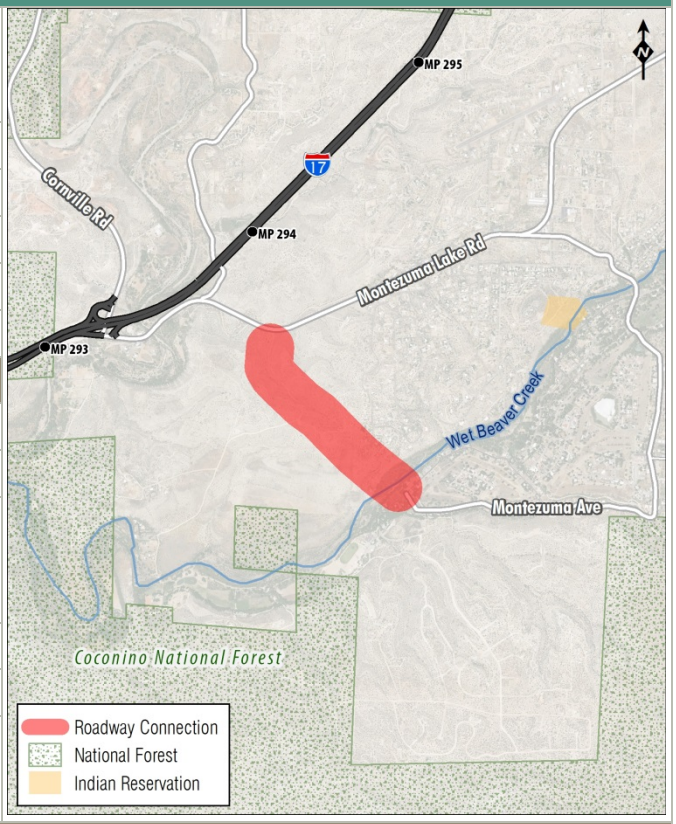
Recommended improvements will occur along an existing corridor; therefore, environmental impacts are minimal. Consideration should be given to impacts on utilities, hazardous material sites, and noise receptors. Additionally, effort should be made to limit the impacts on Title VI populations during construction of recommended improvements.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. During the public meetings, county residents expressed a strong interest in pedestrian and bicycles amenities along county roads. Yavapai County Resolution NO. 1036 contains the adopted roadway cross sections for all County roads which dictate the roadway design and include a 4 foot shoulders beyond the travel lane which provides for multimodal uses. County residents could work with their public officials to begin a dialogue on how to amend the resolution to include modified multimodal amenities in the roadway cross sections.

Project #M-11: New Rd: Beaver Creek Rd to Montezuma Ave

Location Description:	Proposed new connection linking Beaver Creek Road to Montezuma Avenue		
Responsible Agency:	Yavapai County		
Project Length:	< 1 mile		
Adjacent Land Owner:	Private Land		
Number of Lanes	N/A	**Speed Limit:**	N/A
Functional Classification:	N/A		



Existing and Future Conditions

Existing ADT	N/A	**Existing LOS:**	N/A
2040 ADT	N/A	**2040 LOS:**	N/A

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	N/A		
Fatal Crashes:	N/A	**Injury Crashes:**	N/A

Project Description

ID	*Location*	*Improvement*	*Cost Estimate*
11.1	*New Rd: Beaver Creek Rd to Montezuma Ave*	*Conduct Design Concept Report for new road between Beaver Creek Road and Montezuma Avenue in the vicinity of Brocket Ranch Road.*	N/A
11.2	*New Rd: Beaver Creek Rd to Montezuma Ave*	*Use the findings from the Design Concept Report, Project 11.1, to construct a new road between Beaver Creek Road and Montezuma Avenue*	$1,840,500

Purpose and Need

Currently, residents residing south of West Beaver Creek can only access Beaver Creek Road via Montezuma Avenue. This lack of access creates congestion issues on Montezuma Avenue and impedes emergency services. The purpose of this study is to provide an alternative/emergency route to increase access for Lake Montezuma residents.

Project Benefits

1) Improves access to residential areas south of Wet Beaver Creek; 2) improves emergency response time; 3) reduces congestion on Montezuma Avenue and Beaver Creek Road; 4) provides safe pedestrian and bicycle facilities

Environmental Impacts

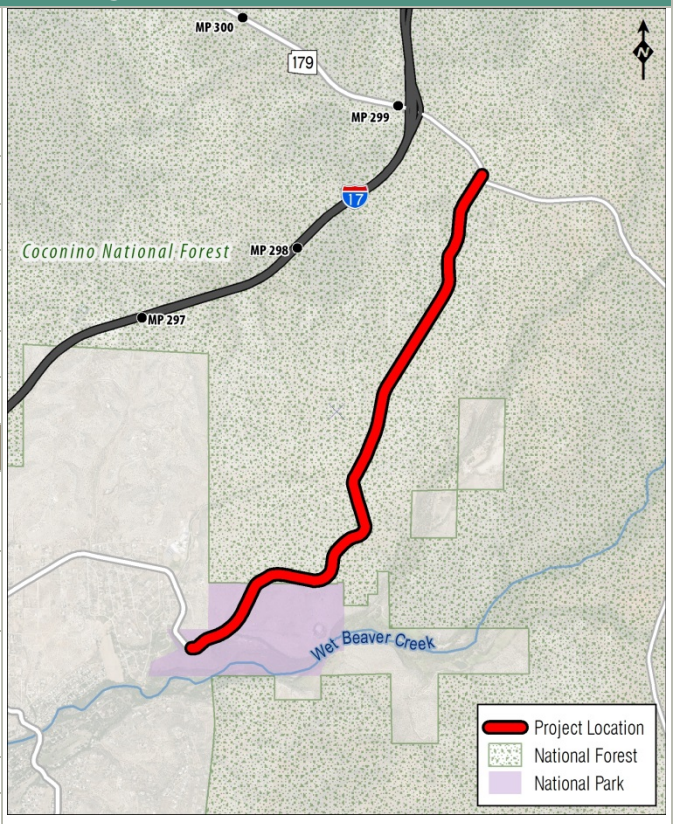
While an exact alignment is current unknown, the construction of a new corridor win the area may have physical and environmental impacts. During the alternative analysis and design phase of the study, consideration needs to be given to the impacts of the corridor wildlife habitats, biological and riparian habitats along Wet Beaver Creek, drainage and soil erosion.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT.

Project #M-12: Beaver Creek Road: Montezuma Well Rd to Ranger Rd

Location Description:	Unpaved Forest Service road linking Lake Montezuma, Montezuma Well National Monument, and outdoor recreation areas to I-17		
Responsible Agency:	Yavapai County		
Project Length:	3.4 mi		
Adjacent Land Owner:	Coconino National Forest, National Park		
Number of Lanes	2 lanes	**Speed Limit:**	2 mph
Functional Classification:	Minor Collector		



Existing and Future Conditions

Existing ADT	~2,000	**Existing LOS:**	LOS A to C
2040 ADT	~3,400	**2040 LOS:**	LOS B to F

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	6		
Fatal Crashes:	0	**Injury Crashes:**	1

Project Description

ID	Location	Improvement	Cost Estimate
12.1	*Beaver Creek Rd: Montezuma Well Rd to Ranger Rd*	*Pave unpaved roadway to a two-lane minor collector roadway Project is not needed if Beaver Creek Road is widened to four lanes between I-17 and Montezuma Avenue (M-12).*	$6,953,000

Purpose and Need

Beaver Creek Road is an unpaved roadway that transverses through the Coconino National Forest from Lake Montezuma to Beaver Creek Ranger Station Road. Currently, access to Lake Montezuma is only available via Beaver Creek Road to the west or via this unpaved roadway. At certain points, the roadway is too narrow for vehicles to safely pass each other. Additionally, vehicles have difficultly utilizing the roadway during adverse weather due to the muddy conditions of the roadway. To accommodate potential growth in Lake Montezuma an alternative route may be needed to reduce congestion levels in Lake Montezuma. The purpose of this study is to pave Beaver Creek Road west of Montezuma Well to improve access and safety.

Project Benefits

1) Provides alternative/emergency route to Lake Montezuma; 2) reduces congestion on Beaver Creek Rd in Lake Montezuma; 3) accommodates future travel demand ; 4) improves driver experience; 5) improved roadway safety

Environmental Impacts

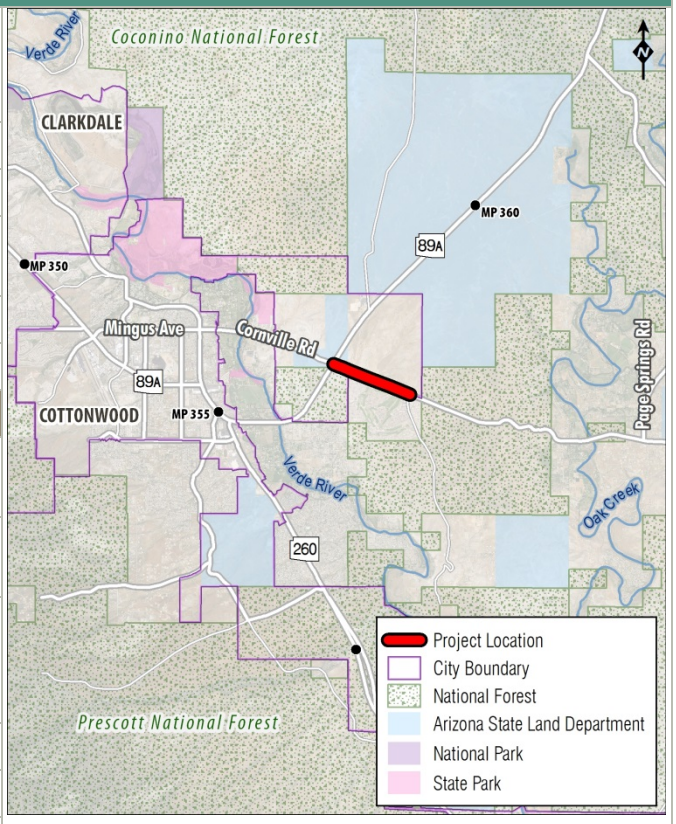
A 2000 Environmental Assessment was conducted that found no significant impact if the roadway were upgraded to a paved roadway; however, an updated Environmental Assessment would need to be conducted to determine potential impacts of the proposed improvement. As the project progresses, coordination should occur with the Coconino National Forest to assess negative impacts on the natural environment and to develop mitigation measures.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. Representatives from the Coconino Forest commented that additional coordination needs to occur to determine if proposed improvements align with the *Land and Resource Management Plan for the Coconino National Forest* is compliant with NEPA, and to assess the trade-offs on the Forest for developing the road.

Project #M-13: Cornville Rd: SR 89A to Tissaw Rd

Location Description:	Major regional corridor that provides access to residential areas between SR 89A and Page Springs Road		
Responsible Agency:	Yavapai County		
Project Length:	1.1 mi		
Adjacent Land Owner:	City of Cottonwood, Private Land, Coconino National Forest		
Number of Lanes	2 lanes	**Speed Limit:**	50 mph
Functional Classification:	Major Collector		



Existing and Future Conditions

Existing ADT	~7,300 – 12,700	**Existing LOS:**	LOS C to F
2040 ADT	~7,700 – 9,900	**2040 LOS:**	LOS C to F

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	7		
Fatal Crashes:	1	**Injury Crashes:**	4

Project Description

ID	Location	Improvement	Cost Estimate
13.1	*Cornville Rd: SR 89A to Tissaw Rd*	*Widen roadway to four lane arterial roadway with bike lanes and sidewalks in both directions. Install center turn lane or median with left-turn pockets where feasible*	$236,500

Purpose and Need

Cornville Road is a two lane roadway that connects Cottonwood to Cornville. It is a high volume roadway that has no pedestrian or bicycle facilities. Cornville Road experiences traffic delays due to the number of vehicles that utilize the road. The purpose of this project is to widen the road to four lanes and construct sidewalks and bike lanes in both directions to reduce traffic congestion and improve safety for all modes of transportation.

Project Benefits

1) accommodate future growth; 2) improve traffic flow and turning movements; 3) improve school bus route safety; 4) provide safe pedestrian and bicycle facilities

Environmental Impacts

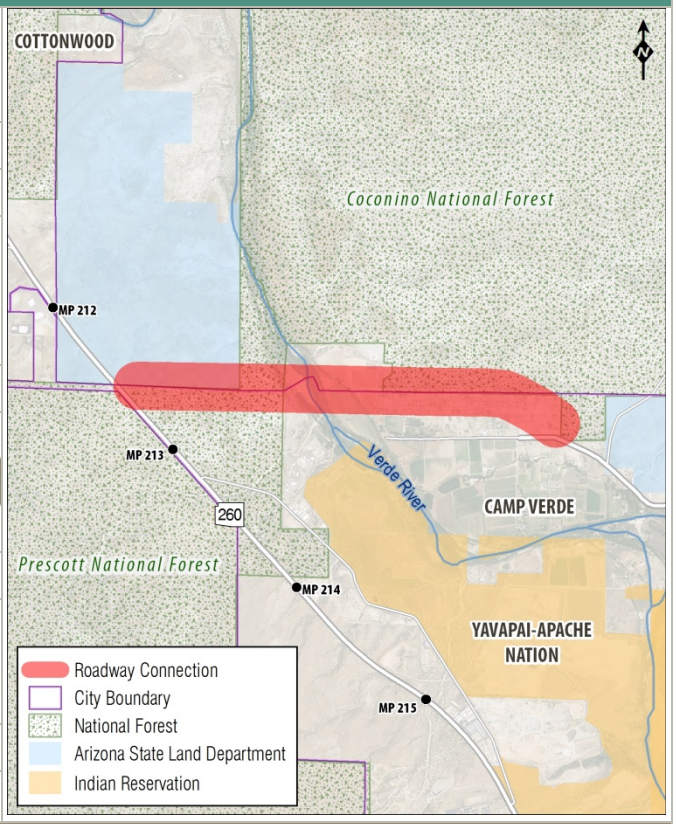
Improvements are located along an existing roadway; therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, cultural resources, visual resources, utilities, and noise receptors. Additionally, effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT.

Project #M-14: Middle Verde Rd Extension: Middle Verde Rd to SR 260

Location Description:	Future road that will connect to the northern side of Yavapai-Apache Nation		
Responsible Agency:	Multi-jurisdictional		
Project Length:	~2.5 miles		
Adjacent Land Owner:	Town of Camp Verde, Coconino National Forest, Prescott National Forest, Arizona State Land Department, Private Land		
Number of Lanes	N/A	**Speed Limit:**	N/A
Functional Classification:	N/A		



Existing and Future Conditions

Existing ADT	N/A	**Existing LOS:**	N/A
2040 ADT	N/A	**2040 LOS:**	N/A

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	N/A		
Fatal Crashes:	N/A	**Injury Crashes:**	N/A

Project Description

ID	Location	Improvement	Cost Estimate
14.1	*Middle Verde Rd Extension: Middle Verde Rd to SR 260*	*Extend Middle Verde Road as a two lane minor collector (Complete Streets CS # 1) with bike lanes and sidewalk in both directions. Bridge will need to be constructed over Verde River.*	$7,737,500

Purpose and Need

Middle Verde Road is the main road to the Yavapai-Apache Nation and the surrounding residential areas. The road currently ends to the north of the Yavapai-Apache Nation and to the east of the Verde River. Residents of the Yavapai-Apache Nation and the residential areas to the north of it do not have direct, reasonable access to SR 260. The purpose of this project is to extend Middle Verde Road across the Verde River to a connection with SR 260 to provide area residents with an alternate route to SR 260.

Project Benefits

1) Provides an alternate route to the Yavapai-Apache Nation; 2) provides better access to emergency vehicles; 3) increases access for all modes of transportation; 4) encourages economic development

Environmental Impacts

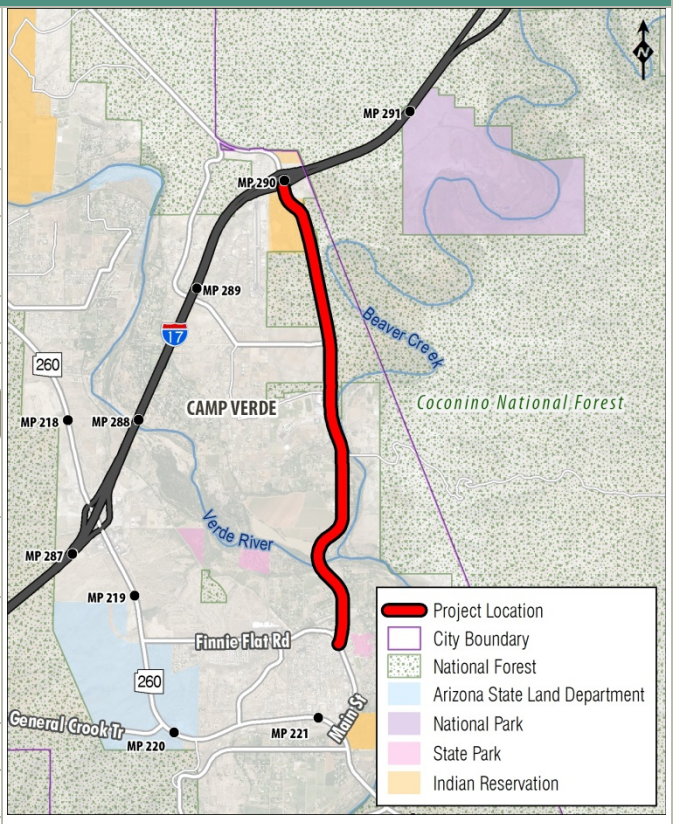
While an exact alignment is current unknown, the construction of a new corridor win the area may have physical and environmental impacts. During the alternative analysis and design phase of the study, consideration needs to be given to the impacts of the corridor on National Forest Land, biological and riparian habitats along the Verde River, drainage and soil erosion. As the project progresses, coordination should occur with the Coconino National Forest, Prescott National Forest, Arizona State Land Department, Town of Camp Verde, and Yavapai-Apache Nation determine the appropriate alignment.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. As the project progresses, an alternative analysis will need to be conducted to determine potential environmental and physical impacts of alignments. Additionally, on-going collaboration needs to occur with area stakeholders, Prescott National Forest, Yavapai-Apache Nation, Yavapai County, and Arizona State Lands.

Project #M-15: Montezuma Castle Highway: I-17 to Main St

Location Description:	Two-lane roadway linking Camp Verde to I-17; The road connects downtown Camp Verde and the Cliff Castle Casino		
Responsible Agency:	Yavapai County		
Project Length:	3.3 mi		
Adjacent Land Owner:	Town of Camp Verde, Coconino National Forest, Private Land		
Number of Lanes	2 lanes	**Speed Limit:**	35-45 mph
Functional Classification:	Minor Collector		



Existing and Future Conditions

Existing ADT	~3,700 – 10,700	**Existing LOS:**	LOS C to F
2040 ADT	~3,800 – 12,600	**2040 LOS:**	LOS C to F

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	19		
Fatal Crashes:	0	**Injury Crashes:**	4

Project Description

ID	*Location*	*Improvement*	*Cost Estimate*
15.1	*Montezuma Castle Highway: I-17 to Main St*	*Widen corridor to include a center turn lane*	$1,716,000

Purpose and Need

Montezuma Castle Highway is a two-lane roadway that provides a connection between I-17, Cliff Castle Casino, and downtown Camp Verde. The corridor is a school bus route with no shoulders and often experiences delays due to vehicles waiting to turn left. The purpose of this project is to widen the corridor to include a center turn lane to reduce turning movement conflicts and congestion due to turning movements.

Project Benefits

1) accommodate future growth; 2) improve traffic flow and turning movements; 3) improve school bus route safety

Environmental Impacts

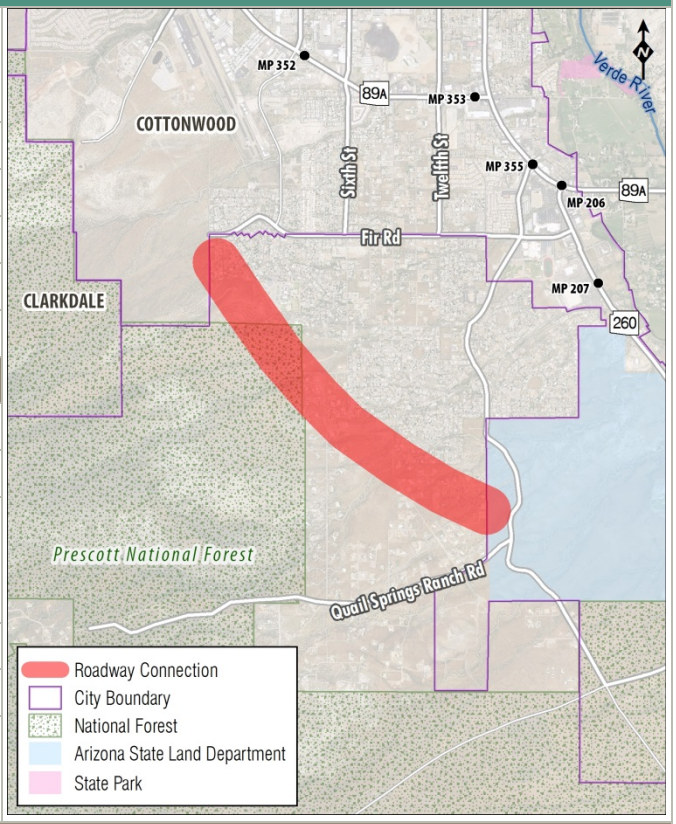
Improvements are located along existing roadways; therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, utilities, noise receptors, and Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT.

Project #M-16: West Loop Phase 2: Ogden Ranch Rd to Fir St

Location Description:	Future road that will connect the residents of west Cottonwood to Camino Real		
Responsible Agency:	Multi-jurisdictional		
Project Length:	< 2 miles		
Adjacent Land Owner:	Prescott National Forest, Private Land		
Number of Lanes	N/A	**Speed Limit:**	N/A
Functional Classification:	N/A		



Existing and Future Conditions

Existing ADT	N/A	**Existing LOS:**	N/A
2040 ADT	N/A	**2040 LOS:**	N/A

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	N/A		
Fatal Crashes:	N/A	**Injury Crashes:**	N/A

Project Description

ID	*Location*	*Improvement*	*Cost Estimate*
16.1	*West Loop Phase 2: Ogden Ranch Rd to Fir St*	*Construct two-lane minor collector (Complete Streets CS # 1) with bike lanes and sidewalks in both directions. Install center turn lane or median with left-turn pockets where feasible.*	$3,067,500

Purpose and Need

Currently the residents of southwest Cottonwood do not have alternative access to SR 89A and Old State Highway 279. The purpose of this project is to construct a two lane road that would connect Ogden Ranch Road to Fir Street to reduce congestion on SR 89A in Cottonwood by allowing residents to access SR 260 and SR 89A with an alternative route. The West Loop Phase 2 roadway would also provide alternative modes of transportation with the addition of pedestrian and bicycle facilities.

Project Benefits

1) Provides alternative access to the residents of the area; 2) Increases mobility and circulation; 3) Provides pedestrian and bicycle facilities

Environmental Impacts

While an exact alignment is current unknown, the construction of a new corridor win the area may have physical and environmental impacts. During the alternative analysis and design phase of the study, consideration needs to be given to the impacts of the corridor on Prescott National Forest Land, the Verde River watershed, rangeland, off-highway vehicle areas, trailheads, and wildlife habitats. As the project progresses, coordination should occur with the Prescott National Forest to assess negative impacts on the natural environment and to develop mitigation measures.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015.During the public meeting and in subsequent email responses, there was mixed support for this project, with some residents preferring that the construction to occur in the short-term phase and others concerns with the implications of the project of existing developments and the environment. As the project progresses, an alternative analysis will need to be conducted to determine potential environmental and physical impacts of alignments. Additionally, on-going collaboration needs to occur with area stakeholders, Prescott National Forest, and Arizona State Lands.

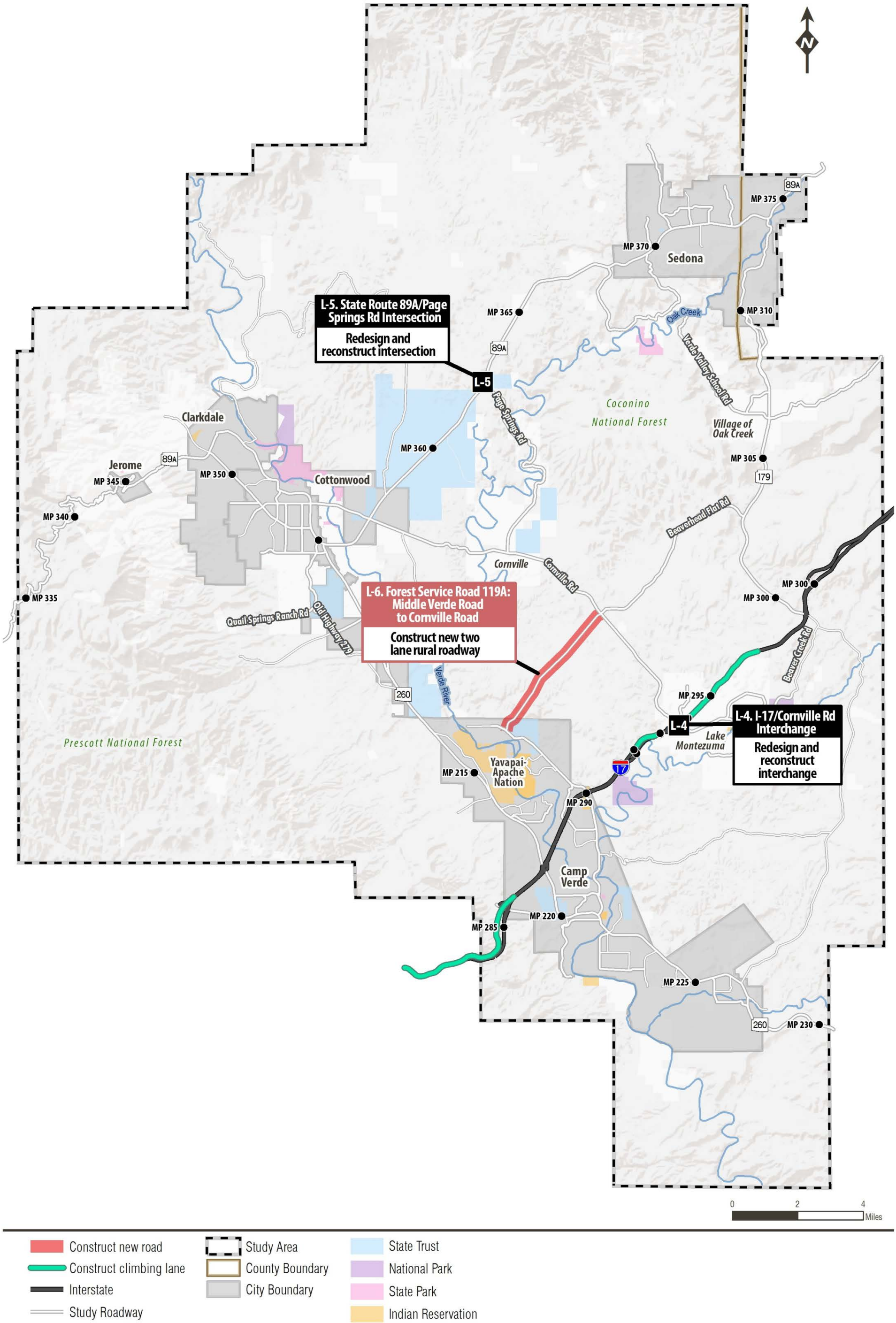
Long-Term Improvements

Long-term phase projects are high cost projects that require additional time to obtain funding or are not needed until build-out conditions. Table 8.3 and Figure 8.3 present a comprehensive list of the transportation recommendations for this phase, as well as the project number, location, and description for each project. *Each project is assigned a unique project number; project numbering does not represent the priority of the project but rather it is an identification number to track project progress. Unless otherwise noted, funding has not been secured for additional studies, design, purchase of right-of-way, or construction. As each project progresses into the concept and design phase, close coordination with the Prescott and Coconino Forest should occur to assess if there are available solutions on non-federal land. All federally funded projects are also subject to the National Environmental Policy Act (NEPA) process, which identifies projects potential environmental impacts and ensures that subsequent mitigation measures are addressed and implemented appropriately through construction.*

Table 8.3: Recommended Long-Term Improvement Projects

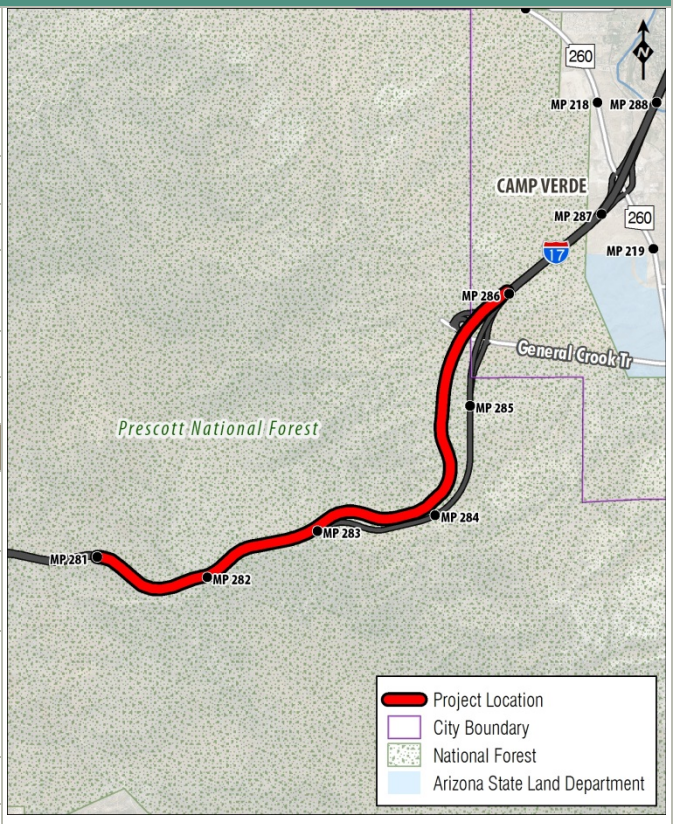
ID	Project Location and Description	Project Benefits
Roadway Capacity Improvements		
Arizona Department of Transportation		
L-1	**I-17 Southbound Climbing Lane: MP 286 – MP 281** *Construct 12 FT truck climbing lane for slow-moving heavy vehicles* *ADOT I-17 Corridor Profile Study recommended climbing lane installation at MP 294 – MP 298 (Northbound), MP 299 – MP 305 (Northbound), and MP 292 – 294 (Southbound)*	Improves corridor safety and traffic flow
L-2	**I-17 Southbound Climbing Lane: MP 293 – MP 292** *Construct 12 FT truck climbing lane for slow-moving heavy vehicles* *ADOT I-17 Corridor Profile Study recommended climbing lane installation at MP 294 – MP 298 (Northbound), MP 299 – MP 305 (Northbound), and MP 292 – 294 (Southbound)*	Improves corridor safety and traffic flow
L-3	**I-17 Northbound Climbing Lane: MP 294 – MP 297** *Construct 12 FT truck climbing lane for slow-moving heavy vehicles* *ADOT I-17 Corridor Profile Study recommended climbing lane installation at MP 294 – MP 298 (Northbound), MP 299 – MP 305 (Northbound), and MP 292 – 294 (Southbound)*	Improves corridor safety and traffic flow
L-4	**I-17/Cornville Rd** *Redesign and reconstruct interchange*	Improves interchange safety and operation
L-5	**State Route 89A/Page Springs Rd** *Redesign and reconstruct intersection*	Improves intersection safety and operation
Yavapai County		
L-6	**Forest Service Road 119A: Middle Verde Road to Cornville Road** *Construct new two lane rural roadway* *This project is not needed if Cornville Road is widened to four lanes (M-16)*	Provides alternative route between SR 260 and Cornville Road; alternative/emergency route to Yavapai-Apache Nation; increases access for all modes

Figure 8.3: Recommended Long-Term Improvement Projects



Project #L- 1: I-17 Southbound Climbing Lane: MP 286 - MP 281

Location Description:	Four-lane interstate highway that connects regional traffic between Phoenix and Flagstaff; utilized by local traffic to access regional attractions		
Responsible Agency:	ADOT		
Project Length:	5.0 mi		
Adjacent Land Owner:	Town of Camp Verde, Prescott National Forest		
Number of Lanes	2 lanes	**Speed Limit:**	65 mph
Functional Classification:	Interstate		



Existing and Future Conditions

Existing ADT	~12,300 – 13,100	**Existing LOS:**	LOS A to B
2040 ADT	~18,500 – 19,800	**2040 LOS:**	LOS B to C

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	36		
Fatal Crashes:	0	**Injury Crashes:**	9

Project Description

ID	*Location*	*Improvement*
1.1	*I-17 Southbound Climbing Lane: MP 286 - MP 281*	*Construct 12 FT truck climbing lane for slow-moving heavy vehicles. ADOT I-17 Corridor Profile Study recommended climbing lane installation at MP 294 – MP 298 (Northbound), MP 299 – MP 305 (Northbound), and MP 292 – 294 (Southbound)*

Purpose and Need

I-17 is a major corridor linking the Verde Valley to Phoenix and Flagstaff. In this section, there are two travel lanes in the southbound direction. Due to the steep grades, truck traffic is often slowed which causes traffic delays. The purpose of this proposed project is to construct a climbing lane to allow slower vehicles to ascend the steep grade without slowing other traffic.

Project Benefits

1) Improve corridor safety; 2) Improve traffic flow

Environmental Impacts

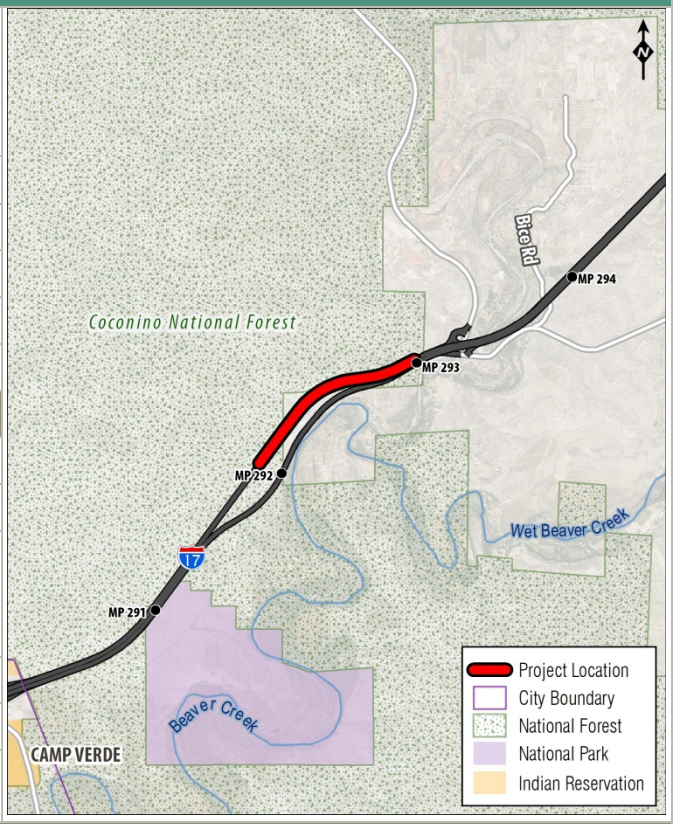
Improvements are located along an existing roadway; therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, protected species, wildlife crossings, cultural resources, and visual resources. During the design phase, close coordination should occur with representatives of the Prescott National Forest to assess the impacts of improvements on the natural environment. Additionally, effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015, respectively. Stakeholders and the public agreed with the proposed improvements.

Project #L-2: I-17 Southbound Climbing Lane: MP 293 - MP 292

Location Description:	Four-lane interstate highway that connects regional traffic between Phoenix and Flagstaff; utilized by local traffic to access regional attractions		
Responsible Agency:	ADOT		
Project Length:	1.1 mi		
Adjacent Land Owner:	Coconino National Forest, Private Land		
Number of Lanes	2 lanes	**Speed Limit:**	75 mph
Functional Classification:	Interstate		



Existing and Future Conditions

Existing ADT	~15,000	**Existing LOS:**	LOS B
2040 ADT	~23,900	**2040 LOS:**	LOS C

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	16		
Fatal Crashes:	0	**Injury Crashes:**	3

Project Description

ID	*Location*	*Improvement*
2.1	*I-17 Southbound Climbing Lane: MP 293 - MP 292*	*Construct 12 FT truck climbing lane for slow-moving heavy vehicles. ADOT I-17 Corridor Profile Study recommended climbing lane installation at MP 294 – MP 298 (Northbound), MP 299 – MP 305 (Northbound), and MP 292 – 294 (Southbound)*

Purpose and Need

I-17 is a major corridor linking the Verde Valley to Phoenix and Flagstaff. In this section, there are two travel lanes in the southbound direction. Due to the steep grades, truck traffic is often slowed which causes traffic delays. The purpose of this proposed project is to construct a climbing lane to allow slower vehicles to ascend the steep grade without slowing other traffic.

Project Benefits

1) Improve corridor safety; 2) Improve traffic flow

Environmental Impacts

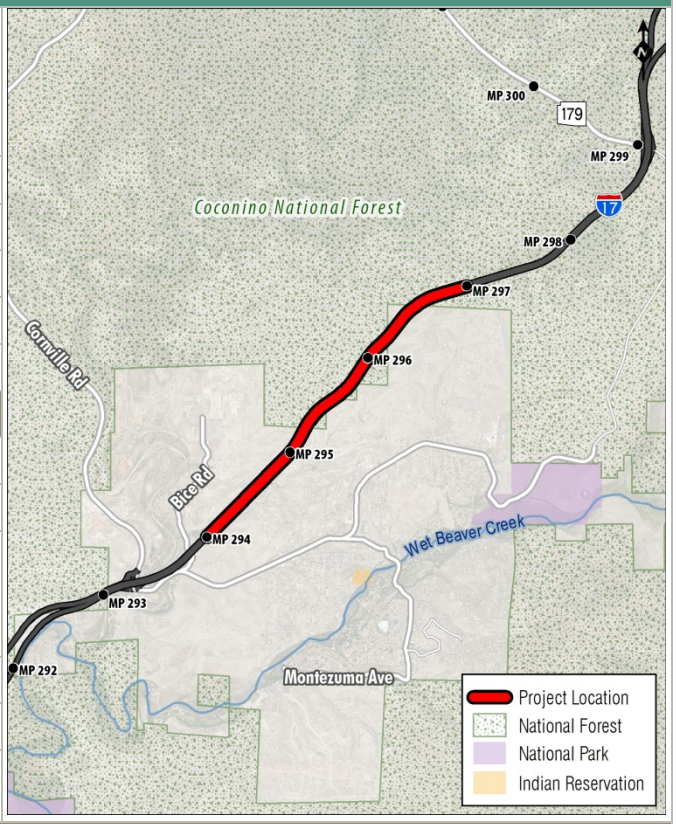
Improvements are located along an existing roadway; therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, protected species, wildlife crossings, cultural resources, and visual resources. During the design phase, close coordination should occur with representatives of the Prescott National Forest to assess the impacts of improvements on the natural environment. Additionally, effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015, respectively. Stakeholders and the public agreed with the proposed improvements.

Project #L-3: I-17 Northbound Climbing Lane: MP 294 - MP 297

Location Description:	Four-lane interstate highway that connects regional traffic between Phoenix and Flagstaff; utilized by local traffic to access regional attractions		
Responsible Agency:	ADOT		
Project Length:	3.0 mi		
Adjacent Land Owner:	Coconino National Forest, Private Land		
Number of Lanes	2 lanes	**Speed Limit:**	75 mph
Functional Classification:	Interstate		



Existing and Future Conditions

Existing ADT	~10,600	**Existing LOS:**	LOS A
2040 ADT	~17,400	**2040 LOS:**	LOS B

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	60		
Fatal Crashes:	0	**Injury Crashes:**	18

Project Description

ID	*Location*	*Improvement*
3.1	*I-17 Northbound Climbing Lane: MP 294- MP 297*	*Construct 12 FT truck climbing lane for slow-moving heavy vehicles. ADOT I-17 Corridor Profile Study recommended climbing lane installation at MP 294 – MP 298 (Northbound), MP 299 – MP 305 (Northbound), and MP 292 – 294 (Southbound)*

Purpose and Need

I-17 is a major corridor linking the Verde Valley to Phoenix and Flagstaff. In this section, there are two travel lanes in the northbound direction. Due to the steep grades, truck traffic is often slowed which causes traffic delays. The purpose of this proposed project is to construct a climbing lane to allow slower vehicles to ascend the steep grade without slowing other traffic.

Project Benefits

1) Improve corridor safety; 2) Improve traffic flow

Environmental Impacts

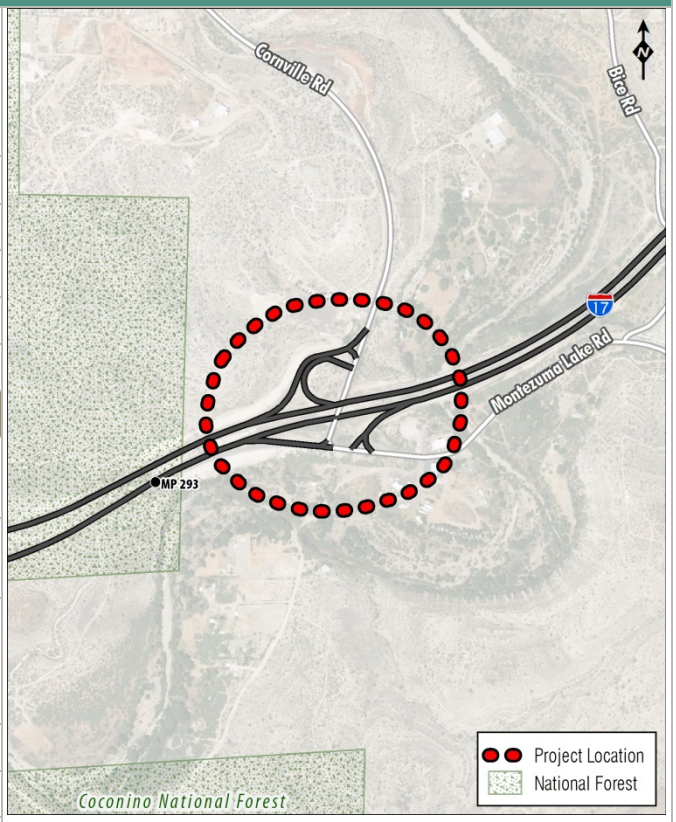
Improvements are located along an existing roadway; therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, protected species, wildlife crossings, cultural resources, and visual resources. During the design phase, close coordination should occur with representatives of the Prescott National Forest to assess the impacts of improvements on the natural environment. Additionally, effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015, respectively. Stakeholders and the public agreed with the proposed improvements.

Project #L-4: I-17/Cornville Rd

Location Description:	Overpass interchange that serves traffic between Phoenix and Flagstaff, as well as tourist and commuter traffic within Verde Valley		
Responsible Agency:	ADOT		
Project Length:	N/A		
Adjacent Land Owner:	Private Land		
Number of Lanes	N/A	**Speed Limit:**	N/A
Functional Classification:	N/A		



Existing and Future Conditions

Existing ADT	~9,400 – 9,600	**Existing LOS:**	LOS A
2040 ADT	~14,600 – 17,500	**2040 LOS:**	LOS B

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	25		
Fatal Crashes:	0	**Injury Crashes:**	5

Project Description

ID	*Location*	*Improvement*
5.1	*I-17/Cornville Rd interchange*	*Redesign and reconstruct interchange*

Purpose and Need

This critically important interchange connects regional and local traffic to Cornville Road, Lake Montezuma, and the Montezuma Well National Monument. The interchange's geometric configuration is confusing to tourists and limited sight distance causes safety issues. The purpose of the project is to upgrade the signage at the interchange to provide motorists with clear directions to major attractions and communities.

Project Benefits

1)Improve corridor safety; 2) Improve traffic flow

Environmental Impacts

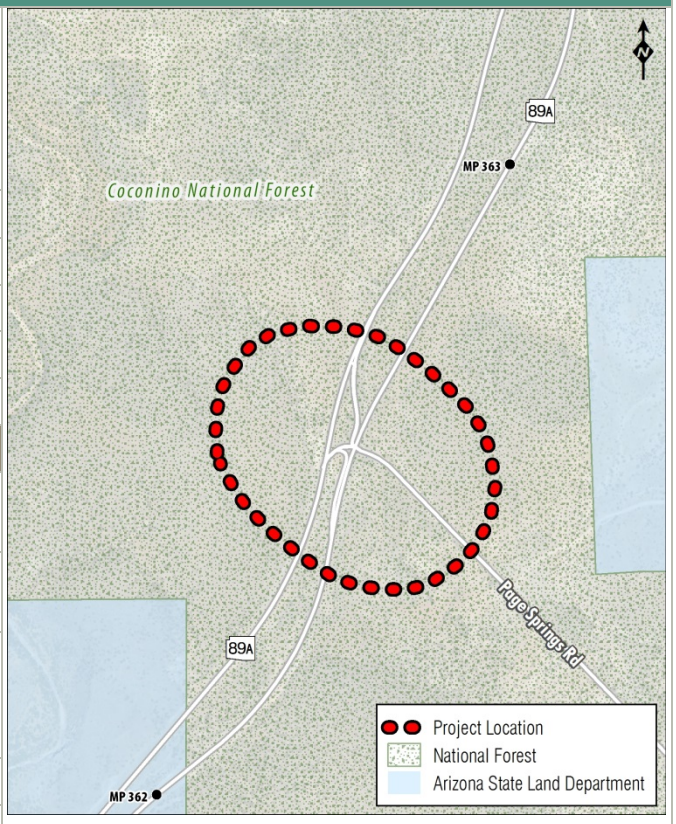
Improvements are located at an existing interchange; therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, projected species, wildlife linkages, and cultural resources. Additionally, effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies to ensure improvements align with local and regional transportation goals.

Project #L-5: SR 89A/Page Springs Rd

Location Description:	Unsignalized intersection on Page Springs Rd and SR 89A roads that serve regional commuter and tourist traffic between Cornville, Cottonwood, and Sedona		
Responsible Agency:	ADOT		
Project Length:	N/A		
Adjacent Land Owner:	Coconino National Forest		
Number of Lanes	N/A	**Speed Limit:**	N/A
Functional Classification:	N/A		



Existing and Future Conditions

Existing ADT	~3,300 – 18,500	**Existing LOS:**	LOS B
2040 ADT	~5,500 – 28,300	**2040 LOS:**	LOS C

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	11		
Fatal Crashes:	1	**Injury Crashes:**	2

Project Description

ID	*Location*	*Improvement*
6.1	*SR 89A/Page Springs Rd*	*Redesign and reconstruct intersection*

Purpose and Need

The SR 89A/Cornville Road intersection is a critical intersection that provides access to residential areas and vineyards along Page Springs Road. The intersection's geometric configuration is confusing to tourists and limited sight distance causes safety issues. The purpose of this project is to redesign and reconstruct the intersection to improve the safety and functionality of the intersection as well as improve traffic flow.

Project Benefits

1) Improves intersection safety; 2) Improves the operation of the intersection

Environmental Impacts

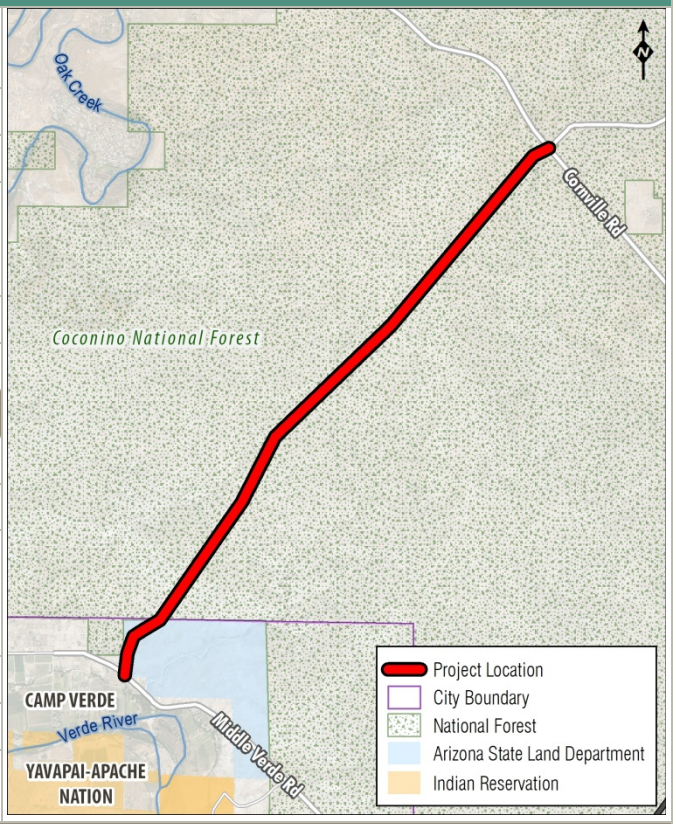
Improvements are located at an existing intersection; therefore, environmental impacts are minimal. Consideration should be given to impacts on the natural environment, projected species, wildlife linkages, and cultural resources. Additionally, effort should be made to limit the impacts on Title VI populations during construction.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. On-going coordination should occur with area stakeholders and agencies to ensure improvements align with local and regional transportation goals.

Project #L-6: Forest Service Rd 119A: Middle Verde Rd to Cornville Rd

Location Description:	Unpaved Forest Rd linking Middle Verde Rd and Cornville Rd		
Responsible Agency:	Multi-jurisdictional		
Project Length:	~ 5 miles		
Adjacent Land Owner:	Town of Camp Verde, Coconino National Forest, Arizona State Land Department		
Number of Lanes	N/A	**Speed Limit:**	N/A
Functional Classification:	N/A		



Existing and Future Conditions

Existing ADT	N/A	**Existing LOS:**	N/A
2040 ADT	N/A	**2040 LOS:**	N/A

Average Daily Traffic (ADT) refers to a roadway`s total traffic volume during a 24-hour period. Level of Service (LOS) is a measurement of traffic congestion. LOS is expressed using letters "A" through "F", with LOS A representing free flow conditions and LOS F representing failing conditions.

No. Crashes:	N/A		
Fatal Crashes:	N/A	**Injury Crashes:**	N/A

Project Description

ID	Location	Improvement
4.1	Forest Service Rd 119A: Middle Verde Rd to Cornville Rd	Construct new two-lane rural roadway *This project is not needed if Cornville Road is widened to four lanes (M-16)*

Purpose and Need

Forest Service Road 119A is an unpaved road between Middle Verde Road and Cornville Road. Currently the residents of the Yavapai-Apache Nation and surrounding communities have no reasonable access to Cornville Rd; the only option is via I-17. The purpose of this project is to pave the existing unpaved road in order to provide a direct route between Cornville Road from Middle Verde Road, thus reducing congestion on I-17.

Project Benefits

1) Provides alternative route between SR-260 and Cornville Road; 2) Provides an alternative route to the Yavapai-Apache Nation; 3) Provides better access to emergency vehicles; 4) Increases access for all modes of transportation

Environmental Impacts

A 2000 Environmental Assessment was conducted that found no significant impact if the roadway were upgraded to a paved roadway; however, an updated Environmental Assessment would need to be conducted to determine potential impacts of the proposed improvement. As the project progresses, coordination should occur with the Coconino National Forest to assess negative impacts on the natural environment and to develop mitigation measures.

Local and Public Support

Stakeholder and public meetings were held in September and November 2015. Stakeholders and the public agreed with the proposed improvements. Coordination was conducted throughout the study with Yavapai and Coconino Counties, Arizona State Land Department, Prescott and Coconino National Forests, and ADOT. Representatives from the Coconino Forest commented that additional coordination needs to occur to determine if proposed improvements align with the *Land and Resource Management Plan for the Coconino National Forest,* is compliant with NEPA, and to assess the trade-offs on the Forest for developing the road.

Environmental Considerations

For each project involving potential impacts to National Forest Lands or environmentally sensitive lands, a trade-off analysis needs to be conducted to carefully determine trade-offs between wilderness values and the "incremental costs" of expanding the transportation network on the environment. A comprehensive trade-off analysis determining if the positive impacts on the region's transportation network outweighs the potential impacts on the natural and cultural environment should be conducted for each project that has the potential to impact National Forest Lands or environmentally sensitive lands. A trade-off analysis is particularly important within the National Forest system, because the land is a federally protected source that must be managed for the benefit of the public. Analysis should include:

- Degree to which the planned improvement increases access to protected lands and environmentally sensitive lands
- Degree that the planned improvement alters the natural environment or appearance of the land
- Impacts on areas of ecological, geologic, scenic, historic, or cultural significance
- Potential mitigation measure to minimize impacts on natural and cultural environment

Below is a summary of improvement projects that may have substantial environmental impacts and potential mitigation measures and trade-offs.

Paving Beaver Creek Road (Montezuma Lake Road to Ranger Road)	***Purpose:*** *Future traffic demand in Lake Montezuma requires additional access and alternative route to access Lake Montezuma* ***Impacts:*** *A 2000 Environmental Assessment was conducted that found no significant impact if the roadway were upgraded to a paved roadway; however, an updated Environmental Assessment would need to be conducted to determine potential impacts of the proposed improvement.* – Short-term recommendations of performing a dirt road surface treatment may reduce dust emissions; however, it may increase vehicular usage of the roadway. – Widening Beaver Creek Road from I-17 to Montezuma Avenue eliminates the need of paving unpaved portions of Beaver Creek Road, because the increased capacity of the corridor meets the future traffic demand of Lake Montezuma.
Constructing a new road along Forest Service Road 119A	***Purpose:*** *Relieve congestion on Cornville Road and provide alternative access to SR 260* ***Impacts:*** *A 2000 Environmental Assessment was conducted that found no significant impact if the roadway were upgraded to a paved roadway; however, an updated Environmental Assessment would need to be conducted to determine potential impacts of the proposed improvement.* – Paving the roadway will increase vehicular traffic and recreational activities within the National Forest. Coordination should occur with the USFS to determine if the proposed improvement conflicts with the USFS management objectives. – To mitigate impacts, widening Cornville Road to four lanes from Page Springs Road to SR 89A improves congestion along the Cornville Road.
West Loop Road	***Purpose:*** *Improve traffic circulation in Cottonwood and meeting future traffic demand* ***Impacts:*** *Construction of this proposed improvement would involve acquiring additional right-of-way from USFS land. An Environmental Assessment will need to be conducted to determine potential impacts on the natural environment.*
Middle Verde Road Verde River crossing	***Purpose:*** *Provide alternative access between SR 260 and Middle Verde Road* ***Impacts:*** *Potential impacts posed by the construction of a bridge include: displacement of biological resources and riparian habitats, changes to the river's free-flow conditions, induced increase to the 100-year flood event water surface elevation, and impacts to the river's wild and scenic qualities.*

CONGESTION MANAGEMENT STRATEGIES

Traditional capacity improvement, such as adding travel lanes or constructing new roadways, can be costly and pose adverse impacts on the natural environment. Implementing low-cost congestion management strategies; however, may assist in reducing transportation demand and improving overall traffic flow. Congestion management strategies include:

- *Transportation demand management (TDM):* strategies generally focus on reducing the amount of vehicle travel by changing travel behavior (reducing vehicle miles traveled, trip length, travel model, etc.). Examples of TDM strategies include: ridesharing, High-Occupancy Vehicle (HOV) lanes, constructing park-and-ride facilities, increasing bike and pedestrian paths, improving transit service, parking management, creating auto-free zones, implementing employer-based flexible work schedules, etc.
- *Transportation system management (TSM):* driver behavior-oriented strategies that generally focus on improving the management and operations of a facility or transportation system. Examples of TSM strategies include: traffic signal synchronization/optimization, installing roundabouts, restricting turning movements, constructing bus pullouts, installing variable message signs, variable speed limits, access management, truck restrictions, Intelligent Transportation Systems (ITS), limiting on-street parking, etc.

TDM and TSM strategies were evaluated for the Verde Valley study area to identify methods of improving circulation, reducing congestion, and meeting existing and future demand. Below provides a review of potential congestion management strategies that ADOT, Yavapai County, and local jurisdiction should consider implementing to improve the local and regional transportation system.

Warning system to alert motorist of traffic conditions and emergency situation	Electronic message boards warn motorists of traffic conditions, adverse weather, and emergency situations. Providing real-time congestion and travel-time information along I-17 to major activity centers may assist in improving traffic flow along area highways, as motorists may alter their route depending on congestion levels. Potential locations for message boards include: I-17 at MP 286.0 (Northbound), I-17 at MP 301.0 (Southbound), SR 260 at MP 216.0, and SR 179 at MP 301.0.
Uptown Sedona – Motorists searching for parking creates additional delays and impairs local circulation	Developing a cohesive system of variable message signs and wayfinding signage to disseminate parking garages (Sedona Chamber of Commerce and Sinagua Plaza), parking availability, and parking rate information to travelers may reduce excessive congestion caused by motorists circulating to find a parking space. Currently ADOT has a wayfinding program; however, the City of Sedona is responsible for implementing and maintaining the signs.
Uptown Sedona – unsafe pedestrian crossings	Construct pedestrian bridges over SR 89A with elevators that tie into parking structures. Wayfinding signage directing pedestrians to utilize the bridges should also be installed.
	Construct sidewalk barriers that prevent pedestrians from crossing SR 89A and funnel pedestrian traffic to pedestrian bridges or crosswalks.
	Install pedestrian call button at mid-block crosswalks (Forest Road, Jordan Road, Arroyo Roble) with an LED display.
SR 179 – heavy congestion south of SR 89/SR 179 intersection	Install variable message signs on I-17 Northbound before Camp Verde and on I-17 Southbound south of Flagstaff to provide travel-time estimates to motorists to access major destinations. This enables motorists to choose alternate routes during congested and emergency situations.
	Evaluate the impact of constructing a parking lot south of Sedona that ties into a shuttle service that transports travelers to/from Sedona activity centers. Adding a bike rental facility at the parking lot may further reduce congestion.
Cottonwood Downtown – limited parking causes congestion	Construct a parking structure and install wayfinding signage to direct tourists to parking facilities.
	Restrict on-street parking during major events to reduce congestion and improve pedestrian safety.

PEDESTRIAN, BICYCLE, AND TRAIL IMPROVEMENT RECOMMENDATIONS

Existing pedestrian and trail facilities were reviewed in relation to: the location of activity centers such as schools, retail establishments, medical facilities, recreation centers; residential community developments; and existing roadway alignments. Analyzing the study area's existing pedestrian and trail facilities helped to identify locations that would benefit from these amenities and that would be closely integrated with the area's roadway system while maintaining pedestrian safety. The prioritization of the pedestrian, bike, and trail improvement projects is based on the facilities spatial relationship to schools and major activity centers, as well as input from the TAC, stakeholders, and the public. Figure 8.4 provides an illustration of recommended improvements for the near-, mid- and long- terms.

Based on technical analysis of historic crash records, numerous pedalcyclist related crashes occurred within the Verde Valley, notably along SR 89A in Cottonwood and Sedona. To reduce vehicle-pedalcyclist collisions, one potential improvement strategy is to add colored pavement within bike lanes. Bike lanes with colored pavement treatments increases driver awareness and improves motorists yielding behavior.



Bike Lane Colored Pavement

Benefits: Increases driver awareness of bike lane; provides pedalcyclist with a defined space to travel; increases motorists yielding behavior.

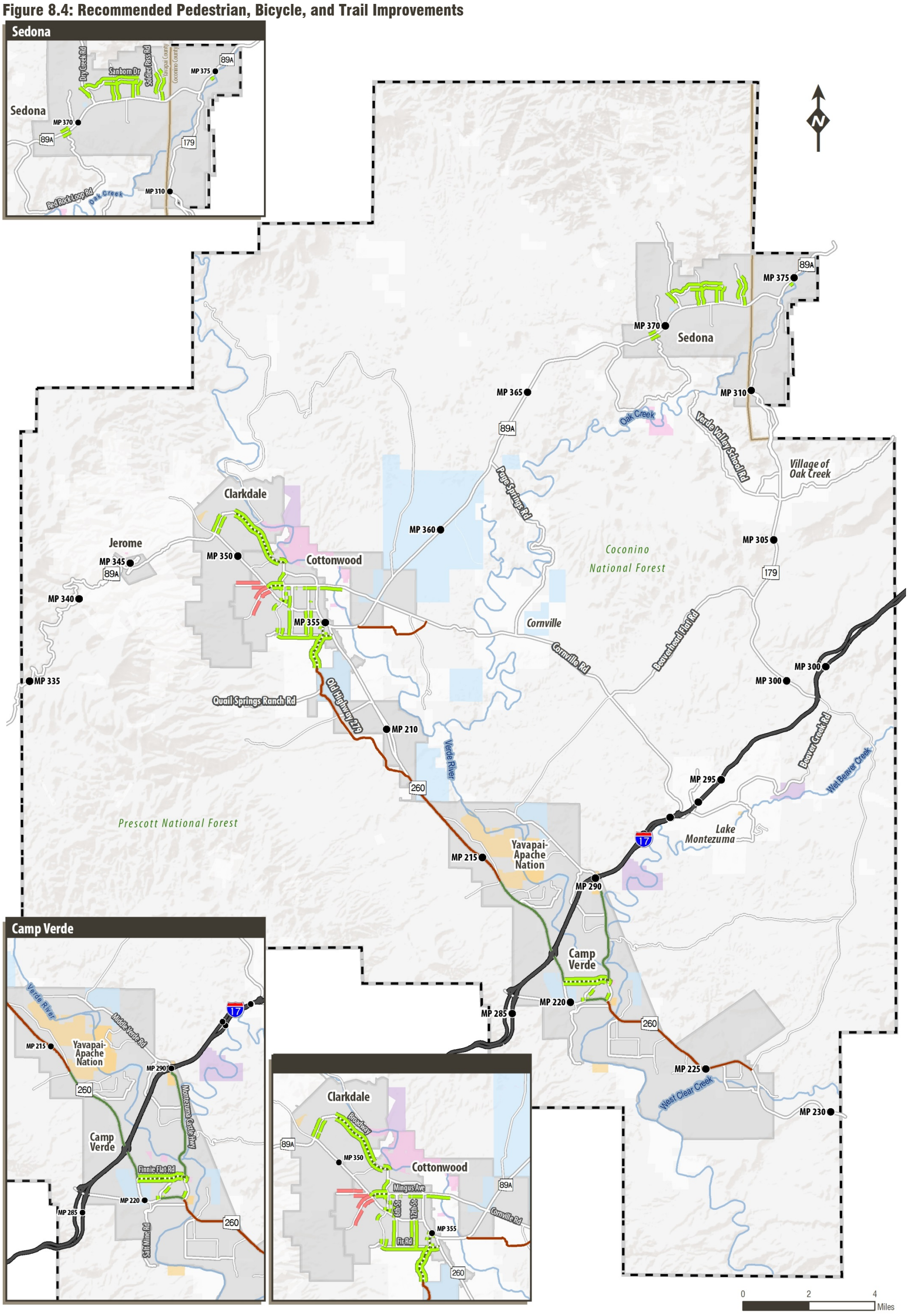
Considerations: The colored surface should be ski resistant and retro-reflective. Can be painted corridor-wide or at intersection crossings. Easily wears off and requires regular maintenance.

TRANSIT SERVICE RECOMMENDATIONS

Based on discussions with Cottonwood Area Transit (CAT), the Yavapai-Apache Transit System (YAN), and input from the TAC, stakeholders, and public the following actions and recommendations are needed in order to meet the public transportation needs of the Verde Valley:

- Implement recommendations included in the *Yavapai Regional Mobility Management Implementation Plan*
- Conduct an on-board ridership survey of existing transit service to evaluate the need to alter existing service routes or schedules, determine locations that may require service, and overall route performance
- Expand existing CAT service to include fixed transit service to Cornville
- Expand existing Verde Lynx service to include fixed transit service to the Village of Oak Creek
- Expand YAN/CAT service to include fixed transit service to the Lake Montezuma
- Conduct a Transit Feasibility study to determine the demand and need for:
    - Shuttle service between Village of Oak Creek and Sedona
    - Service between Camp Verde and Lake Montezuma
    - Service connecting Camp Verde and Verde Lakes
    - Service connecting Cottonwood, Cornville, and the Village of Oak Creek
    - Service between Lake Montezuma and the Village of Oak Creek
    - Sedona circulator route

Figure 8.4: Recommended Pedestrian, Bicycle, and Trail Improvements



TITLE VI IMPLICATIONS

To ensure that the recommended projects provide a fair distribution of benefits and burdens to all residents, an analysis of potential impacts on protected populations was conducted. It is anticipated that recommended transportation improvement projects will only have negative impacts during construction periods. Ultimately, this plan's recommendations will provide protected populations with enhanced, safer multimodal transportation. Table 8.4 provides an overview of potential impacts and benefits of recommended improvements on Title VI population.

Throughout the course of the study, efforts were made to include meaningful participation by all residents through stakeholder and public outreach. A two-phase public involvement process including two public meetings in which protected populations were invited to voice their opinion on the needs of the community and comment on recommended improvements. As recommended projects are implemented, it is vital that on-going outreach efforts to protected populations continue. Furthermore, consideration should be given during project development and construction to minimize or mitigate adverse impacts to minority business owners, the mobility needs of the protected populations, and residential parcels of protected populations.

Table 8.4: Impacts and Advantages of Recommended Projects to Title VI Populations

Project Type	Project Number	Project Description	Disproportionate/ Adverse Impacts	Benefits of Recommended Improvements
Roadway Deficiencies	**NT:** 1, 2, 3, 4, 5, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50 **MT:** 1, 2, 3, 4, 5, 6, 7, 8, 9 , 10, 11, 12, 13, 14, 15, 16, 17, 18 **LT:** 1, 2, 3, 4	Pave roadways; pavement rehabilitation; install shoulders; widen street; bridge replacement or rehabilitation; construct new road; upgrade functional classification; construct climbing lane	Temporary constraints to access activity centers during construction. Increased noise during construction. Closure of sidewalks during construction. Wider crossing distance for disabled and elderly individuals.	Improved overall safety and efficiency of roadway network. Improved road conditions and emergency response time. Improved pedestrian safety. Reduction in crashes and crash severity.
Roadside Safety Enhancements	**NT:** 11, 13, 14, 15, 16, 17	Remove vegetation; install signage; install street lighting	Temporary constraints and increased noise during construction.	Improved overall safety and efficiency of roadway network. Reduction in crashes and crash severity. Increased visibility of vehicles and pedestrians.
Intersection Traffic Control	**NT:** 6, 7, 8, 9, 10, 11 **LT:** 5, 6	Install traffic signals; enhance existing traffic signal; add turn lanes; reconfigure intersection to roundabout; remove roadside vegetation at intersection	Temporary constraints and increased noise during construction.	Improved overall safety and efficiency of roadway network. Improved road conditions and emergency response time. Improved pedestrian safety. Reduction in crashes and crash severity. Relieve traffic congestion.
Pedestrian and Bicycle Mobility	**NT:** 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 40, 41, 42, 43, 44 **MT:** 3, 6, 7, 8, 12, 13, 14, 15, 16, 18	Install multi-use paths, construct sidewalks; widen shoulders; add pedestrian crosswalks	Temporary constraints and increased noise during construction.	Improved pedestrian, bicycle, and roadway safety. Promote safe mobility and exercise. Provide alternative means of transportation.
Traffic Calming and Community Safety Improvements	**NT:** 12, 13, 14, 15, 16, 17, 18 **LT:** 1, 2, 3	Install message traffic boards; conduct RSA or access mange study	Temporary constraints and increased noise during construction.	Improved pedestrian, bicycle, and roadway safety. Reduction in crashes and crash severity.

This section discusses available funding sources, roadway standards and policies, and implementation actions to help implement the Plan for Improvements.

FUNDING SOURCES

Existing Funding Sources

The successful implementation of the *Verde Valley Master Transportation Improvement Plan* is contingent upon the availability of funding for design and construction of the improvement projects. Primary funding sources for the area include Federal programs, ADOT, and other regional government agencies such as NACOG.

Transportation Excise Tax: Yavapai County enacted a half-cent transportation excise tax to assist in funding transportation improvement projects.

Highway User Revenue Fund (HURF): The State of Arizona taxes motor fuels and collects a variety of fees relating to the registration and operation of motor vehicles in the state. These collections include gasoline and use fuel taxes, motor carrier fees, vehicle license taxes, motor vehicle registration fees, and other miscellaneous fees. These revenues are distributed to the cities, towns and counties of the state and to the State Highway Fund, which is administered by ADOT. These taxes and fees represent a source of revenues available for highway-related expenses. In fiscal year 2015, the HURF distribution to Yavapai County was $10.9 million, of which $2.6 million was allocated to jurisdictions in the Verde Valley.

Potential Funding Sources

Passed in July 2012, the Moving Ahead for Progress in the 21st Century Act (MAP-21) reauthorized surface transportation programs through fiscal year 2014. The program was enacted to create a streamlined, performance-based, and multimodal program to address the many challenges facing the Nation's transportation system. MAP-21 authorizes Federal-aid highway programs for the next two-years while maintaining current spending levels by consolidating core highway programs of SAFETEA-LU.

In addition, MAP-21 gives FTA significant new authority to strengthen the safety of public transportation systems throughout the United States. The Act aims to align Federal funding to progress towards the goals of restoring and replacing aged public transportation infrastructure, supporting development, and improving the efficiency of administering grant programs by consolidating and streamlining several programs.

Table 9.1 presents a comprehensive matrix of potential funding sources that local agencies can apply for funding to implement the Plan for Improvement. Additional funding opportunities include, but are not limited to:

- **Direct User Taxes and Fees:** examples of direct user taxes and fees include motor fuel taxes, fees bases on vehicle weight, tolls, and license registration taxes.
- **Development Impact Fees:** fees imposed on new developments to offset costs associated with building new infrastructure to accommodate the new travel demand generated by the development.
- **Community Facilities District (CFD):** special purpose, tax levying public improvement district the aids in financing and providing public infrastructure, such as water, sewer, schools and streets in a defined district.
- **Improvement Districts:** allows local agencies to collect special assessments on properties within the district in order to make infrastructure improvements within the district boundaries.
- **Community Development Block Grant Program (CDBG)**: Administrated by the Arizona Department of Housing, CDBG funds may be used on numerous development activities, such as acquisition of property for public purposes; construction or reconstruction of streets, sidewalks, pathways; and planning activities.
- **Public-Private Partnership (P3)**: partnership between a public agency and a private-sector entity, in which a private partner either finances or assists in financing a transportation project.

Table 9.1: Potential Funding Sources

Funding Program	Eligible Uses	Program and Funding Details	Application Deadline	Contact Information
Roadway and Safety Projects				
National Highway Performance Program (NHPP)	Funded by contract authority from the Highway Account of the Highway Trust Fund; NHPP projects must be on an eligible facility and support progress toward achievement of national performance goals for improving infrastructure condition, safety, mobility, or freight movement on the NHS, and be consistent with Metropolitan and Statewide planning requirements. Eligible activities include: • Construction, reconstruction, resurfacing, restoration, rehabilitation, preservation, or operational improvements of NHS segments • Construction, replacement (including replacement with fill material), rehabilitation, preservation, and protection (including scour countermeasures, seismic retrofits, impact protection measures, security countermeasures, and protection against extreme events) of NHS bridges and tunnels • Construction, reconstruction, resurfacing, restoration, rehabilitation, and preservation of, and operational improvements for, a Federal-aid highway not on the NHS, and construction of a transit project eligible for assistance under chapter 53 of title 49, if the project is in the same corridor and in proximity to a fully access-controlled NHS route, if the improvement is more cost-effective (as determined by a benefit-cost analysis) than an NHS improvement, and will reduce delays or produce travel time savings on the NHS route and improve regional traffic flow. • Bicycle transportation and pedestrian walkways. • Highway safety improvements on the NHS. • Capital and operating costs for traffic and traveler information, monitoring, management, and control facilities and programs. • Development and implementation of a State Asset Management Plan for the NHS including data collection, maintenance and integration, software costs, and equipment costs. • Development and implementation of a State Asset	The NHPP provides support for the condition and performance of the National Highway System (NHS), for the construction of new facilities on the NHS, and to ensure that investments of Federal-aid funds in highway construction are directed to support progress toward the achievement of performance targets established in a State's asset management plan for the NHS.		Peter Kleskovic Office of Program Administration Phone: 202-366-4652 David Bartz Office of Program Administration Phone: 512-536-5906

Table 9.1: Potential Funding Sources

Funding Program	Eligible Uses	Program and Funding Details	Application Deadline	Contact Information
Roadway and Safety Projects				
Surface Transportation Program (STP)	Federal Highway Administration funds administered through ADOT and Planning Organizations; States and metropolitan regions may use these funds for highway, bridge, transit (including intercity bus terminals), and pedestrian and bicycle infrastructure projects. Eligible projects include: • Construction, reconstruction, rehabilitation, resurfacing, restoration, preservation, or operational improvements for highways, bridges, and tunnels on any public roadway • Construction of new bridges and tunnels on a Federal-aid highway • Inspection and evaluation of bridges, tunnels and other highway assets as well as training for bridge and tunnel inspectors • Transit capital projects • Bicycle, pedestrian, and recreational trails • Environmental mitigation efforts	In general, STP projects may not be on local or rural minor collectors. Special rule allows States to use up to 15% of funds sub allocated for areas with a population of 5,000 or less on rural minor collectors. Project is scoped and request for funding submitted to NACOG.		David Bartz Office of Program Administration Phone: 512-536-5906 Email: David.Bartz@dot.gov
Highway Safety Improvement Program (HSIP)	Federal Highway Administration funds administered through ADOT and Planning Organizations; The HSIP is a core Federal-aid program with the purpose of achieving a significant reduction in fatalities and serious injuries on all public roads, including non-State-owned public roads and roads on tribal lands. Any project on a public road, trail or path that is consistent with the state's Strategic Highway Safety Plan and corrects a safety problem is eligible for HSIP funding. Eligible projects include: • Intersection improvements • Construction of shoulders • Traffic calming • Improvements for bicyclists, pedestrians, and individuals with disabilities. Minimum standards of retro-reflectivity of traffic signs and pavement markings	Project is scoped and request for funding submitted to Regional Planning Organization. The HSIP Local Government Coordinator provides assistance to local agencies throughout the process of identifying and developing the projects. 5.7% for most projects	Applications due in May	Mona Aglan-Swick HSIP Manager ADOT Statewide HSIP Program Phone: 602-712-7374 Email: maglan@azdot.gov Website: http://www.fhwa.dot.gov/map21/factsheets/hsip.cfm

Table 9.1: Potential Funding Sources (Continued)

Funding Program	Eligible Uses	Program and Funding Details	Application Deadline	Contact Information
Governor's Office of Highway Safety	Administered by Arizona Governor's Office of Highway Safety (GOHS); Finances State and local government highway safety projects. Eligible projects include: inventories, need studies, engineering studies, system development, program implementation, or for purchasing equipment. Cannot be used for the construction, design, or maintenance of highways or for highway construction research papers.	Project funding is limited to a maximum of $50,000 per project contract	Applications due in February	Director Alberto Gutier Governor's Office of Highway Safety 3030 North Central Ave #1550 Phoenix, AZ 85012
National Priority Safety Program	Administered by National Highway Traffic Safety Administration (NHTSA) at the federal level and Arizona Governor's Office of Highway Safety at the interstate level; Programs include: • Section 405(b): Occupant Protection • Section 405(c): State Traffic Safety Information System Improvements • Section 405(d): Impaired Driving Countermeasures • Section 405(e): Distracted Driving • Section 405(f): Motorcyclist Safety • Section 405(g): Graduated Driver Licensing		Applications due in July	Director Alberto Gutier Governor's Office of Highway Safety 3030 North Central Ave #1550 Phoenix, AZ 85012
High Risk Rural Roads (HRRR)	Variety of capital projects including: • Intersection safety improvements • Pavement and shoulder widening • Improving pedestrian and bicycle facilities • Improving highway signage and pavement markings • Traffic control devices • Installing guardrails and barriers • Construction of a traffic calming features • Railway-highway crossing safety features	MAP-21 legislation does not set aside funds for a high risk rural roads program. However, the Special Rule requires States with an increase in fatality rates on rural roads to obligate a specified amount of HSIP funds on HRRRs.		
Federal Lands Transportation Program (FLTP)	Funded by contract authority from the Highway Account of the Highway Trust Fund; Eligible projects include, but are not limited to: • Program administration, transportation planning, research, preventive maintenance, engineering, rehabilitation, restoration, construction, and reconstruction of Federal lands transportation facilities • Operations and maintenance of transit facilities • Any transportation project eligible under title 23 of the United States Code that is within or adjacent to, or that provides access to Federal lands open to the public	On October 1 of each fiscal year, funds will be allocated among Federal Land Management Agency (FLMA) partners		Arizona Division Federal Highway Administration 4000 N. Central Avenue, Ste. 1500 Phoenix, AZ 85012-3500 Phone: 602-379-3646 Fax: 602-382-8998 For information, visit: http://www.fhwa.dot.gov/azdiv

Table 9.1: Potential Funding Sources (Continued)

Funding Program	Eligible Uses	Program and Funding Details	Application Deadline	Contact Information
Surface Transportation Program (STP) - Off-System Bridges	Federal Highway Administration funds administered through ADOT and Planning Organizations; From the State's STP apportionment, States are required to obligate a portion of funds (not from sub allocated amounts) for bridges not on Federal-aid highways (off-system bridges). Eligible projects include, but are not limited to: replacement, de-icing, construction, inspection and evaluation of bridges.	For projects to replace or rehabilitate deficient off-system bridges funded wholly by State/local sources, any amounts spent post-enactment that are in excess of 20% of project costs may be credited to the non-Federal share of eligible bridge projects in the State.	Project is scoped and request for funding submitted to NACOG. Project is scoped and request for funding submitted to the Planning Organization.	Jason Kelly NACOG Transportation/Transit Planning 3130 Robert Rd. Ste. 1 Prescott Valley, AZ 86314 Phone: 928-830-0127 Email: jkelly@nacog.org
Federal Lands Access Program	Funded by contract authority from the Highway Account of the Highway Trust Fund; Eligible projects include, but are not limited to: • Transportation planning, research, engineering, preventive maintenance, rehabilitation, restoration, construction, and reconstruction of Federal Lands Access Transportation Facilities • Operation and maintenance of transit facilities • Any transportation project eligible under title 23 of the United States Code that is within or adjacent to, or that provides access to Federal lands open to the public	The funds made available under this program will be available for the current year plus three additional years. Funds are distributed by formula among States that have Federal lands		Allen Grasmick Central Federal Lands Highway Division 12300 West Dakota Avenue Lakewood, CO 80228 Phone: 720-963-3500 Email: Allen.Grasmick@dot.gov For general program information, visit: http://flh.fhwa.dot.gov/programs/flap
Section 402 State and Community Highway Safety Grant Program	Administered by Arizona Governor's Office of Highway Safety; Funds can be spent in accordance with national guidelines for programs such as reducing impaired driving; reducing speeding; encouraging the use of occupant protection; improving motorcycle safety; improving pedestrian and bicycle safety; improving enforcement of traffic safety laws; improving traffic records; and emergency services.	MAP-21 authorizes funding for the 402 program at $235 million each year in FY 2013 and FY 2014.	Proposals due to the Arizona Governor's Office of Highway Safety in April/May	Director Alberto Gutier Governor's Office of Highway Safety 3030 North Central Ave #1550 Phoenix, AZ 85012
Road Safety Assessment	Administered by ADOT Traffic Safety Section; The Road Safety Assessments (RSA) program conducts 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 and experienced members.	Technical assistance, no actual awarding of funds	On-going	Richard S. Weeks, PE, PTOE Program Manager Road Safety Assessment 1615 West Jackson St Mail Drop 065R Phoenix, AZ 85007-3217 Phone: 602-712-4382 Fax: 602-712-3243 Email: rweeks@azdot.gov

Table 9.1: Potential Funding Sources (Continued)

Funding Program	Eligible Uses	Program and Funding Details	Application Deadline	Contact Information
Planning Assistance for Rural Areas (PARA) Program	Federal funds administered through ADOT; PARA funds are limited to planning applications and may not be used for the design or construction of transportation facilities. PARA funds may be applied to address a broad range of planning issues related to roadway and non-motorized transportation modes. Funds may also be applied to studies dedicated solely to the planning of public transportation services.	The PARA program is funded 100% by ADOT using Federal Statewide Planning and Research (SPR) funds. The awarded funding is a limit or cap of $250,000 for each PARA study process. Applications are submitted to ADOT MPD on an annual basis.	Applications for planning projects are submitted to ADOT on an annual basis in early summer.	Dan Gabiou, Program Manager ADOT MPD 206 S. 17th Ave., MD 310B Phoenix, AZ 85007 Phone: 602-712-7025 Fax: 602-712-6412 Email: dgabiou@azdot.gov
USDA Community Facility Grants	Administered by USDA Rural Development; Grant funds may be used to assist in the development of essential community facilities. Grant funds can be used to construct, enlarge, or improve community facilities for health care, public safety, and community and public services. This can include the purchase of equipment required for a facility's operation.		On-going	Ernie Wetherbee USDA Rural Development 230 North 1st Avenue, Suite 206 Phoenix, AZ 85003 Phone: 602-280-8701 Fax: 602-280-8881 http://www.rd.usda.gov/programs-services/community-facilities-direct-loan-grant-program/az
SEARCH - Special Evaluation Assistance for Rural Communities and Households	Administered by USDA Rural Development; This program helps very small, financially distressed rural communities extend and improve water and waste treatment facilities that serve local households and businesses. Funds can be used to pay for predevelopment planning costs for: • Feasibility studies to support applications for funding water or waste disposal projects • Preliminary design and engineering analysis • Technical assistance for the development of an application for financial assistance	Areas to be served must be rural and financially distressed: rural areas not in a city or town, populations of 2500 or less, and the area must have a median household income below the poverty line	On-going	Ernie Wetherbee USDA Rural Development 230 North 1st Avenue, Suite 206 Phoenix, AZ 85003 Phone: 602-280-8701 Fax: 602-280-8881 http://www.rd.usda.gov/programs-services/search-special-evaluation-assistance-rural-communities-and-households/az
Accelerated Innovation Deployment (AID) Demonstration	Administered by Federal Highway Administration funds; Eligible projects include, but are not limited to: • Accelerate adoption of innovative technologies in all aspects of highway transportation • Construct longer-lasting highways • Improve highway efficiency, safety, mobility, reliability, service life, environmental protection, and sustainability	Award recipients must obligate awarded funds to project within 6 months of allocation.	Open, rolling solicitation.	Ewa Flom FHWA Center for Accelerating Innovation 1200 New Jersey Ave, SE Washington, DC 20590 Phone: 202-366-2169 Email: ewa.flom@dot.gov https://www.fhwa.dot.gov/innovation/grants/

Table 9.1: Potential Funding Sources (Continued)

Funding Program	Eligible Uses	Program and Funding Details	Application Deadline	Contact Information
TIGER Grants	Administered by the United States Department of Transportation; Eligible projects include, but are not limited to: • Highway or bridge projects eligible under title 23, United States Code; • Public transportation projects eligible under chapter 53 of title 49, United States Code; • Freight rail projects; • High speed and intercity passenger rail projects; • Port infrastructure investments	$1 million minimum grant No match requirement, though competitive applications often feature a match Tribal Transportation Program (TTP) Funds are eligible to match/complete financing	Applications must be submitted through Grants.gov	Office of the Under Secretary for Policy Office of the Secretary of Transportation 1200 New Jersey Ave, SE Washington, DC 20590 Phone: 202-366-4544 For general program information, visit: http://www.dot.gov/tiger
Transportation Alternatives Program (TAP)	Federal Highway Administration funds administered through ADOT and Regional Planning Organizations; Eligible projects include, but are not limited to: • Bicycle and pedestrian facilities • Safe routes projects for non-drivers • Construction of turnouts and overlooks • Community improvement activities including vegetation management and historic preservation • Environmental mitigation activity	TAP funds are available for obligation for a period of 3 years after the last day of the fiscal year for which the funds are authorized.		Patrick Stone TE Section Manager Arizona Department of Transportation 1615 W. Jackson Street, MD EM10 Phoenix, AZ 85226 Phone: 602-712-4428 Email: pstone@azdot.gov Website: http://www.fhwa.dot.gov/environment/transportation_alternatives/
Transportation Infrastructure Financing and Innovation Act (TIFIA)	Eligible projects include, but are not limited to: • Highway, passenger rail, transit and certain intermodal projects • Certain freight rail facilities • Surface transportation infrastructure modifications necessary to facilitate direct intermodal transfer • Intelligent transportation systems • Intercity passenger bus or rail facilities and vehicles • Groups of related eligible transportation projects secured by a common pledge	The TIFIA program provides loans, loan guarantees, and standby lines of credit to highway, bridge, transit, and intermodal freight projects that have a dedicated source of revenue pledged toward repayment.		
State and Community Highway Safety Grant Program	Funds can be spent in accordance with national guidelines for programs such as reducing impaired driving; reducing speeding; encouraging the use of occupant protection; improving motorcycle safety; improving pedestrian and bicycle safety; improving enforcement of traffic safety laws; improving traffic records; and enhancing emergency services.	The Section 402 program provides grants to states to improve driver behavior and reduce deaths and injuries from motor vehicle-related crashes.		Director Alberto Gutier Governor's Office of Highway Safety 3030 North Central Ave #1550 Phoenix, AZ 85012

Table 9.1: Potential Funding Sources (Continued)

Funding Program	Eligible Uses	Program and Funding Details	Application Deadline	Contact Information
AAA Foundation for Traffic Safety	Projects needed to evaluate new or existing traffic safety initiatives.	Funding for projects to discover the causes of traffic crashes, prevent them, and minimize injuries when they do occur.		
Pedestrian, Bicycle, and Trail Projects				
Transportation Alternatives Program (TAP) - Safe Routes to School	Federal Highway Administration funds administered through ADOT and Regional Planning Organizations; Safe Routes to School (SRTS) eligible projects and activities include: • Infrastructure-related projects • No infrastructure-related activities • Safe Routes to School coordinator	80 percent Federal/20 percent State or local match subject to the sliding scale adjustment		Eric Boyles ADOT - Local Public Agency Section 1615 W. Jackson St., MD EM11 Phoenix, AZ 85007 Phone: 602-712-8010 Email: eboyles@azdot.gov Website: http://www.fhwa.dot.gov/environment/safe_routes_to_school/
Transportation Alternatives Program (TAP) - Recreational Trails Program (RTP)	FHWA Administered through Arizona State Parks; Recreational Trails Program (RTP) provides funds to the States to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses.			Mickey Rogers Arizona State Parks Resources Management Section 1300 W Washington St Phoenix AZ 85007-2932 Phone: 602-542-6942 Fax: 602-542-4180 Email: mrogers@azstateparks.gov Website: http://azstateparks.com/grants/index.html
Transit Projects				
Rural Transit Assistance Program (RTAP)	Federal funds administered through ADOT; Training, technical assistance, research, and outreach funding to all 5310, 5311, 5316, and 5317 grantees statewide.	To be eligible to receive a RTAP Scholarship, applicants must be an active Arizona grantee receiving 5311 and 5310 FTA program funding.	All grantees must submit a RTAP Application at least 30 days prior to the training event.	Lorna Wilson Phone: 202-366-2053 Website: http://www.fta.dot.gov/grants/13093_3554.html

Table 9.1: Potential Funding Sources (Continued)

Funding Program	Eligible Uses	Program and Funding Details	Application Deadline	Contact Information
Transit Projects				
Tribal Transit Program (TTP)	Administered by the Federal Transit Administration; Eligible projects include public transportation capital projects for start-ups, replacement or expansion, operating costs for start-ups, and planning.	In FY 13 approximately $5 million in funding was available for the TTP. The federal share for projects selected under the TTP discretionary program was up to a 90 percent federal share of project costs, unless the Indian tribe could demonstrate a financial hardship in their application. Eligible applicants could also apply for planning grants of up to $25,000 for planning studies.	Check the TTP Notice of Funding Availability upon publication in the Federal Register	Contact the appropriate FTA Regional Office at *http://www.fta.dot.gov* for proposal-specific information and issues. For general program information, contact: Lorna Wilson, Office of Program Management, 202-366–0893 Email: lorna.wilson@dot.gov Website: http://www.fta.dot.gov/grants/15926_3553.html
Enhanced Mobility of Seniors and Individuals with Disabilities (Section 5310)	Federal funds administered through ADOT; Program funds are used for capital assistance, the purchase of vehicles, related equipment and operating funds statewide. Eligible recipients include private non-profit and public agencies that provide transportation to the elderly and disabled.	Using these funds for operating expenses requires a 50 percent local match while using these funds for capital expenses (including acquisition of public transportation services) requires a 20 percent local match.	Applications due to NACOG in March	Jason Kelly NACOG Transportation/Transit Planning 3130 Robert Rd. Ste. 1 Prescott Valley, AZ 86314 Phone: 928-830-0127 Email: jkelly@nacog.org Website: http://www.fta.dot.gov/map21_16244.html
Rural Area Formula Grants (Section 5311)	Federal funds administered through ADOT; The Rural Program provides funding to States for the purpose of supporting public transportation in rural areas including funding for Tribal Transit, Appalachian region, Intercity Bus and technical assistance programs and services. Rural areas are locations with populations less than 50,000, where many residents often rely on public transit to reach their destinations.	The Tribal program now consists of a $25 million formula program and a $5 million discretionary grant program. Formula factors include vehicle revenue miles and the number of low-income individuals residing on tribal lands. Federal share may exceed 85% for certain projects related to ADA, CAA, and for certain bicycle projects.	Applications are submitted in December, and awards are generally made in July of each year.	Sara Allred 5311 Program Manager 206 S 17th Ave MD 340B Phoenix, AZ 85007 Phone: 602-712-4498 Email: sallred@azdot.gov Website: http://www.fta.dot.gov/grants/13093_3555.html

Table 9.1: Potential Funding Sources (Continued)

Funding Program	Eligible Uses	Program and Funding Details	Application Deadline	Contact Information
Tribal Projects				
Tribal Transportation Program (TTP)	Federal funds allocated to BIA-DOT Western Regional Office on a formula basis; TTP funds may be used by the Tribe to pay the costs of the following activities: • Transportation planning, research, maintenance, engineering, rehabilitation, restoration, construction, and reconstruction of tribal transportation facilities • Operation and maintenance of transit programs and facilities that are located on, or provide access to, tribal land, or are administered by a tribal government	Funding formula is based on each tribe's total population and mileage. Improvement projects must be included in the Tribe's TIP.	Improvement projects must be submitted to FHWA by August	Paul Bonar BIA-DOT Western Regional Office Division of Transportation 4th Floor Mailroom, MS 370 Phoenix, AZ 85004 Phone: 602-379-6782 Email: Paul.Bonar@bia.gov
Tribal High Priority Projects (THPP)	Federal funds are allocated to the Regional Office based on approved Tribal Applications for these funds; Repair or reconstruction of eligible facilities in the national inventory of tribal transportation facilities. Funds may not be used for transportation planning; research; routine maintenance activities; structures and erosion protection; landscaping and irrigation systems; purchasing equipment; or condemnation of land for recreational trails.	Funds appropriated from the Federal General Fund, to remain available until September 30 of the third fiscal year after the year appropriated. An applicant may have only one application for assistance pending at any one time. Project funding is limited to a $1 million per application.		Paul Bonar BIA-DOT Western Regional Office Division of Transportation 4th Floor Mailroom, MS 370 Phoenix, AZ 85004 Phone: 602- 379-6782 Email: Paul.Bonar@bia.gov
Tribal Transportation Program Safety Funds (TTPSF)	Federal Funds are allocated to the Regional Office based on approved Tribal Applications for these funds; MAP-21 established Tribal Safety funds by setting aside not more than 2 percent of the funds made available under the Tribal Transportation Program for each fiscal year. Eligible activities include: Tribal Safety Plans; Enforcement and EMS; Education Programs; Engineering Improvements; Data Collection; Data analysis and improvement; Road Safety Audits; and funding goals for each category.	Projects ranked by BIA, FHWA and Tribes. Funded by a set-aside of up to 2% from TTP funds. Maximum of $9,000,000 could be made available in each of FYs 2013 and 2014 for TTPSF.		Russell Garcia TTPSF Program Manager Federal Highway Administration 1200 New Jersey Avenue SE., Washington, DC 20590 Phone: 202-366-9815 Email: russell.garcia@dot.gov
Tribal Bridge Program	Federal Funds are allocated to the Regional Office based on approved applications from the Region for these funds; Funds may be used for planning, design, engineering, preconstruction, construction, and inspection of a project to replace, rehabilitate, seismically retrofit, paint, or for anti-icing and deicing, or to implement any countermeasures (including multiple-pipe culverts) for eligible tribal transportation facility bridges. To be eligible, a bridge must have an opening of at least 20 FT, be classified as a tribal transportation facility, and be structurally deficient or functionally obsolete.	Funded by a set-aside of up to 2% from TTP funds.		Paul Bonar BIA-DOT Western Regional Office Division of Transportation 4th Floor Mailroom, MS 370 Phoenix, AZ 85004 Phone: 602-379-6782 Email: Paul.Bonar@bia.gov

IMPLEMENTATION STRATEGIES

Implementation of the recommended Improvement Plan to enhance the safety and mobility along roadways within Verde Valley requires active participation from local citizens, private entities; and local, county, and State government officials. The following actions are recommended to successfully implement the Plan for Improvements developed as part of this study.

- Present the *Verde Valley Master Transportation Plan* to the Yavapai County Board of Supervisors for approval of recommendations.
- Integrate the implementation plan into the next update of the Yavapai County Improvement Program (CIP) as available funding allows.
- Integrate short-term priority improvements into the NACOG Transportation Improvement Program (TIP).
- Incorporate high priority improvement projects in the State Transportation Improvement Program (STIP). In order to receive any federal funding, transportation improvement projects must be included in the State TIP.
- Establish a partnership with Yavapai County, Coconino County, Coconino National Forest, Prescott National Forest, and ADOT for the on-going planning, maintenance, improvement, and funding for roadways.
- Coordinate with ADOT and local jurisdictions to complete RSA, access management, traffic warrant studies, and feasibility studies.
- Work with ADOT, local jurisdictions, and the Arizona Department of Tourism to determine the most appropriate locations for variable message signs to welcome incoming motorists and inform them of travel times to attractions in the Verde Valley.
- Develop and implement access management plans for State Routes, County roads, and local streets.
- Coordinate the implementation of the *Verde Valley Master Transportation Plan* with the previously completed *Clarkdale Transportation Study, Camp Verde Business Corridor Study* and the upcoming *Sedona Transportation Master Plan*.
- Develop a partnership with Yavapai County, Coconino County, Yavapai-Apache Nation and ADOT to confirm existing ROW widths and identify areas where additional ROW is required. If needed, purchase required ROW from property owners.
- Establish partnerships with new commercial developments for the planning, design, improvement, and funding of roadway improvements that provide pedestrian or motor vehicle access to developments.
- Promote public-private partnerships between the local jurisdictions and the private sector to implement improvements.
- Collaborate with local property owners, real estate professionals, and developers to identify economic development goals and to formulate an outreach plan to promote development along the economic corridors.
- As development occurs, pursue developer stipulations and exactions in order to construct necessary infrastructure for the additional growth.
- Solicit grants for bicycle and pedestrian improvements to add bicycle lanes, enhance connections to existing facilities, and to construct new facilities in deficient locations.
- Develop policies and procedures to promote alternative modes of transportation.
- Review and update street design standards, develop comprehensive access management standards, and detailed traffic impact guidelines and procedures.
- Further research and apply for funding for each project identified in the Plan for Improvements.