



Draft Purpose and Need

North-South Corridor Study

(version 2.c)

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ADOT Project No. 999 PN 000 H7454 01L
Pinal County, Arizona*

*Arizona Department of Transportation
Federal Highway Administration*

in cooperation with:

*Arizona Game and Fish Department
Federal Railroad Administration
U.S. Army Corps of Engineers
U.S. Bureau of Indian Affairs – San Carlos Irrigation Project
U.S. Bureau of Land Management
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service
Western Area Power Administration*

December 4, 2018



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Prepared for
Arizona Department of Transportation
Environmental Planning Group
1611 West Jackson Street, Mail Drop EM02
Phoenix, Arizona 85007

Prepared by
HDR
3200 East Camelback Road, Suite 350
Phoenix, Arizona 85018

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Abbreviations and Acronyms

ADOT	Arizona Department of Transportation
ASLD	Arizona State Land Department
ASR	Alternatives Selection Report
AZTDM2	second generation Arizona statewide travel demand model
CAG	Central Arizona Governments
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
Corridor	North-South Corridor
DEIS	Draft Environmental Impact Statement
EIS	Environmental Impact Statement
FEIS	Final Environmental Impact Statement
FHWA	Federal Highway Administration
Framework Program	Statewide Transportation Planning Framework Program
I-10	Interstate 10
LOS	level of service
MAG	Maricopa Association of Governments
MPA	municipal planning area
MPO	metropolitan planning organization
NEPA	National Environmental Policy Act
NSCS	North-South Corridor Study
ROD	Record of Decision
ROW	right-of-way
SCMPO	Sun Corridor Metropolitan Planning Organization
SR	State Route
UPRR	Union Pacific Railroad
US 60	U.S. Route 60
USC	United States Code
USDOT	U.S. Department of Transportation

Purpose and Need

The Arizona Department of Transportation (ADOT), in partnership with the Federal Highway Administration (FHWA), is considering the construction and operation of a north-to-south transportation corridor in Pinal County, Arizona. If an action alternative is selected and constructed, the facility would improve connectivity and accessibility and introduce additional roadway capacity to support projected population and employment growth in Pinal County and across the larger region.

Introduction

Tiered Environmental Review Process

The North-South Corridor Study (NSCS) Tier 1 Draft Environmental Impact Statement (DEIS, Project No. FHWA-AZ-EIS-18-01-D) has been prepared to evaluate the potential short-term and long-term impacts associated with proposed action corridor alternatives. These action corridor alternatives were developed based on input from the public; coordination with local, regional, state, and federal agencies and tribes; and findings from previous studies. The action corridor alternatives carried forward for detailed analysis in this DEIS best meet the purpose and need for the proposed action.

This DEIS has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended [42 United States Code (USC) § 4332(2)(c)] and all other applicable statutory regulations. Many federal agencies have adopted their own policies for implementing NEPA, all of which follow the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (40 Code of Federal Regulations [CFR] Parts 1500 to 1508). FHWA, in coordination with the Federal Transit Administration, has also developed Environmental Impact and Related Procedures (23 CFR Part 771) to supplement the CEQ regulations. These regulations set forth all FHWA and U.S. Department of Transportation (USDOT) requirements under NEPA for the processing of highway and public transportation projects. As such, FHWA policy (23 CFR § 109) ensures:

that possible adverse economic, social, and environmental effects relating to any proposed project on any Federal-aid system have been fully considered in developing such project, and that the final decisions on the project are made in the best overall public interest, taking into consideration the need for fast, safe and efficient transportation, public services, and the costs of eliminating or minimizing such adverse effects and the following: (1.) air, noise, and water pollution; (2.) destruction or disruption of man-made and natural resources, aesthetic values, community cohesion and the availability of public facilities and services; (3.) adverse employment effects, and tax and property values losses; (4.) injurious displacement of people, businesses and farms; and (5.) disruption of desirable community and regional growth.

The above-mentioned policies and procedures establish the context for evaluating potential impacts that may be borne by individual resources as a result of a proposed action. In addition, numerous other statutory requirements must be considered when evaluating potential impacts on both the natural and human environments. Applicable laws and statutory requirements are described in greater detail for the resource topics to which they apply in the DEIS.

This document is part of a “tiered” NEPA review in accordance with CEQ’s NEPA regulations. The Tier 1 environmental review for the proposed action broadly assesses environmental impacts associated with the action corridor alternatives, followed by detailed project-level (Tier 2) environmental reviews by ADOT and FHWA for specific alternatives that will incorporate and reference the decisions and analyses conducted as part of this Tier 1 review. This Tier 1 DEIS informs the public, agencies, and other stakeholders about the No-Action Alternative and action corridor alternatives being considered by ADOT and FHWA, and their potential effects on human, built, and natural environmental resources. If an action

corridor alternative is selected, this Tier 1 DEIS will identify a preferred corridor alternative to be carried forward for analysis in the Tier 1 Final Environmental Impact Statement (FEIS) and subsequent Tier 2 studies.

For the NSCS, the scoping period began with the publication of a Notice of Intent to complete a project-level environmental impact statement (EIS) in the *Federal Register* on September 20, 2010. Between October 2010 and early 2016, the NEPA EIS phase of the NSCS progressed with the development and evaluation of alternatives, as documented in the *Alternatives Selection Report* (ASR) in October 2014. Subsequent environmental technical analyses and conceptual design work supported a project-level DEIS. Throughout these efforts, ADOT and FHWA held regular meetings with cooperating agencies, participating agencies, tribes, and many key stakeholders. The agencies also conducted public meetings for the ASR and numerous individual stakeholder meetings as the study advanced. In 2016, ADOT and FHWA converted the project-level NEPA EIS process to a Tier 1-level EIS, in accordance with CEQ regulations codified at 40 CFR § 1502.20. A revised Notice of Intent was published in the *Federal Register* on October 3, 2016.

Corridor Location and Study Area

The North-South Corridor (Corridor) study area is bounded on the north by U.S. Route 60 (US 60) and extends south for approximately 45 miles to Interstate 10 (I-10) (Figure 1). The Corridor's northern terminus is near Apache Junction on US 60, and the southern terminus is at I-10 between Marana and Eloy. Coolidge and Florence are in the central part of the study area. An extension of State Route (SR) 24 from its currently designed terminus at Ironwood Drive to the Corridor is incorporated into this study.

To facilitate the development of alternatives, an approximately 900-square-mile study area was delineated. The individual areas of analysis for the action corridor alternatives carried forward in this DEIS are generally much smaller than the study area; however, this area represents the location where the need for transportation improvements has been identified and where the greatest extent of potential impacts would be evaluated. The study area is generally bounded by US 60 on the north; I-10 on the south; roughly SR 202L, the Gila River Indian Community, and SR 87 on the west; and roughly SR 79 on the east. The study area is primarily located in Pinal County but also includes a small portion of southeastern Maricopa County. It includes incorporated cities and towns such as Apache Junction, Mesa, Queen Creek, Florence, Coolidge, and Eloy; portions of the Gila River Indian Community and the Tohono O'odham Nation; and unincorporated areas in Pinal and Maricopa Counties. Figure 2 shows the study area, the existing transportation network, and major points of interest.

Study Partners

The need for a north-to-south transportation corridor has been under consideration at the local, regional, and state level for more than 15 years. As a result of extensive dialogue between and among agencies and stakeholders regarding the feasibility of a new transportation facility, the NSCS EIS process was initiated—one of the earlier stages of project development and precursor to this DEIS. This began a formalized process to identify agencies and other stakeholders to be partners with ADOT and FHWA throughout the decision-making process.

At the onset of the study in 2010, detailed coordination and public involvement plans were prepared. They identify how and to what extent coordination and outreach efforts would occur throughout the decision-making process. Letters were sent to a number of federal, state, and local agencies and other stakeholders notifying them of the intent of the NSCS ASR and subsequent DEIS and requested their participation in the decision-making process. Since that time, the decision was made to complete a Tier 1 EIS.

The lead agencies for the project are ADOT and FHWA. Cooperating and participating agencies from the project-level EIS process were asked whether they wanted to participate in the Tier 1 EIS, and other agencies were added, as germane to the Tier 1 study and anticipated issues. These agencies that have elected to be part of the decision-making process for this study are identified by category in Table 1. All efforts to engage these agencies and other stakeholders in the decision-making process are documented in the *North-South Corridor Study SAFETEA-LU Section 6002 Coordination Plan for Agency and Public Involvement* (ADOT 2017).

Figure 1. North-South Corridor regional location

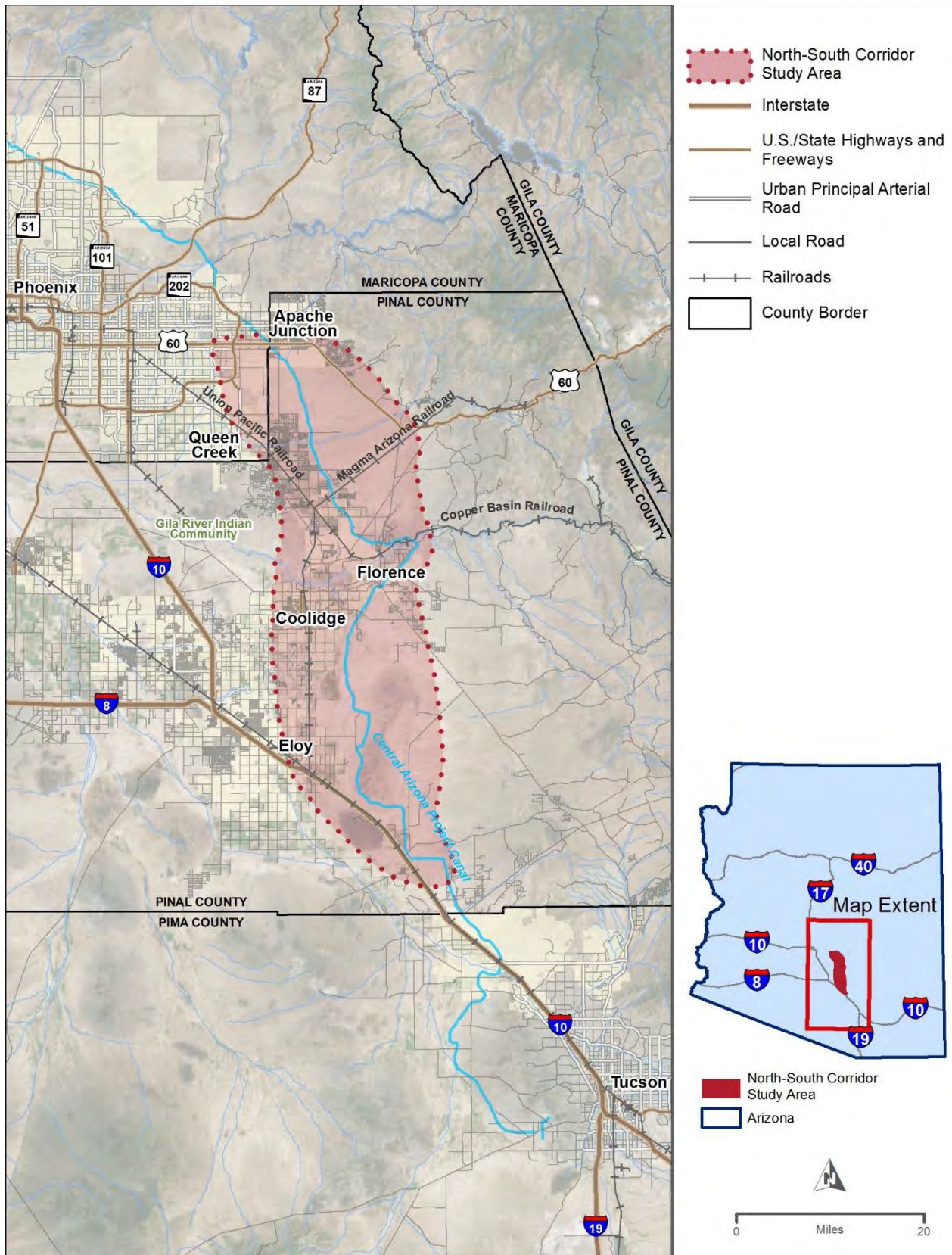


Figure 2. Study area and roadway network

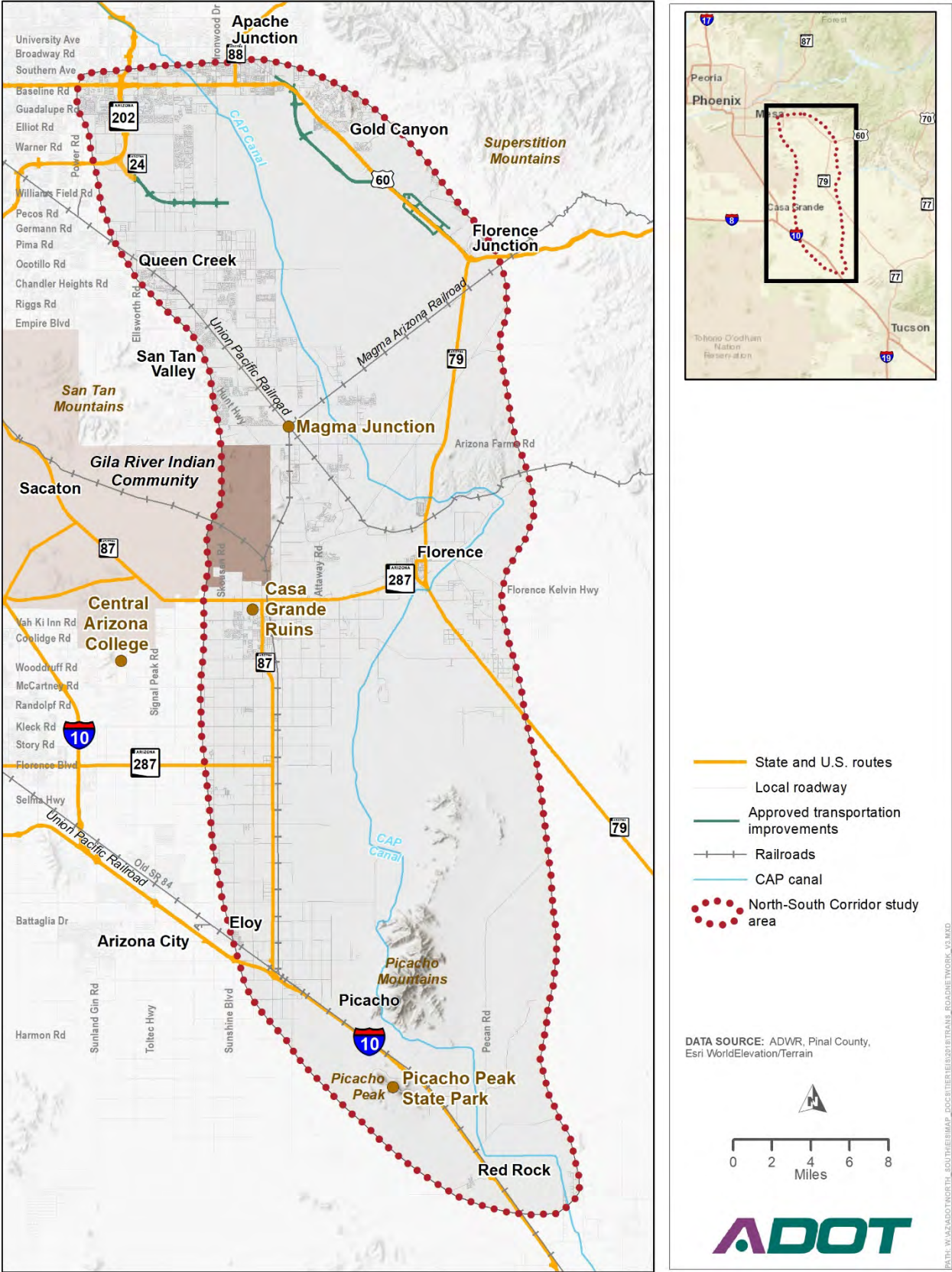


Table 1. Cooperating and participating agencies

Cooperating agencies	
Arizona Game and Fish Department	U.S. Bureau of Land Management
Federal Railroad Administration	U.S. Environmental Protection Agency
U.S. Army Corps of Engineers	U.S. Fish and Wildlife Service
U.S. Bureau of Indian Affairs – San Carlos Irrigation Project	Western Area Power Administration
Participating agencies	
Arizona Department of Public Safety	Maricopa County Department of Transportation
Arizona State Historic Preservation Office	National Park Service
Arizona State Land Department	Phoenix-Mesa Gateway Airport Authority
Arizona State Parks	Pinal County
Central Arizona Governments	Salt River Project
City of Apache Junction	San Carlos Apache Tribe
City of Casa Grande	Sun Corridor Metropolitan Planning Organization
City of Coolidge	Town of Florence
City of Eloy	U.S. Bureau of Indian Affairs – Western Regional Office
Flood Control District of Maricopa County	U.S. Bureau of Reclamation
Hopi Tribe	

Source: Arizona Department of Transportation (2017)

Lead Agencies. In accordance with 40 CFR § 1508.16, the lead agencies are those preparing or taking primary responsibility for preparing the EIS. For the NSCS, FHWA and ADOT, as lead agencies, manage the Section 6002 process and the EIS preparation, provide opportunities for public and agency involvement, approve the environmental document (including this Tier 1 EIS, and NEPA clearance with Tier 2 studies), and provide funding.

Cooperating Agencies. NEPA regulations [23 CFR § 771.111(d)] require that those federal agencies with jurisdiction by law (with permitting or land transfer authority) or with special expertise regarding any potential project-induced environmental impact be invited to serve as cooperating agencies for an EIS. By agreement with lead agencies, a state or local agency with similar qualifications or a Native American tribe with interest in the affected land may also become a cooperating agency. Agencies are required by law to acknowledge and accept or decline the invitation.

Participating Agencies. Participating agencies can include federal, state, tribal,¹ regional, and local governmental agencies with an interest in the proposed action. Federal agencies that decline the request to be a cooperating agency are designated as a participating agency unless formally documented otherwise. Nongovernmental organizations and private entities cannot serve as participating agencies.

Stakeholders. They include nongovernmental agencies, private entities, and members of the public.

¹ Native American tribes invited by the study team to be participating agencies that have not responded continue to receive the same information and outreach as participating agencies.

Existing Transportation Network

This section discusses why additional capacity in Pinal County's transportation network is necessary. It provides an overview of regulatory requirements, existing transportation infrastructure, previous transportation studies, existing and future land use, population and employment projections, and existing and projected traffic volumes that—when examined together—support the purpose and need for the proposed action. An understanding of such factors also informs the decision-making process that will be used to identify a preferred alternative. Future conditions in 2040, when the proposed north-to-south transportation corridor would be operational, were evaluated. The purpose and need for the proposed action are based on public and stakeholder input regarding the transportation issues that should be addressed by the Corridor.

The study area's existing transportation network is fragmented and discontinuous, as is often the case in largely undeveloped areas. Figure 2 shows the study area's existing roadway network. Because no primary north-to-south transportation corridor currently exists, a traveler from Apache Junction to Eloy would have to use five different roadways to complete the trip. Existing roadways in the study area that have historically served a rural or arterial function have and will continue to experience increased traffic as land is converted from agriculture or undeveloped desert to residential and commercial uses.

Interstate and U.S. Highways

Primary freeways in or near the study area include I-10, Interstate 8, and US 60 (Figure 2). These freeways are located on the outer edges of the study area and provide connections to secondary roadways, including SR 87, SR 79, SR 287, and Hunt Highway.

I-10 is the primary vehicular corridor between Tucson and Phoenix. Congestion on I-10 in Tucson and Phoenix and between the two cities continues to increase, particularly during peak travel times. ADOT and FHWA are widening I-10 between Casa Grande and Tucson; the work is scheduled for completion in the fall of 2019. They are also widening I-10 through Picacho, including reconstructing the I-10/SR 87 traffic interchange and replacing bridges at the interchange underpass and over the Union Pacific Railroad (UPRR) on SR 87. The recently completed widening of I-10 between Picacho and Marana and the planned widening of I-10 between Interstate 8 and Picacho (anticipated to start construction in 2018) have been designed to alleviate some of the pressure on the existing network.

US 60 is an east-to-west roadway in the northern part of the study area. In the west, it connects with I-10. In the northwestern part of the study area, US 60 connects with SR 202L, and it continues east through Apache Junction where it turns southeast through Gold Canyon and connects with SR 79, which runs along the eastern edge of the study area.

State Highways

State highways carry most of the regional traffic in Pinal County. In the study area, these facilities include SR 24, SR 202L, SR 87, SR 287, and SR 79. Generally, these highways are one lane in each direction in rural areas, with some wider cross sections in urbanized areas such as Coolidge and Florence. SR 24, which extends from SR 202L to Ellsworth Road in far eastern Maricopa County, is an urban freeway with two lanes in each direction. Plans are in place to extend the route 2 miles east into Pinal County.

In the study area, SR 87 runs east-to-west just north of downtown Coolidge. It connects with SR 287 in Coolidge and SR 79 in Florence. SR 287 continues south to Eloy while SR 79 runs north through Florence and connects with US 60 before it turns northwest toward Gold Canyon and Apache Junction.

Regionally Significant Routes

Regionally significant routes were identified in Pinal County's 2006 *Small Area Transportation Study* and were further evaluated in Pinal County's 2008 *Regionally Significant Routes Plan for Safety and Mobility Final Report*. The need for these routes stems from rapid residential and commercial development, increased congestion and associated safety concerns, and limited capacity of the existing Pinal County roadway network, which also lacks continuity and connectivity. The vision for regionally significant routes is to: (1) provide continuity across Pinal County and through urban areas, and (2) connect to adjacent counties and state highways. These routes should provide a high level of safety and service through corridor management and access control. Routes will be planned, programmed, designed, and constructed in consideration of community and environmental values. Many of the primary arterial streets in the study area, which provide access to more densely populated areas, are designated regionally significant routes. Figure 3 shows the Pinal County Regionally Significant Routes network.

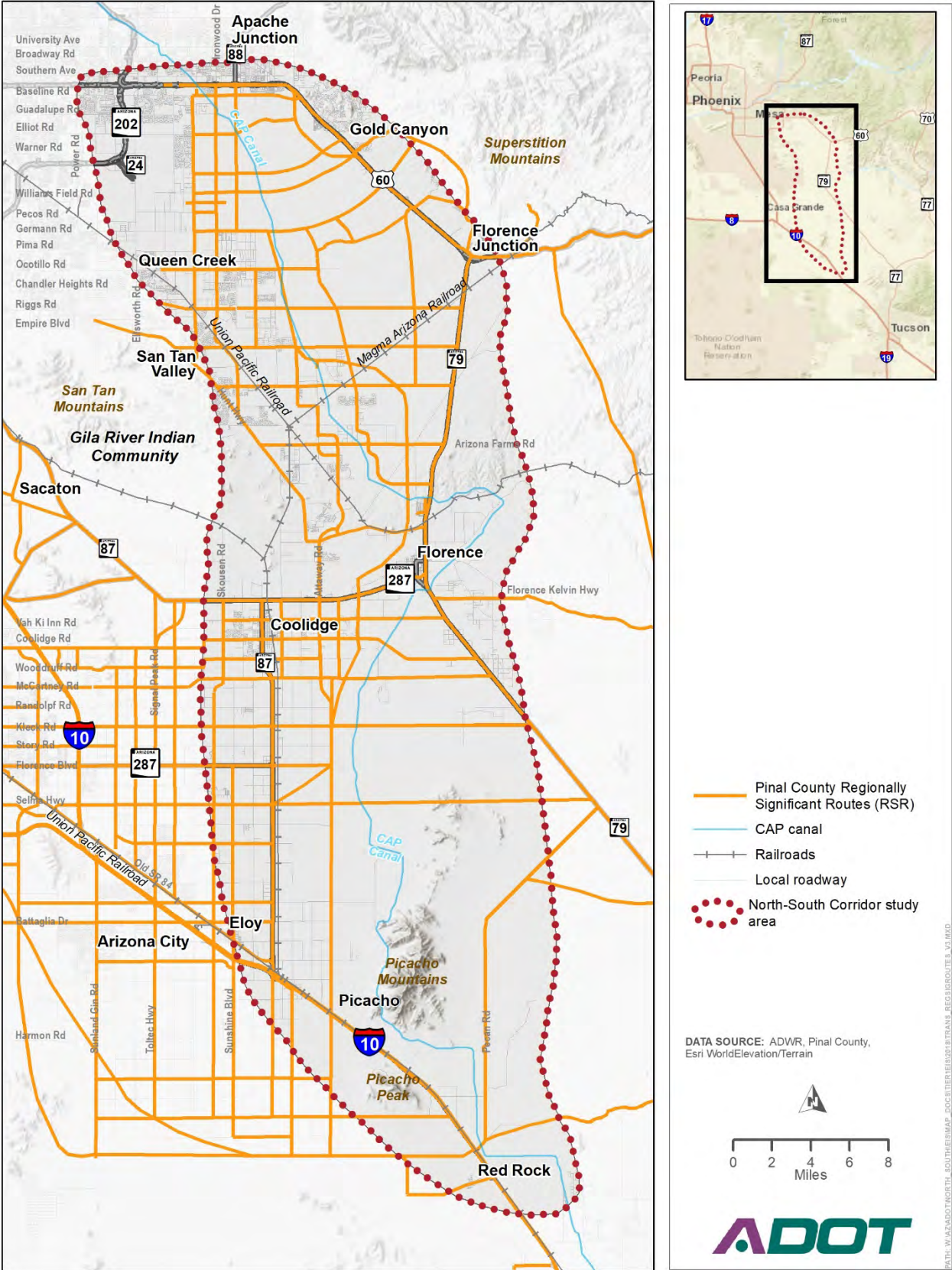
Transit

Public transit service in Pinal County is limited. No countywide services exist, and many of the available services are for the elderly and those with limited mobility. Current public transit options include the Central Arizona Regional Transit bus line that connects Florence, Coolidge, Central Arizona College, and Casa Grande and the Cotton Express Service, a shuttle bus in the Coolidge area. Both of these services are operated by the City of Coolidge Transit Department.

Pinal County's 2011 *Pinal County Transit Feasibility Study* determined that current countywide demand for transit service is low, yet may be feasible in some locations with greater density or transit-dependent populations. The study states that demand for transit service is likely to increase as the county's population and employment base continue to grow.

The ongoing Southeast Valley Transit Study, which was initiated by the Maricopa Association of Governments (MAG), will identify a series of short-term, mid-term, and long-term recommendations to promote a transit system that connects the communities of the Southeast Valley and provides linkages to the existing and planned regional transit network. Participating communities in the study area include Apache Junction, Queen Creek, Florence, and the surrounding unincorporated parts of Pinal County. The NSCS does not include a transit component, and any potential improved public transportation in the study area would be addressed separately.

Figure 3. Planned Regionally Significant Routes in Pinal County



Freight Rail

UPRR has rail lines carrying freight through the study area. In the study area, UPRR is currently double-tracking its transcontinental Sunset Route, which parallels I-10, and a second line that runs north from the Sunset Route along SR 87 into Coolidge, where it turns northwest toward Phoenix. UPRR is working with the Arizona State Land Department (ASLD) and appropriate government entities to construct a new classification rail yard in the southern end of the study area near Picacho Peak State Park (UPRR 2010). UPRR currently interchanges with three railroads on its Phoenix Subdivision: Copper Basin Railway at Magma Junction, the dormant Magma Arizona Railroad at Magma Junction, and BNSF Railway at Phoenix. A continuous north-to-south transportation facility between US 60 and I-10 as proposed would improve truck goods movement through the corridor. Freight rail was not identified as a present need; however, alternatives for consideration should not preclude freight goods movement.

Passenger Rail

Using UPRR rail tracks in the study area, Amtrak provides passenger rail service on its Sunset Limited route, which begins in Orlando, Florida, and ends in Los Angeles, California. Currently, it makes no stops in the study area—the closest stops are in Tucson and Maricopa (Amtrak 2016).

Together with local governments and planning organizations in Maricopa, Pinal, and Pima Counties, ADOT and the Federal Railroad Administration have proposed a passenger rail line between Tucson and Phoenix, with several stops between the two termini. To support the planning effort, a Tier 1 FEIS has been completed (ADOT 2016), and the Federal Railroad Administration signed the Record of Decision (ROD) in 2016. One of the routing options for the passenger rail selected route is concurrent with the North-South Corridor through much of the study area, between I-10 and the Magma Arizona Railroad. Figure 4 shows the relationship of the two passenger rail alternative routing options approved in the ROD. The rail passenger demand, primarily intercity travel to and from Phoenix or Tucson, would be accommodated with the proposed passenger rail service, and a north-to-south transportation facility proposed in the NSCS would not preclude any future expansion if necessary.

Figure 4. Passenger rail alternatives selected in the Record of Decision for the *Arizona Passenger Rail Corridor Study Tier 1 Final Environmental Impact Statement (2016)*



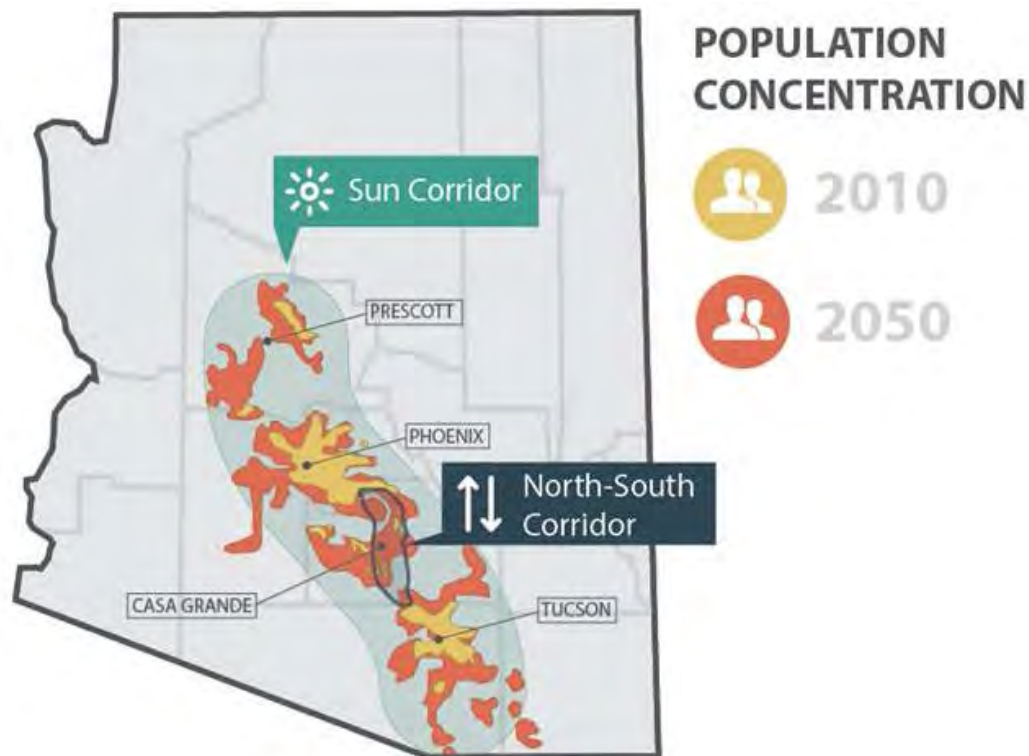
Source: From Arizona Department of Transportation (2016)

Project Background

Regional Growth

The Sun Corridor region, which is home to Phoenix, Tucson, and Pinal County, is one of the 11 megapolitan areas in the United States that demographers have identified as the focus of most of the country's future growth. The region is expected to extend from the Mexican border to beyond Prescott by 2040 (Morrison Institute for Public Policy 2008). Figure 5 illustrates the Sun Corridor and the areas of projected population growth by 2050.

Figure 5. Sun Corridor population growth areas



Source: Morrison Institute for Public Policy (2008); map adapted from Maricopa Association of Governments

According to the Lincoln Institute of Land Policy, a megapolitan area is identified according to 10 criteria (Lang and Dhavale 2005):

- combines at least two existing metropolitan areas, but may include dozens of them
- totals more than 10 million projected residents by 2040
- derives from contiguous metropolitan and micropolitan areas
- constitutes an organic cultural region with a distinct history and identity
- occupies a roughly similar physical environment
- links large centers through major transportation infrastructure
- forms a functional urban network via goods and service flows
- creates a usable geography that is suitable for large-scale regional planning
- lies within the United States
- consists of counties as the most basic unit

Although somewhat slowed since the economic downturn in the late 2000s, residential and commercial development in and around the Phoenix metropolitan area has been substantial since the 1970s. Initial post-World War II growth was to the northeast, with secondary and more recent growth concentrated in the southwestern and southeastern parts of Maricopa County. Much of the area is at or approaching full development build-out.

In Tucson, development in the 1970s began to move northwest from the central core, in part because federal lands and other geographic features restricted development. The city's future development is expected to be primarily concentrated along the I-10 and Interstate 19 corridors. As these metropolitan areas continue to grow, previously undeveloped lands between the two in Pinal County will experience increased development demand and will likely be converted to support residential and commercial growth. This pressure can be seen in various locations throughout Pinal County, particularly those areas close to US 60, such as Apache Junction, and unincorporated areas such as Gold Canyon and San Tan Valley.

As the population and employment bases continue to grow and previously undeveloped lands are converted, additional roadway capacity will be necessary to support projected travel demand and to improve connectivity and accessibility in areas without existing major corridors. Specifically, as related to the study area, transportation improvements would improve travel times in the region, improve the efficiency of existing freeway and arterial street networks, create a more direct connection to the eastern portion of the Phoenix metropolitan area, help relieve traffic congestion on I-10, and perform functions and provide services identified in local, regional, and statewide plans.

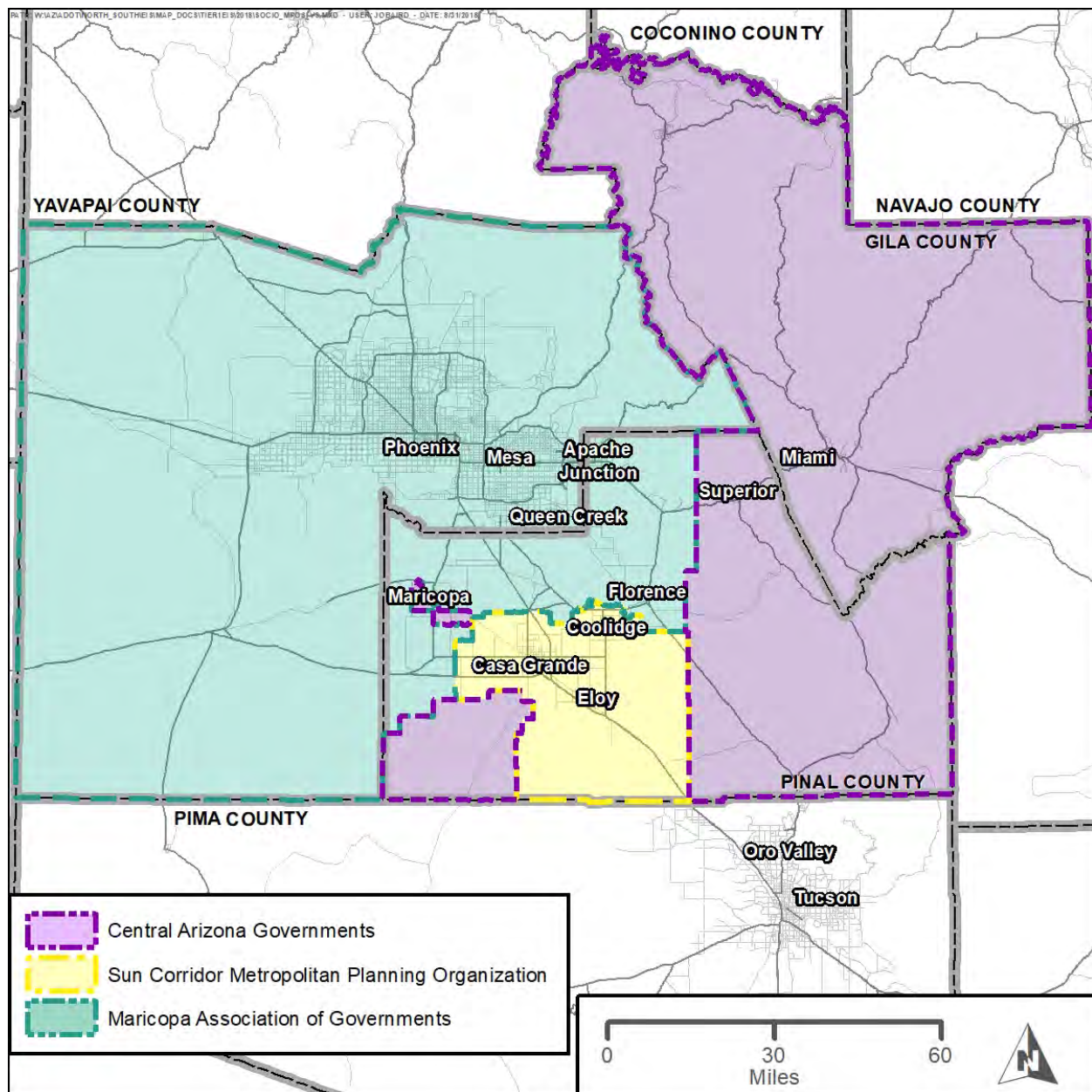
Transportation Planning in the North-South Corridor

Federal regulations state that metropolitan planning organizations (MPOs) are responsible for, among other objectives, responding to anticipated commercial and residential growth by providing for the development of accessible, integrated, connected, intermodal transportation networks for people and freight to support the metropolitan area's economic vitality (49 USC §§ 5303–5306). A lag in implementing needed transportation facilities typically results in traffic congestion, which in turn reduces the efficiency of the transportation infrastructure and increases travel time, air pollution, and fuel consumption.

State legislation requires that ADOT develop a long-range statewide transportation plan. Consistency with local planning is emphasized, including the requirement that ADOT's long-range planning employ local and regional land use plans, facilitate—not direct—growth, and coordinate with regional planning efforts. It also requires local and regional agencies to submit a standardized report of their transportation needs to ADOT each year.

Transportation coordination and planning in the study area is divided between two MPOs: MAG and the Sun Corridor Metropolitan Planning Organization (SCMPO). After the 2010 census, when Casa Grande's population reached 50,000, SCMPO was formed to provide transportation planning services to the communities of Casa Grande, Coolidge, and Eloy and rural portions of Pinal County. Coordination activities include developing a 5-year Transportation Improvement Program, monitoring local project development, providing input to the State Transportation Improvement Program, identifying transportation enhancement projects, completing federal reporting, and coordinating various transit programs. Figure 6 shows the boundaries of MPOs in and near the study area.

Figure 6. Metropolitan planning organization boundaries



MAG is the designated MPO and regional air quality planning agency for all jurisdictions in Maricopa County, including the Phoenix urbanized area and the contiguous urbanized area in Pinal County, including Florence and Maricopa. In addition, through Executive Order 2011-04 from the governor, MAG develops population estimates and projections for the region.

Previous Transportation Studies in the Study Area

Transportation studies prepared by or for ADOT, MAG, Central Arizona Governments (CAG), SCMPO, and other local government agencies provide a baseline for evaluating a possible solution for meeting future transportation needs in the study area. Previous studies provide valuable information about current conditions, existing and anticipated system deficiencies, projected growth and development patterns, and municipal and stakeholder objectives. These studies have helped identify short-term and long-term

improvements to enhance mobility, access, and safety in the study area. The preparation of these materials has helped foster partnerships and coordination efforts between and among the varying agencies that will facilitate the comprehensive planning efforts necessary to improve transportation mobility in the study area. These plans are summarized below.

Southeast Maricopa and Northern Pinal County Area Transportation Study. This study, which was initiated by ADOT, CAG, and MAG in 2001 and completed in 2003, was the first formal attempt to (1) evaluate transportation between Maricopa and Pinal Counties, (2) examine long-range transportation needs in the study area, and (3) identify projects to address these needs. Findings from the study indicate that \$12 billion to \$14 billion in transportation infrastructure investment is necessary to meet the growing demand in the area bounded by US 60 and SR 79 to the east, SR 202L and the Gila River Indian Community to the west, US 60 to the north, and Coolidge and Florence to the south. Recommendations include approximately 3,000 lane miles of new and improved arterial streets, an enhanced transit system, improvements to existing freeway corridors, and 95 miles of new freeway.

The study recommended four corridors to enhance mobility in the area of analysis. One of these corridors, the Apache Junction and Coolidge Corridor, would provide a new north-to-south transportation corridor in Pinal County. It would connect US 60 in the north with I-10 in the south, generally follow SR 87 south of Coolidge, and then continue north for 36 miles where it would connect with US 60 near Apache Junction. If built as a freeway, the corridor was anticipated to carry between 46,000 and 110,000 vehicles per day in 2030 and cost \$1.6 billion to construct. The Apache Junction and Coolidge Corridor was later renamed the North-South Corridor Extension (ADOT 2008a).

Pinal County Corridors Definition Study. In 2004, House Bill 2456 designated ADOT, CAG, and MAG as the responsible parties for further definition of the four corridors identified in the *Southeast Maricopa and Northern Pinal County Area Transportation Study* for the purpose of right-of-way (ROW) preservation. The bill required a joint study to be initiated before the end of 2004 to provide information to the State Transportation Board for adoption into the State Highway System by the end of 2008. The State Transportation Board directed ADOT to develop studies to examine the need for each of the four proposed corridors identified in the above-mentioned study, their ability to accommodate anticipated growth, and performance impacts of each corridor on other regional and state roads. Subsequently, ADOT initiated the *Pinal County Corridors Definition Study* in 2004.

The final report provided details for the future development of roadway alignments and corridor design concepts and identified required environmental studies. In 2006, recommendations set forth in the report, which included a north-to-south transportation corridor, were adopted by the State Transportation Board into MoveAZ, the then-current statewide long-range transportation plan. While no funding was identified for the purchase of ROW or construction of a north-to-south transportation corridor, inclusion in MoveAZ allowed for the funding of studies that would identify potential alignments of a north-to-south transportation corridor.

Regional Framework Studies. The *Southern Pinal and Northern Pima Corridors Definition Study*, completed in 2008, sought to determine the need for and feasibility of high-capacity corridors in southern Pinal County and northern Pima County as well as the potential of extending a major transportation corridor in the study area south of Florence. This study was replaced with the Statewide Transportation Planning Framework Program (Framework Program) effort, initiated in 2008.

The Framework Program's main goal was to plan a seamless transportation system that would efficiently move the state's rapidly growing population and ensure economic competitiveness. The study team examined transportation needs in Arizona through 2050 with no cost constraints and conducted extensive outreach efforts. The resultant document, the *Statewide Transportation Planning Framework Final Report* (ADOT 2010a), provides a long-term vision for transportation in Arizona. Accepted in 2010, the vision serves as the basis for upcoming transportation planning efforts that assign funding to prioritized projects.

Four studies were prepared as part of this effort. Tasks associated with the Central Arizona Regional Framework Study included projecting travel demand, reviewing land use plans and other applicable materials, and evaluating other factors that would inform recommendations for the area. The study identified the need for a major north-to-south transportation corridor in the study area.

Coolidge-Florence Regional Transportation Plan. A collaborative effort by ADOT, the City of Coolidge, and Town of Florence, this plan developed a regional multimodal transportation system plan for the Coolidge and Florence planning areas. Based on anticipated growth in 2008, traffic projections with and without a north-to-south transportation corridor in 2025 were modeled. Recommendations set forth in the plan identified continued, coordinated efforts regarding a design concept study for a north-to-south transportation corridor (ADOT, City of Coolidge, and Town of Florence 2008).

Queen Creek Small Area Transportation Study. This 2008 study sought to identify long-term transportation planning issues for Queen Creek. While the study primarily focused on areas within the Queen Creek municipal limits, it identified a north-to-south transportation corridor in the study area and the need for coordinating future road systems to promote connectivity between and among communities (Town of Queen Creek 2008a, updated 2018).

US 60 Alignment Study: Superstition Freeway to Florence Junction Study. Completed in 2011, this study advanced the recommendations set forth in ADOT's *US 60 Corridor Definition Study* through the evaluation of improvements to US 60 between mileposts 199 and 211 (ADOT 2010b). Residential development has been significant in this area in recent years and is anticipated to increase in the future with the anticipated implementation of the Lost Dutchman Heights (formerly Portalis) and Superstition Vistas developments. In 2011, the US 60 project received environmental clearance with a finding of no significant impact (ADOT 2011).

Apache Junction Comprehensive Transportation Study. A joint effort between the City of Apache Junction and ADOT, this study sought to develop a long-range multimodal transportation plan to address the city's most critical current and future transportation needs. The study (1) evaluated growing demands placed on the city's local roads and streets, the Lost Dutchman Heights (formerly Portalis) area, and the larger region, and (2) considered public transportation, bicycle, and pedestrian needs, and additional multimodal opportunities necessary to accommodate growth and development. The study identified a series of short-range, mid-range, and long-range improvements to the transportation network as well as the potential realignment of US 60 and a north-to-south transportation corridor (ADOT 2012).

Regional Transportation Plans. The MPOs in the region have identified the need for a north-to-south transportation corridor through Pinal County. MAG's 2035 *Regional Transportation Plan* identifies ROW protection for the North-South Freeway Corridor (including SR 24) in the Pinal County area of the MAG metropolitan planning area as a currently unfunded project.

The *CAG Regional Transportation Plan* (2015) recognizes the need for a north-to-south facility with a connection to SR 24 that would provide a critical alternative for travel between I-10 and the Phoenix metropolitan area. The plan also notes that a freeway facility would foster economic development and support the growing communities of Florence, Coolidge, and Eloy as well as northern Pinal County. The plan does not identify funding for the north-to-south facility.

Need for the Proposed Action

Under 49 USC §§ 5303–5306 and other federal legislation, it is the intent of the United States Congress that metropolitan and statewide transportation planning be the foundation for highway and transit project decisions. Based on the findings of a number of local and regional studies, including the *Southeast Maricopa/Northern Pinal County Area Transportation Study Final Report* (ADOT, CAG, and MAG 2003) and *Pinal County Corridors Definition Study Final Report* (ADOT 2007), a north-to-south transportation corridor was included in the 2004 statewide long-range transportation plan (MoveAZ). The need for a north-to-south transportation corridor was confirmed in the *Central Arizona Regional Framework Study* (ADOT 2009) as part of the Framework Program.

Summary of Needs

Adding north-to-south transportation capacity in the study area would facilitate the connection between US 60 and I-10. The current connection is a fragmented assortment of rural roads with missing linkages throughout. While this fragmentation of north-to-south routes does not cause substantial congestion now, anticipated future land use patterns coupled with population and employment projections indicate that the urbanized areas of Phoenix and Tucson could develop into a megapolitan area with over 8 million people by 2050 (Arizona Department of Administration 2015). As a result of the lack of continuous north-to-south roadway connections in the study area and the anticipated growth and travel demand that will accompany growth, the following study area characteristics and transportation deficiencies drive the need for a continuous north-to-south transportation facility between US 60 and I-10:

Insufficient infrastructure to accommodate projected population and employment growth and to support local, regional, and statewide planning efforts. As shown in Table 2, population in Pinal County is expected to nearly double (an increase of 97 percent), and employment is expected to increase by a factor of 2.8 (an increase of 178 percent) by 2040. Local governments and CAG anticipate stress on the local transportation network’s capacity, and local land use and transportation plans all call for a major north-to-south transportation facility in the study area to accommodate anticipated growth. An improved and expanded north-to-south transportation system is needed to provide the transportation infrastructure shown in statewide, regional, and local planning documents. Figure 7 depicts the West Pinal Growth Area within the study area, encompassing Coolidge and Casa Grande, as identified in the *Pinal County Comprehensive Plan*.

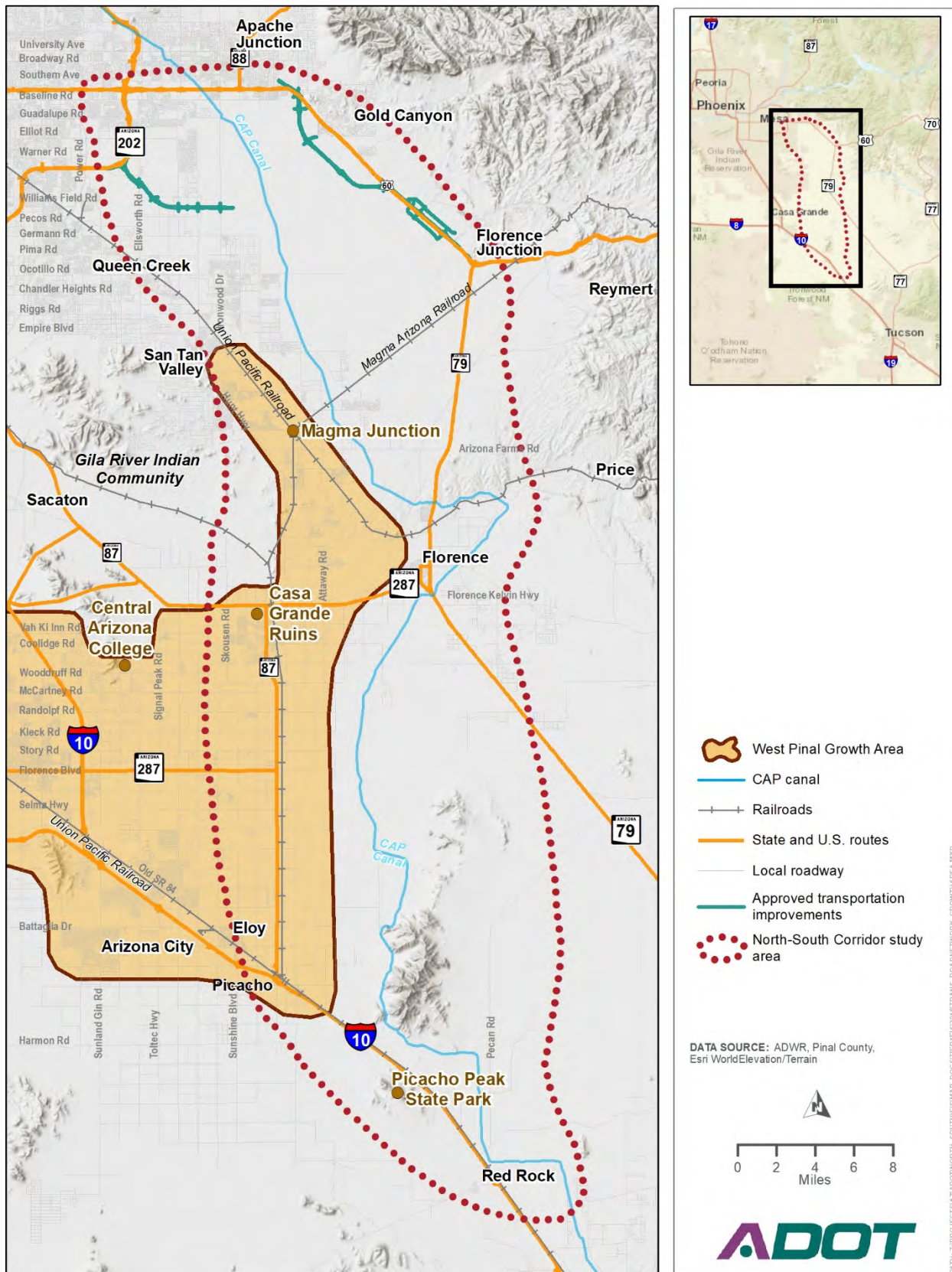
Table 2. Population and employment in Maricopa, Pinal, and Pima Counties, 2015–2040

Geographical area ^a	2015	2040	Percentage change
Population			
Maricopa County	4,076,438	6,031,000	47.9
Pinal County	406,468	800,700	97.0
Pima County	1,009,371	1,276,700	26.5
Employment			
Maricopa County	1,923,012	2,863,967	48.9
Pinal County	68,364	189,682	177.5
Pima County	465,594	495,569	6.4

Sources: Arizona Department of Administration (2015), Arizona Department of Transportation (2018)

^a includes all of Maricopa, Pinal, and Pima Counties

Figure 7. Pinal County Comprehensive Plan growth area within study area

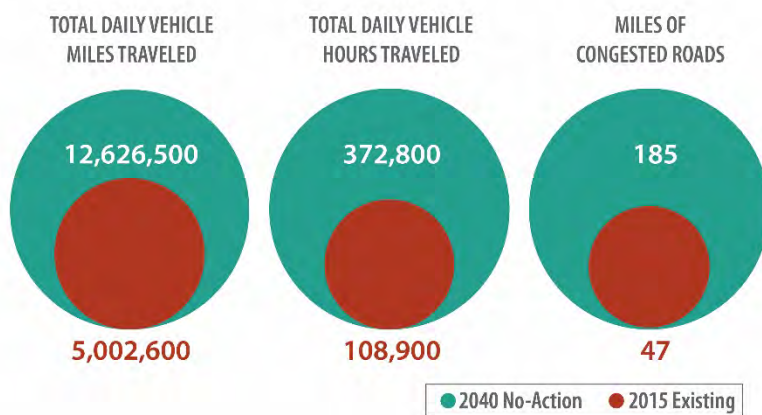


Source: Pinal County (2015)

Inadequate roadway capacity to meet future demand. Population and employment growth in Maricopa, Pima, and Pinal Counties will place additional demand on the existing fragmented and discontinuous transportation network in Pinal County and will result in a lack of adequate, continuous, north-to-south transportation capacity in southeastern Maricopa County and Pinal County. Lack of capacity will translate into congestion and increased travel times, which would only worsen with continued growth, contributing to long user delays. In the study area, the existing roadway network cannot meet future demand and capacity challenges of high-volume, long-distance through trips for moving both people and freight.

Figure 8 illustrates the projected increase in vehicle miles traveled and vehicle hours traveled in the study area by 2040. An integrated, multimodal transportation system requires additional unfragmented, north-to-south capacity in the study area to accommodate these future needs. Without additional capacity, delays and congestion would hamper the efficiency of existing and planned roadway networks.

Figure 8. Existing and 2040 traffic projections



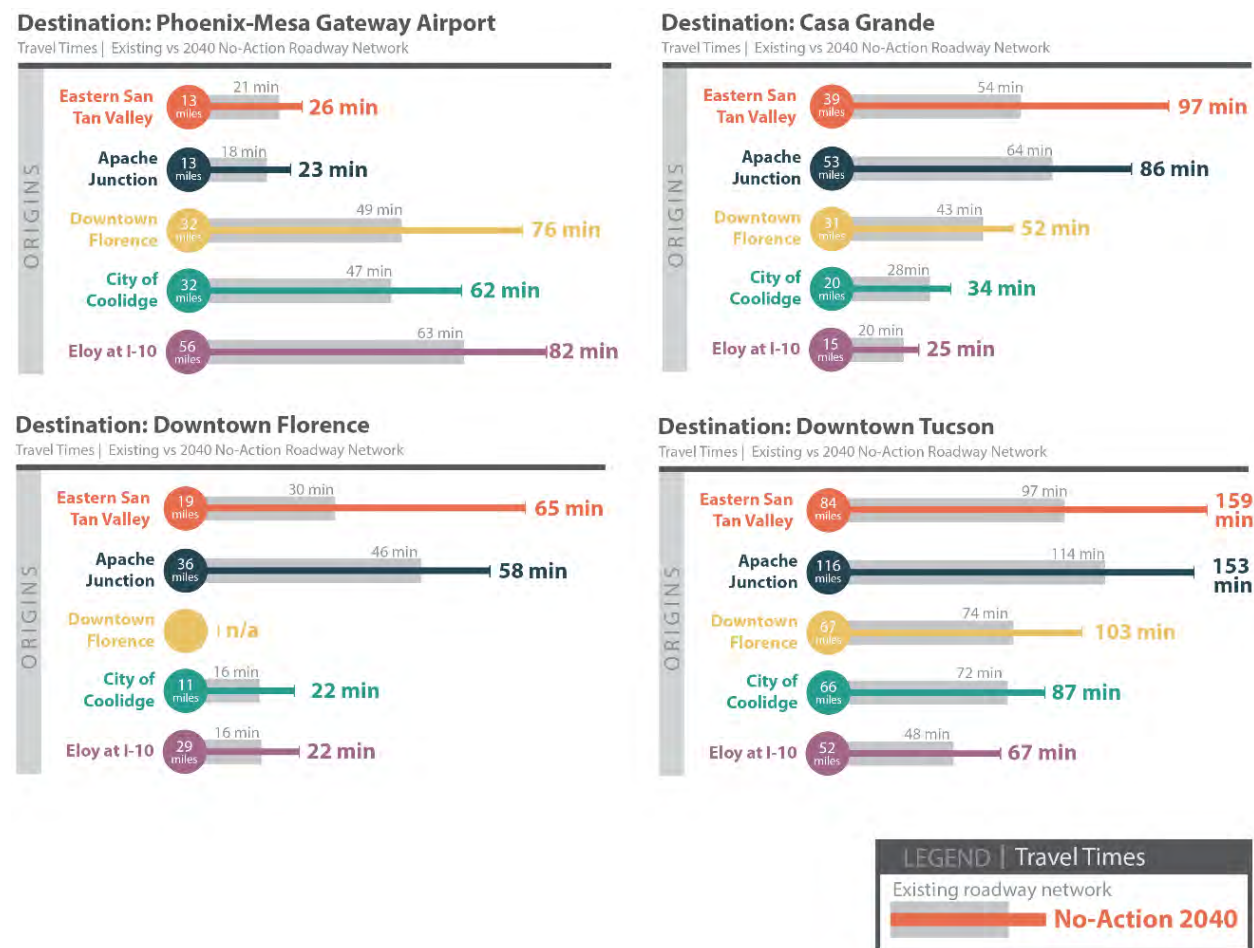
Source: second-generation Arizona statewide travel demand model (AZTDM2), 2016, existing and 2040 No-Action model information

Lack of transportation system connectivity and need to enhance system linkages. A continuous north-to-south transportation corridor would provide a critical missing link in the southeastern Maricopa County and Pinal County transportation system. Currently, travelers heading north from the Tucson area on westbound I-10 who wish to reach areas east of central Phoenix while continuing to travel on a high-capacity roadway must go through central Phoenix to access SR 202L or through southern Phoenix to access US 60. SR 79 provides access along the eastern edge of the study area north of Florence. South of Florence, SR 79 travels southeast toward Oracle Junction, where it ends at its junction with SR 77, approximately 25 miles north of Tucson. SR 79 is not a high-capacity route, and operates as a local route through Florence with numerous access points and businesses along the route.

Travel times in 2040 from select origins in the study area to select destinations in the region are shown in Figure 9. A continuous north-to-south facility would help integrate the study area's surface transportation network. System continuity and connectivity would be critical in improving the effectiveness of individual network segments, the use of transit, and congestion management strategies (such as operational improvements addressing intersection upgrades, access management, traffic signal improvements, and Intelligent Transportation Systems—the use of technology to improve traffic flow). Providing direct system linkage within the existing fragmented system would reduce costs associated with hundreds of thousands of trips that would take place over future years and decades.

Providing connectivity and more direct trips in the study area would reduce vehicle hours traveled, which would, in turn, reduce energy use and costs. A continuous north-to-south corridor could potentially reduce energy consumption by as much as 6 million gallons per year in the region. Moreover, according to USDOT, in 2016 the national average value of travel time savings for auto drivers and truck drivers was \$13.60 and \$27.20 per hour, respectively; therefore, substantial reductions in travel time can result in substantial savings for the average driver.

Figure 9. Select existing and 2040 No-Action travel times



Source: second-generation Arizona statewide travel demand model (AZTDM2), 2017, 2040 No-Action model information

Limited alternatives to avoid congestion on I-10. I-10 provides the primary connection between Phoenix and Tucson. Today, portions of I-10 in the study area and across the larger region regularly experience highly congested travel. There are no alternative routes through this area of Pinal County that provide a direct route. Traffic diverted from I-10 because of congestion or closure must mix with local traffic on rural state highways through the area, contributing to local traffic. By 2040, the study area will have 185 miles of congested roadways (Figure 8). Without unfragmented, north-to-south transportation alternatives to I-10, congestion is anticipated to worsen with the study area's projected growth. It is anticipated that during the peak evening travel period, I-10 would operate at a failing level of service (LOS) by 2040. A continuous north-to-south transportation corridor connecting southeastern Maricopa County—by way of US 60, SR 202L, and SR 24—with I-10 would provide the necessary congestion relief to enhance mobility on I-10.

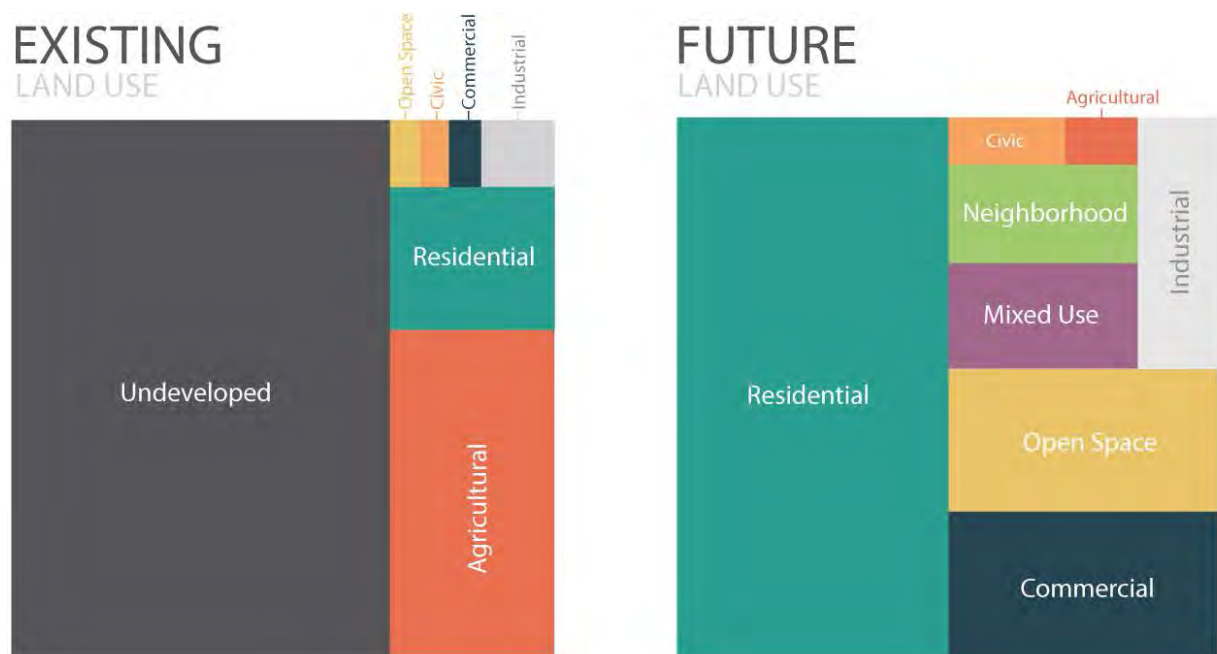
Existing and Projected Land Use

Pinal County historically has been a relatively agricultural and undeveloped landscape. Substantial population and employment growth across the Phoenix and Tucson metropolitan areas has resulted in the conversion of previously undeveloped lands and increased development pressure in Pinal County. While notable development has occurred in concentrated areas in the study area in recent years, much of the area remains agricultural and undeveloped.

The study area is a mix of incorporated municipal and unincorporated county and ASLD lands. Each incorporated municipality has an identified municipal planning area (MPA), which represents the respective municipality's area of planning concern and is based on the anticipated future incorporated boundaries of that municipality. The incorporation of these lands, and subsequent development, depends on annexation from the county or ASLD.

Figure 10 illustrates the existing and anticipated future land use distribution in the study area. Under existing conditions, nearly 70 percent of this land is undeveloped and another 19 percent is classified as agricultural. Less than 10 percent of land is residential, and smaller amounts are industrial, commercial, or open space.

Figure 10. Existing and future land use distribution in the study area



Source: compilation of data from municipal entities and remote sensing, 2017

Note: Undeveloped land is vacant land, much of which is privately owned (or State Trust land), and as such it is subject to future development. The future land use reflects the jurisdictions' adopted general plans and ratio of build-out land uses they envision. Open space referenced here is land that jurisdictions have identified in their adopted plans as "Open Space."

According to municipal and county land use plans, which each have varying horizon years, nearly 500,000 acres classified as agricultural or undeveloped today would be converted to residential and commercial development at full build-out development (no estimate is available for when full build-out will occur). According to these plans, future land use would be 50 percent residential and mixed use. Neighborhood land uses, which are a combination of residential and commercial with varying densities, would represent 13 percent of total study area lands.

Commercial land use is anticipated to increase to 14 percent, from less than 1 percent in existing conditions. Much of this commercial development would be concentrated in the northern part of the study area just south of Apache Junction, in and around the Phoenix-Mesa Gateway Airport, and in Coolidge where a new regional shopping mall is planned. Open space areas would increase from under 1 percent to 13 percent. Most of the open space lands would be concentrated in the eastern and southern parts of the study area. Agricultural lands would decrease from approximately 20 percent under existing conditions to less than 1 percent.

Population and Employment Growth

Population and employment in the study area are expected to grow substantially by 2040. Existing and projected population and employment in Pinal, Pima, and Maricopa Counties (including those areas outside the study area) are presented in Table 3.

Development in the Sun Corridor and the availability of developable land in Pinal County are placing development pressure on the region as the Phoenix and Tucson metropolitan areas continue to reach full build-out development. Pinal County is experiencing increased pressure to convert previously undeveloped lands to support additional growth. As shown in Table 2, the population in Pinal County is projected to increase by approximately 97 percent by 2040, whereas the more developed Pima and Maricopa Counties are projected to increase by approximately 48 and 27 percent, respectively.

Pinal County is projected to experience substantial employment growth by 2040 (178 percent increase). Both Maricopa and Pima Counties are projected to increase their employment base as well, but at a notably slower rate than Pinal County. Employment in Maricopa County is projected to increase approximately 49 percent by 2040, whereas Pima County's employment base would increase by 6 percent.

For the study area, existing population and employment numbers are available only from the current MPO projection series that reports figures in 10-year increments beginning in 2010. Population in the study area is projected to increase by 118 percent by 2040 (Table 3). Much of this growth will occur outside existing incorporated municipal limits but within identified MPAs. In their general plans, study area municipalities have identified how and to what extent land would be converted to support new residential development. In addition, these municipalities anticipate that a north-to-south transportation corridor would support this growth.

Table 3. Study area population and employment, 2015–2040

Demographic	2015	2040	Percentage change
Population	275,657	601,053	118
Employment	36,416	162,685	347

Source: 2015 and 2040 population and employment estimates and projections from the second-generation Arizona statewide travel demand model (AZTDM2)

In their general plans, study area municipalities have identified one or more commercial cores where they envision commercial and other business activities. In and around residential areas, commercial areas would be dedicated to providing retail, dining, and entertainment as well as low-density office space. However, high-density employment growth areas would be concentrated in areas away from residential development. Many study area municipalities have identified such areas in their general plans as well as the sectors in which this growth is anticipated.

Given the large amount of land available for development, study area municipalities have the ability to implement measures to incentivize businesses, particularly those that meet the objectives of identified employment growth areas, to locate within their boundaries.

As shown in Table 3, employment growth in the study area is anticipated to be substantial—nearly a 350 percent increase by 2040. This would take the form of over 125,000 new jobs. Queen Creek, in Maricopa County, is projected to experience the most job growth. Much of this would be concentrated close to the Phoenix-Mesa Gateway Airport, where businesses would benefit from this proximity. This would also be true in Mesa.

In Pinal County, job growth is expected to occur in Apache Junction, Florence, Coolidge, and Eloy in the study area, and in Casa Grande just west of the study area (Figure 11). Eloy, the southernmost municipality in the study area, would benefit from its location adjacent to I-10 and proximity to areas between Tucson and Phoenix. In Apache Junction, employment growth would be concentrated along US 60 and in planned areas such as Superstition Vistas. Florence would continue to develop its current employment base (military and government) and introduce new business sectors.

With the growth in population and employment, community facilities, medical facilities, shopping centers, and other community resources would experience more activity. Access to activity centers in and near Apache Junction, Florence, Coolidge, Eloy, and master-planned communities would become crucial to the viability of the growing communities.

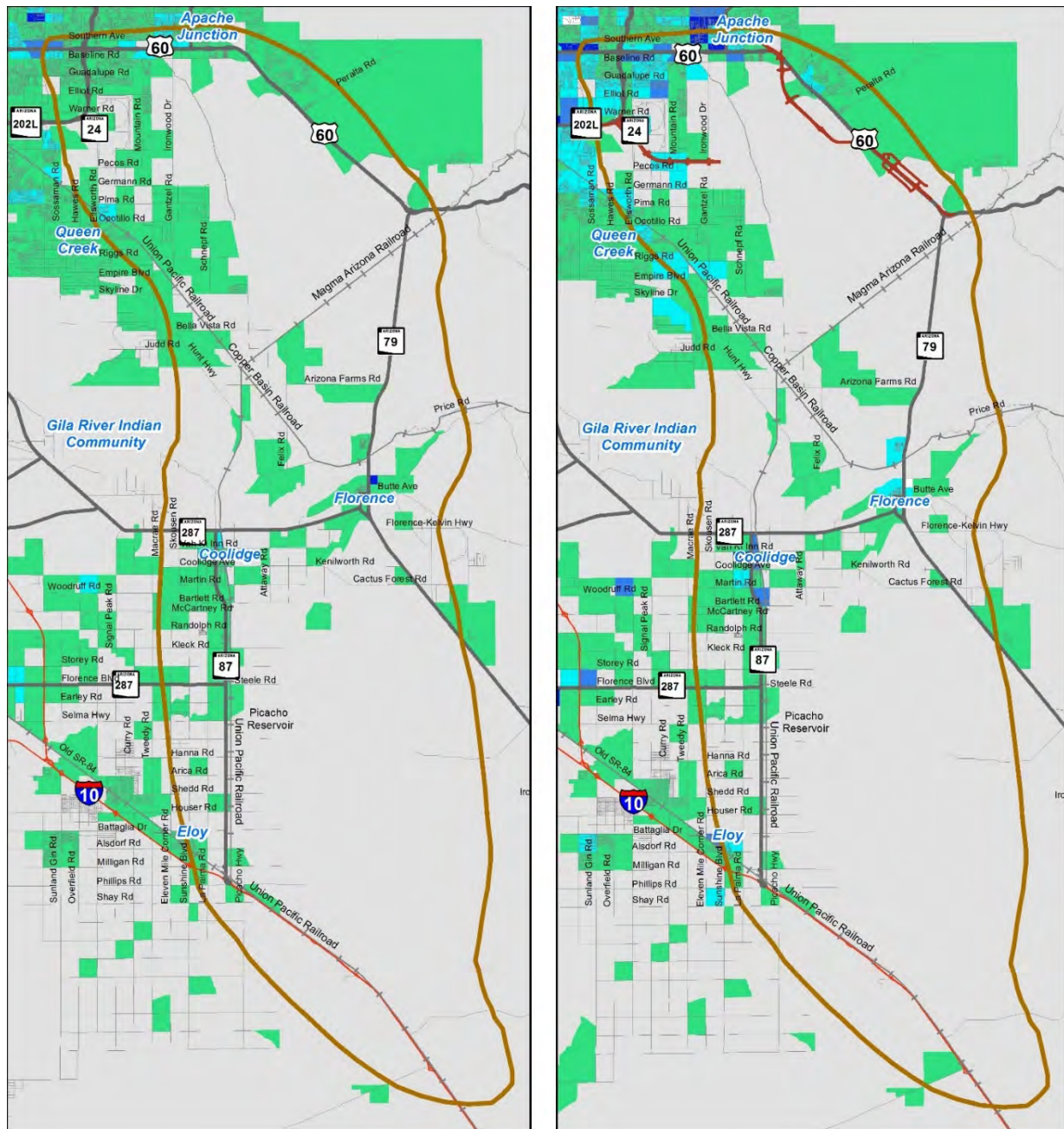
Existing and Forecast Travel Demand

Travel purposes can include work, personal, movement of goods, and delivery of services; travel modes include cars, trucks, transit, bicycles, and walking. Taken in its entirety, the amount of travel occurring in a region is referred to as transportation demand. To meet individual travel needs with any chosen mode or modes, a region must have an adequate transportation network. The extent of transportation infrastructure that can accommodate travel demand is referred to as capacity.

Traffic operational characteristics are typically described in terms of LOS. LOS is measured on a scale ranging from A to F, with A representing the best performance and F indicating the worst. As described in the Transportation Research Board's *Highway Capacity Manual* (2010), LOS A corresponds to minimal delay at signalized intersections and free-flow conditions on highways. LOS F means long delays at signalized intersections and congested stop-and-go conditions on highways. Traffic flow conditions for each LOS are presented in Figure 12.

A transportation network is designed to accommodate the expected transportation demand, that is, a certain volume of travel, at an acceptable LOS. Once that volume is exceeded, the network begins to operate inefficiently. When capacity deficiency occurs or is projected to occur, improvements that would be necessary to address these deficiencies are typically identified in the jurisdiction's long-range transportation plan. Pinal County identifies LOS C or better as acceptable.

Figure 11. Employment growth projections for Pinal County, 2010 to 2040

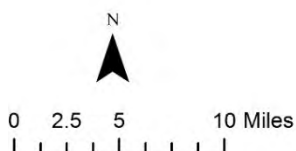


2015 Employment

2040 Employment







Legend

- +— Railroads
 - Interstate Highway
 - U.S. / State Highways and Freeways
 - Local Roadway
 - North-South Corridor Study Area
 - SR 24 and US 60 Approved Alignment
- Employment per Sq. Mile**
- 0
 - 1 - 999
 - 1,000 - 2,999
 - 3,000 - 5,999
 - > 5,999



Source: second-generation Arizona statewide travel demand model (AZTDM2), 2017

Figure 12. Level of service flow conditions

Level of Service	Flow Conditions	Technical Descriptions
LOS A		Free flow conditions with minimal delays. minimum congestion
LOS B		Stable flow conditions with occasional delays. minimum congestion
LOS C		Stable flow conditions with periodic delays. low congestion
LOS D		Restricted flow conditions with regular delays due to moderate congestion. moderate congestion
LOS E		Constrained flow conditions with extended delays due to high congestion. high congestion
LOS F		Forced flow conditions with excessive delays due to excessive congestion. very high congestion

Source: Transportation Research Board (2010)

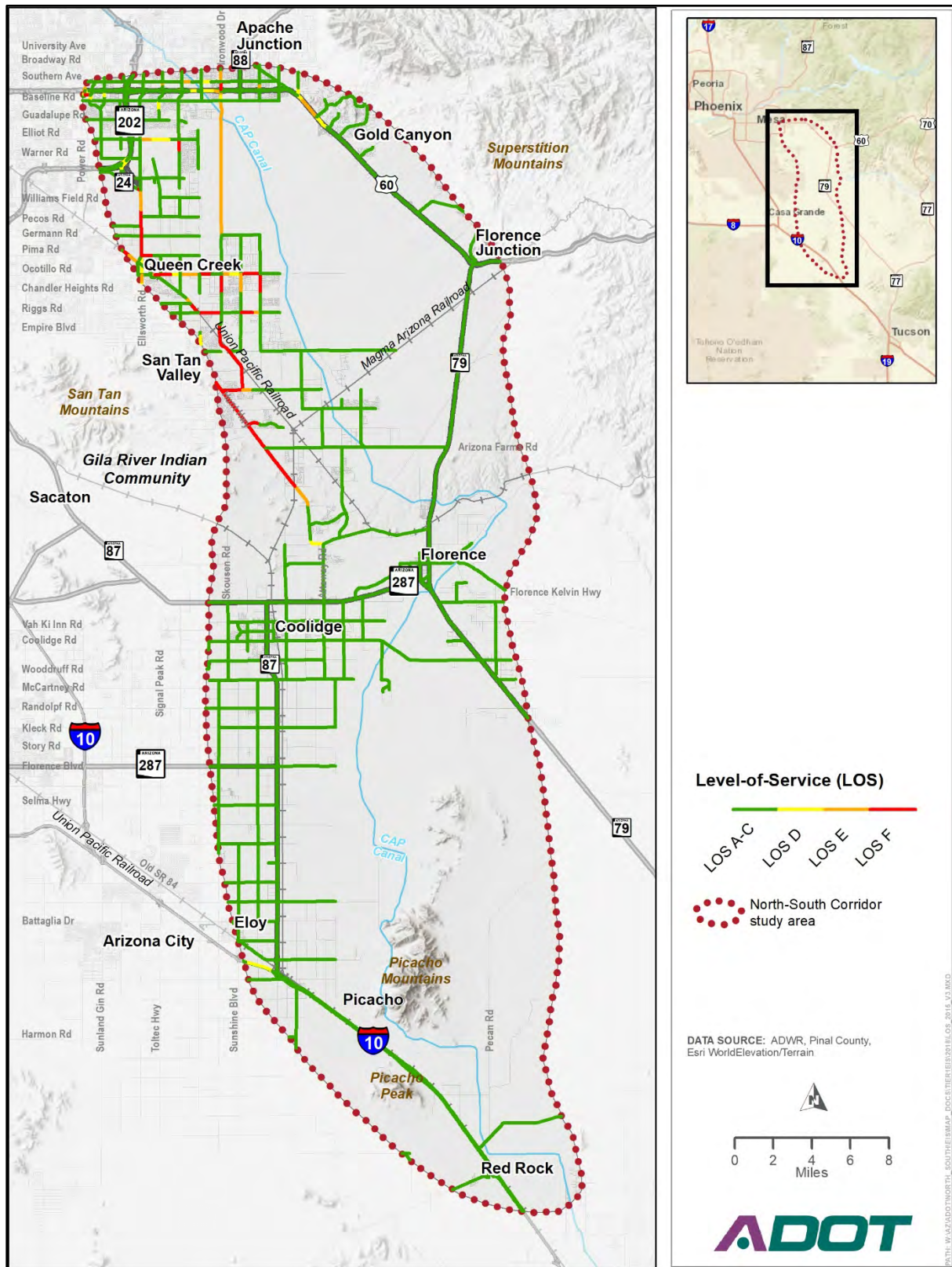
The second-generation Arizona statewide travel demand model (AZTDM2), developed based on existing and projected population and employment numbers provided by area MPOs, National Household Travel Survey data for Arizona, and enhanced truck and long-distance travel models, uses a 2040 horizon to determine travel patterns in the state. The model includes scenarios with and without the operation of a north-to-south transportation corridor by 2040. In the No-Action condition, the north-to-south transportation corridor is not in place; however, the model assumes that the following improvements to key corridors would be made irrespective of implementation of a north-to-south transportation corridor:

- SR 287 – widened to four lanes continuously, from SR 79 to western study area boundary
- Hunt Highway – widened to six lanes continuously, from SR 79 to western study area boundary
- I-10 – widened to six lanes throughout study area limits
- US 60 – widened to eight lanes west of Ironwood Drive and to six lanes east of Ironwood Drive

Capacity and LOS are two related terms. Capacity analysis tries to give a clear understanding of how much traffic a given transportation facility can accommodate; LOS tries to answer how well a given facility is managing the traffic situation. Capacity and LOS vary with a number of factors, including the type of facility, prevailing traffic, road conditions, etc.

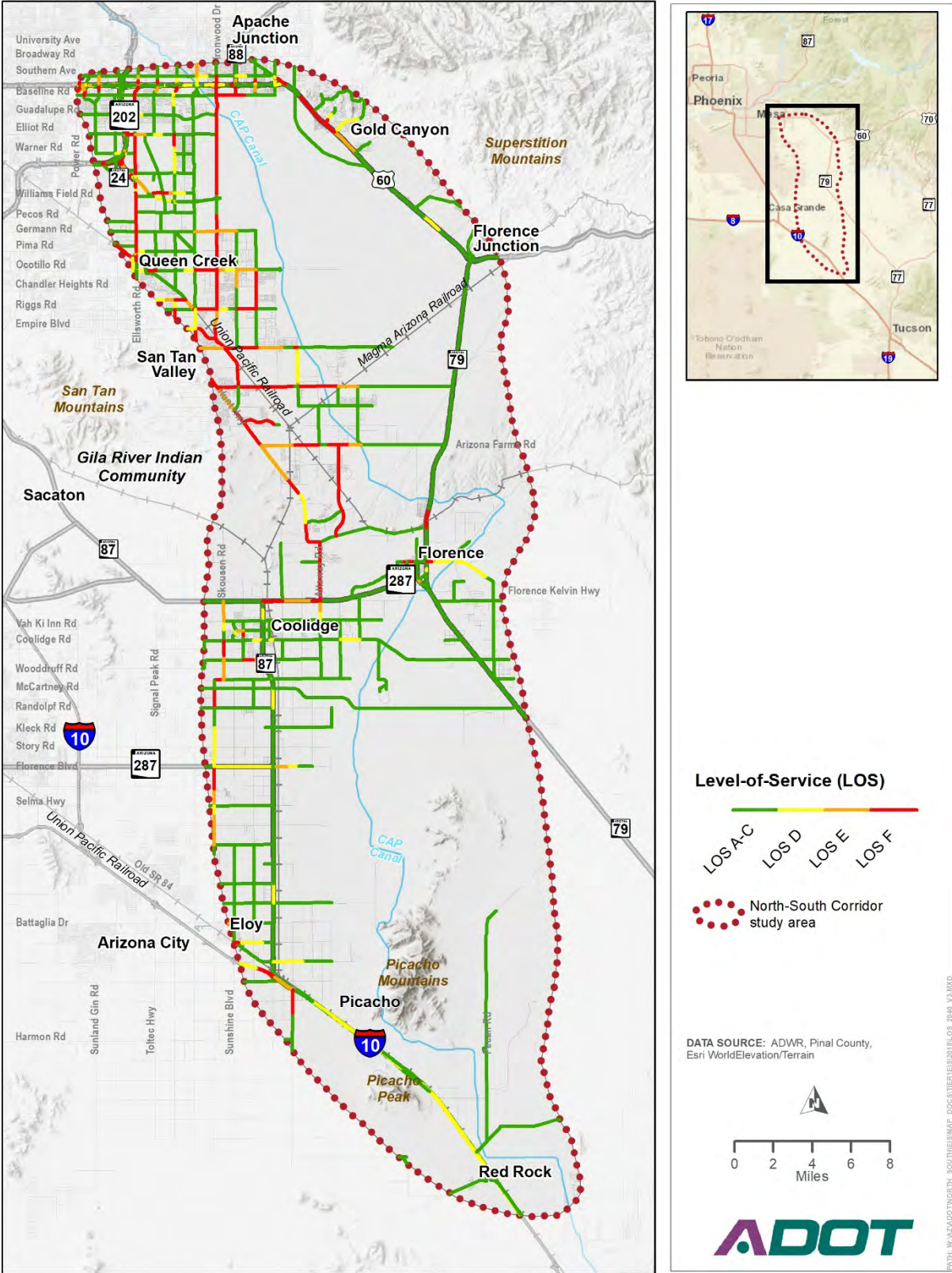
Figures 13 and 14 show the study area traffic volumes for key through-route corridors in the study area under existing conditions and 2040 conditions, based on modeling results from AZTDM2.

Figure 13. Study area existing conditions (2015) level of service



Source: second-generation Arizona statewide travel demand model (AZTDM2), 2016

Figure 14. Study area forecast conditions (2040) level of service



Source: second-generation Arizona statewide travel demand model (AZTDM2), 2017

The 2040 results show that the key corridors will experience, on average, nearly 200 percent more traffic than in 2015. With the added traffic, performance is estimated to degrade on many of these facilities, including SR 79 north of Hunt Highway. Overall, approximately 43 percent of local roadways in the study area would operate at LOS E or F in 2040 under the No-Action condition.

Purpose of the Proposed Action

Addressing anticipated transportation capacity deficiencies would enhance overall transportation network mobility by avoiding anticipated congestion on I-10 and regionally significant routes such as SR 24, SR 87, Hunt Highway, and Ironwood Drive, among others that would be operational by 2040. The addition of a continuous, unfragmented north-to-south transportation facility in the study area would facilitate regional mobility. A north-to-south transportation corridor would improve connectivity between Phoenix, southeastern Maricopa County, Pinal County, and Tucson.

The 2040 population of Pinal County is estimated at approximately 800,000, about twice the 2015 population of 406,468. Existing regional transportation facilities cannot accommodate the projected travel demand resulting from this growth. The Framework Program showed that at Pinal County full build-out development, I-10 would be heavily congested, creating substantial delays on local arterial streets, county roads, and state highways for interstate and intrastate travelers between Phoenix and Tucson.

To address transportation needs in the study area, the purpose of this proposed action is to provide a continuous, access-controlled north-to-south transportation corridor that would:

- Enhance the transportation network to accommodate existing and future populations – Consistent with State, regional, and municipal planning initiatives, the new corridor would accommodate anticipated growth in the study area and across the larger region.
- Improve access to future activity centers – The new corridor would benefit the study area's new activity and population centers and undeveloped lands identified for conversion that are in various stages of the local or regional planning processes.
- Improve regional mobility – The new corridor would provide additional roadway capacity ahead of full build-out development to avoid congestion associated with anticipated growth.
- Provide an alternative to avoid congestion on I-10 – The new corridor would provide an unfragmented alternative to I-10 to reduce traffic delays at full build-out development.
- Improve north-to-south connectivity – The new corridor would connect eastern portions of the Phoenix metropolitan area with Pinal County and destinations to the south, including Tucson.
- Integrate the region's transportation network – The new corridor would provide a critical link, currently missing, in the transportation network to provide regional connectivity.

Eliminating the study area's anticipated north-to-south transportation capacity deficiencies is essential to: (1) establish and expand efficient transportation networks to facilitate mobility both within the study area and across the larger region and (2) efficiently connect with and alleviate congestion on the region's two existing major freeways (US 60 and I-10). The transportation system would not function efficiently without the linkages provided by continuous, unfragmented north-to-south transportation capacity in the study area. Without addressing the north-to-south capacity deficiencies and improving regional mobility, the integrity and efficiencies of the Framework Program and other studies would be compromised, congestion would worsen, and increased travel times would affect residents, employees, and visitors alike.

Other Desired Outcomes of the Proposed Action

In addition to meeting the NSCS purpose and need, the proposed action is expected to integrate into the social, economic, and environmental fabric of the study area over the next 20 years. Other desired outcomes in addition to the transportation benefits achieved by the proposed action include:

- Protecting and enhancing the natural environment along the Corridor:
 - alignments developed in Tier 2 studies that allow for continued or improved wildlife movement
 - limited disruption of sensitive wildlife habitat areas to reduce the possibility for growth-inducing impacts
- Supporting local and regional land use plans and preservation goals:
 - alignments developed in Tier 2 studies that allow for the protection of identified open space, agricultural, or other undeveloped land
 - avoidance of culturally sensitive properties during Tier 2 studies to the extent feasible and practicable
- Supporting equitable economic opportunities:
 - provide access to employment, educational, and civic centers and institutions within the study area and the larger Phoenix metropolitan area
 - accommodation of ROW (where appropriate and feasible) for intercity passenger rail serving the local population and greater region, including the Tucson and Phoenix metropolitan areas
- Complementing other planned transportation improvements along new and established corridors in the study area:
 - alignments developed in Tier 2 studies that integrate with the most current transportation and land use planning to respond to growth and not induce growth
 - maximization of efficiency of Corridor mobility through coordination with other ongoing and planned projects

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