2 Alternatives

This chapter describes the existing transportation network in the study area, the steps taken to identify the alternatives studied in detail in this Tier 1 DEIS, and the traffic performance of the alternatives. With a purpose and need established for the proposed action (as described in Chapter 1, *Purpose and Need*), the next step in the EIS process was to identify a range of reasonable alternatives to be studied in detail in this Tier 1 DEIS—consisting of *action corridor alternatives* that would entail implementing the proposed action to build a new freeway in the study area and a *No-Action Alternative* that would entail not implementing the proposed action (no new freeway would be built). Identifying reasonable alternatives to the proposed action allows for a meaningful comparison of how the alternatives would affect the environment (as described in Chapter 3, *Affected Environment and Environmental Consequences*).

The alternatives development and screening process is a hallmark of the NEPA process, using various criteria (such as the proposed action's purpose and need, environmental impacts, and public input) to screen out alternatives with unacceptable attributes in the early stages of the study process. Thus, by the time the drafting of the DEIS begins, the study team would have identified a range of reasonable alternatives for further analysis in the DEIS.

All identified action corridor alternatives for the proposed action could affect the natural and human environment in some way; such impacts would be unavoidable with implementation of a build alternative following the Tier 2 phase because of the size of the proposed action. It is important to note, however, that the No-Action Alternative would also produce environmental impacts, resulting from doing nothing to address the purpose and need for building a major new transportation facility in the study area. Discussing the No-Action Alternative in an EIS is important because it serves as a benchmark that decision makers can use to compare the magnitude of environmental effects and transportation changes of the action corridor alternatives.

Federal regulations require that an EIS "rigorously explore and objectively evaluate all reasonable alternatives" (40 CFR § 1502.14). Given the size of the study area, the study team identified hundreds of potential alignments for the proposed action during the initial alternatives development process. Federal guidance calls for producing a range of alternatives to be evaluated and compared in the EIS (*Federal Register* 46: 18026 [1981]). This chapter describes the process of identifying numerous initial alignments and then screening those alignments to produce the reasonable range of alternatives compared in this Tier 1 DEIS. The chapter is presented as follows:

- Section 2.1, *Transportation Setting* – Describes the study area's existing transportation conditions.
- Section 2.2, *Corridor Alternatives Development and Screening* – Describes the alternatives development and screening process, beginning with an initial screening of modal and route alternatives. It led to the identification of 1,500-foot-wide route alternatives. The discussion includes a description of land uses considered and sensitive areas avoided to the extent practicable, and how the route alternatives were developed and modified to address various constraints. The section also discusses modifications to accommodate connections with SR 24. Finally, the section discusses the study's transition to a Tier 1 EIS process and refinements to the 1,500-foot-wide corridors that led to the action corridor alternatives evaluated in this Tier 1 DEIS.
- Section 2.3, *Action Corridor Alternatives* – Discusses the 1,500-foot-wide action corridor alternatives considered in this Tier 1 DEIS. This section describes each of the full-length corridors in detail, providing information regarding locations and features, facility characteristics, ability to accommodate passenger rail, and general benefits. Corridor segments used to facilitate the analysis of the environmental impacts are also described.

- Section 2.4, *No-Action Alternative* – Describes the No-Action Alternative in terms of future transportation projects and major land use changes that would occur in the study area without the proposed action.
- Section 2.5, *Transportation Performance of the Alternatives* – Describes the performance of the No-Action Alternative and action corridor alternatives in terms of transportation performance criteria. The *Traffic Report, North-South Corridor Study* provides additional information on this topic (see Appendix B, *Traffic Information*).

2.1 Transportation Setting

The study area is over 45 miles long and encompasses 900 square miles (Figure 1.1-1). It is 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 includes a small portion of Maricopa County, Pinal County, Apache Junction, Queen Creek, the Gila River Indian Community, the Tohono O'odham Nation, Florence, Coolidge, and Eloy.

2.1.1 Transportation Planning and Policy Guidance

Local jurisdictions, Pinal County, MPOs, and ADOT have prepared planning and policy guidance documents for transportation in the study area. These studies—which were prepared to support the transportation needs accompanying the region's growth and land development—are summarized in Section 1.3.3, *Previous Transportation Studies in the Study Area*.

One of the guidance documents supporting these planning documents is the 2008 *Pinal County Regionally Significant Routes Plan for Safety and Mobility* (RSRSM) document, funded by Pinal County to provide guidance for the County and other stakeholders (both public and private) to implement "regionally significant routes" and preserve ROW for these routes. It is notable that all Pinal County jurisdictions, including the Gila River Indian Community, CAG, and ADOT, have supported this document, which was updated and adopted in June 2017 by the Pinal County Board of Supervisors. Figure 2.1-1 shows the Pinal County regionally significant routes.

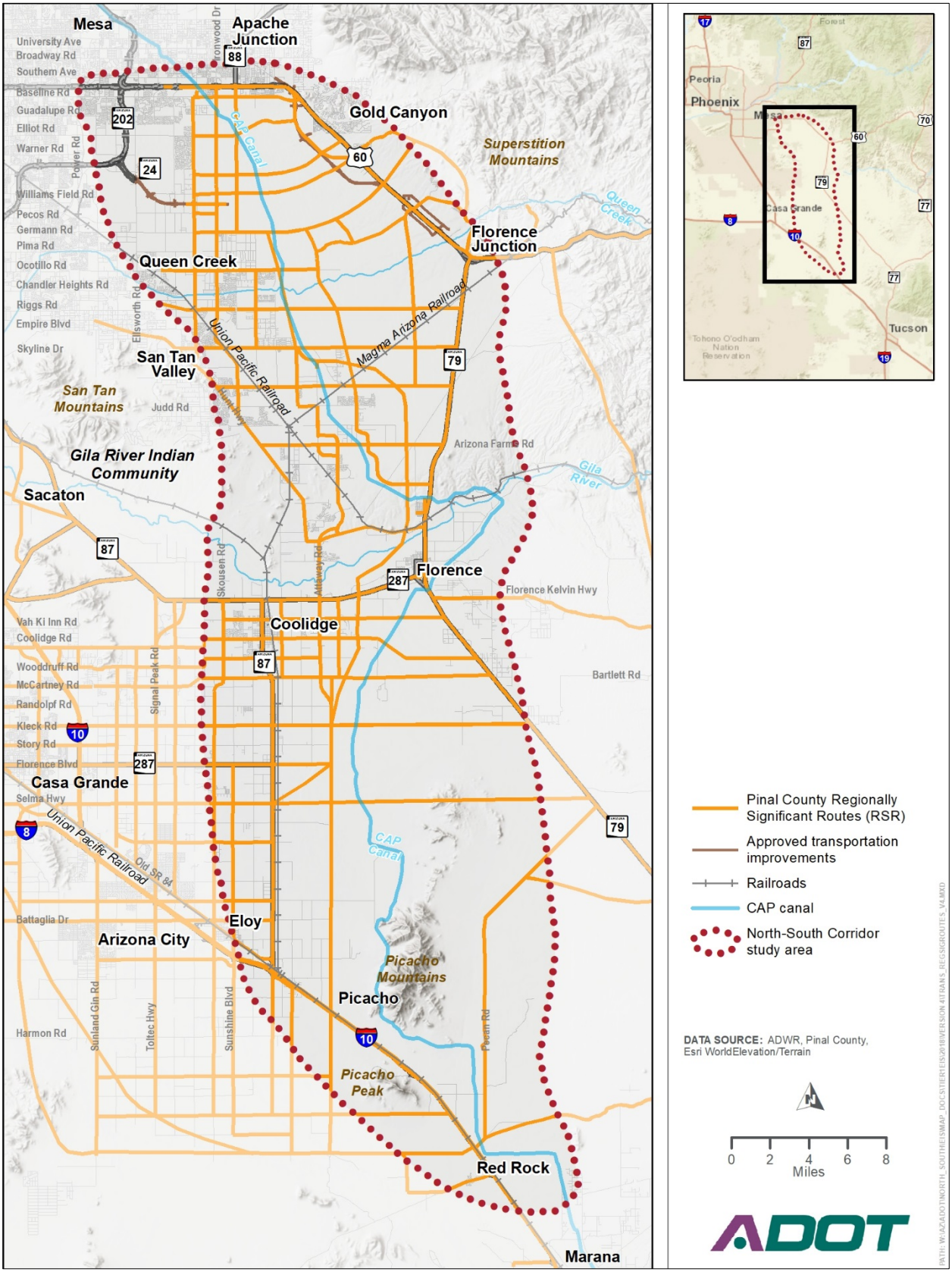
The intent of the RSRSM is to provide continuity across Pinal County and through urban areas, and to connect with adjacent counties and state highways. Many of the primary arterial streets in the study area, which provide access to more densely populated areas, are designated as regionally significant routes.

As noted in Chapter 1, *Purpose and Need*, ADOT and FRA have proposed a passenger rail line between Phoenix and Tucson. ADOT and FHWA determined that the Corridor should not preclude passenger rail, allowing it to be developed as a multipurpose corridor, should the rail study identify the Corridor as a preferred alternative. The proposed action's design takes this into account by including intercity passenger rail design requirements (such as turn radius and grades) into the criteria.

The *Arizona Passenger Rail Corridor Study* ROD was approved by FRA in 2016. The study identified a routing option that would align with the North-South Corridor from its southern terminus with I-10 to approximately the Magma Arizona Railroad, north of the Gila River. The rail study deferred to the NSCS to identify which action corridor alternative would be followed by intercity passenger rail for this segment, should the build alternative be selected as the preferred alternative.

The Pinal Regional Transportation Authority's *Pinal Regional Transportation Plan* represents the County's 20-year transportation plan and includes funding for ROW acquisition and construction of portions of the "North-South Parkway." The County's depiction of the North-South Parkway alignment is only representational; it does not represent an alignment that is evaluated in this Tier 1 DEIS. The other roadway improvements identified in the plan (which defer the actual route of the North-South Parkway to this ongoing NEPA process) are incorporated as part of the No-Action Alternative.

Figure 2.1-1. Pinal County regionally significant routes



2.1.2 Transportation Conditions

2.1.2.1 Existing Roadway Facilities

The primary freeway serving Maricopa, Pinal, and Pima Counties is I-10, which is the main connection between Phoenix and Tucson. I-10 is primarily six lanes between Phoenix and Tucson, with several segments limited to four lanes. I-10 provides the only freeway access in the southern portion of the study area. The northern portion of the study area is served by US 60, SR 202L, and the Maricopa County segment of SR 24, which extends from SR 202L east to Ellsworth Road.

Several state highways carry most of the regional traffic in Pinal County. These highways have driveways, direct access to businesses and homes, traffic signals, and sometimes pedestrian crossings (unlike freeways, which are controlled-access highways, and vehicles may enter only by using ramps at interchanges). These facilities include SR 87, SR 287, and SR 79, which are all primarily two-lane highways with the exception of portions that pass through the urbanized areas of Florence, Coolidge, and Eloy.

The study area has a limited network of arterial streets, including Hunt Highway, Ellsworth Road, Ironwood Drive, Gantzel Road, Bella Vista Road, Arizona Farms Road, Attaway Road, and Cactus Forest Road. Figure 2.1-2 shows the study area's roadway network.

In the northern portion of the study area, most of the land to the east of the Central Arizona Project (CAP) Canal is owned by ASLD; this area, referred to as the Superstition Vistas planning area, covers approximately 175,000 acres (see Figure 3.2-5). In 2011, the *Comprehensive Plan* for Pinal County was amended to incorporate the Gateway/Superstition Vistas Growth Area. The conceptual land use plan for the region anticipates more than 800,000 residents in the area. US 60 and SR 79 ring this area to the east, but no improved through routes connect this area with development that is occurring to the west.

In the center portion of the study area, new development in the San Tan Valley (an unincorporated area between Queen Creek to the north and west, Apache Junction to the north, and Florence to the south) is extending south and east toward the well-established communities of Florence and Coolidge. The Gila River creates an east-to-west barrier to the dominant north-to-south transportation movement in this area.

In the southern portion of the study area, most of the land east of the CAP Canal is owned by ASLD. ASLD does not currently have development plans for this area. However, both the Cities of Eloy and Coolidge are planning for development in this area, associated with access to I-10, which traverses the southern end of the study area, and to UPRR, which runs north-to-south adjacent to SR 87.

2.1.2.2 Traffic Conditions

Existing traffic conditions in the study area vary considerably, with most congested routes in the northern portion of the study area (north of Arizona Farms Road). Figure 2.1-3 shows the No-Action Alternative study area-wide 2015 traffic performance.

The percentage of truck traffic in the study area ranges from 6 percent on US 60 to 22 percent on I-10. Agricultural activity throughout the study area results in farm equipment occasionally traveling on local routes to move between operation centers, or to move agricultural products to the regional market. This, coupled with the predominance of single-lane routes, may result in localized delays not reflected in the annualized average LOS results reported in Table 2.1-1.

Figure 2.1-2. Study area roadway network

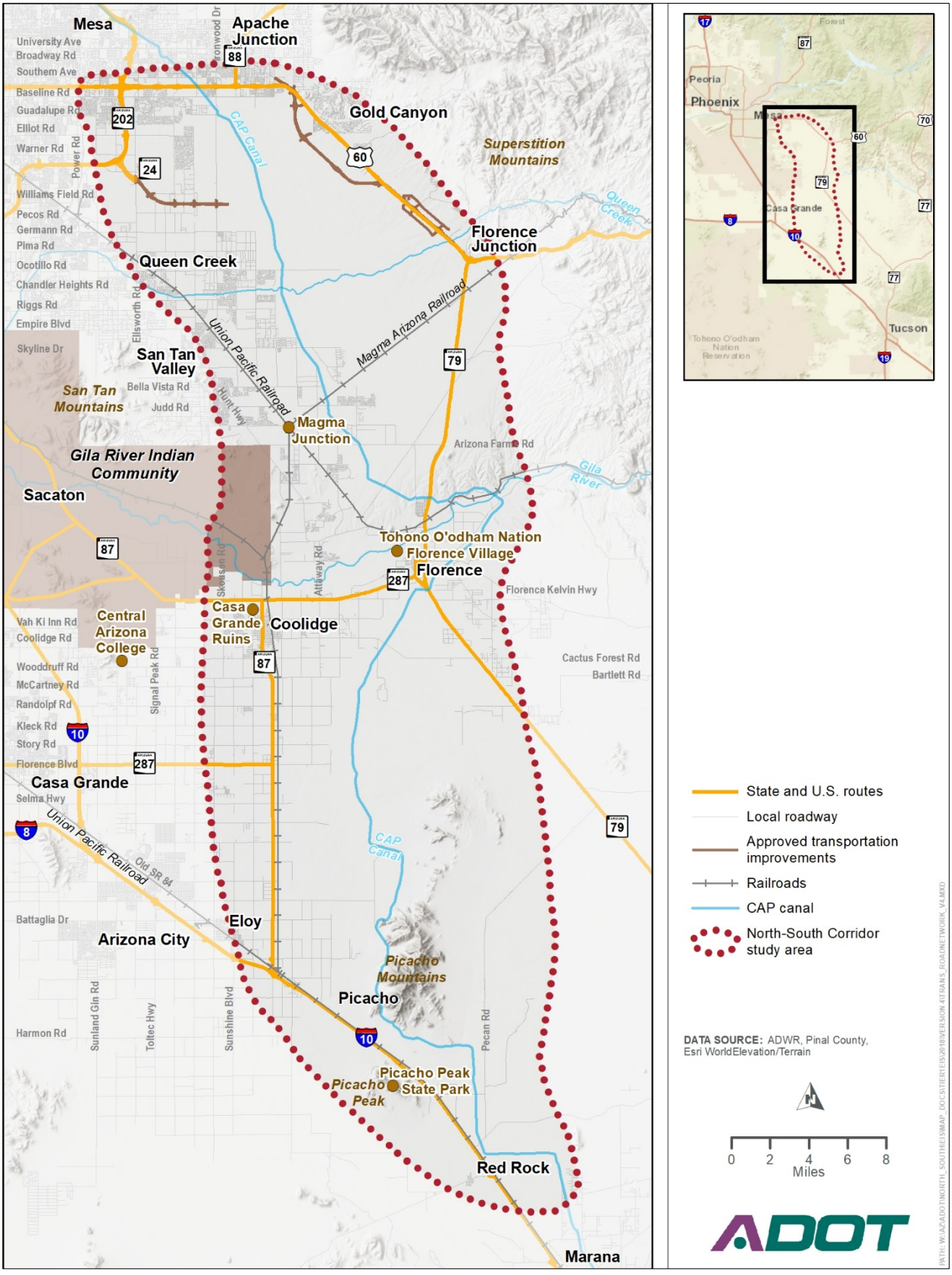
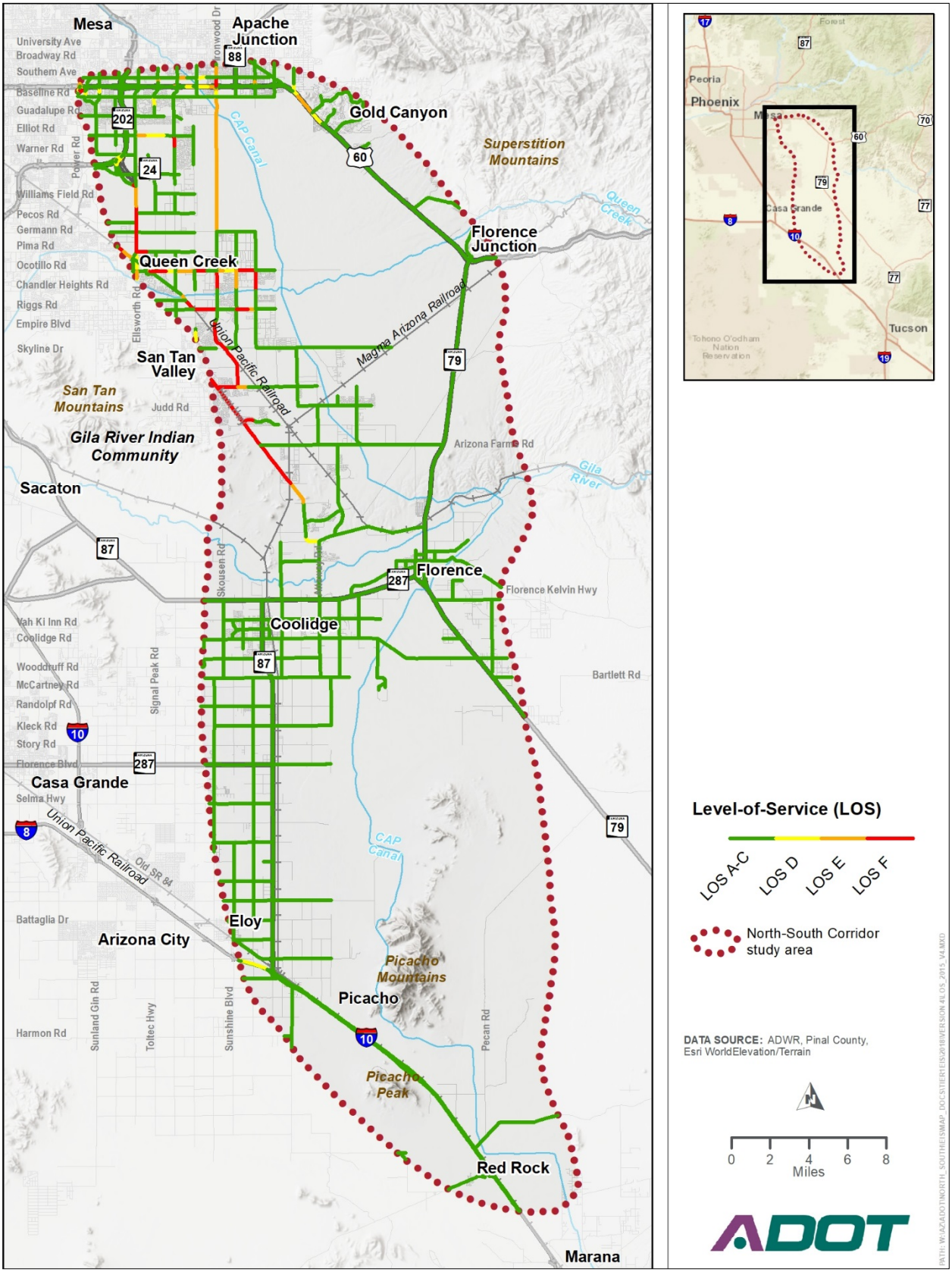


Figure 2.1-3. Study area-wide 2015 performance in level of service



Source: Arizona Department of Transportation (2018)

Table 2.1-1 summarizes traffic volumes and LOS for major routes in the study area. LOS is a grading system commonly used to qualitatively characterize traffic conditions. It refers to the ratio of roadway volume to capacity (v/c). As roadway traffic volumes increase, relative to roadway capacity, the LOS degrades. LOS ranges from LOS A (free-flow traffic conditions with little or no delay experienced by motorists) to LOS F (congested conditions where traffic flows exceed a road's capacity, resulting in long queues and delays). LOS C is generally considered acceptable in rural areas, whereas LOS D or better is acceptable for urban areas.

Table 2.1-1. Traffic volumes and level of service for regionally significant routes

Route	Location	Existing (2015)		
		Average daily traffic	Volume-to-capacity ratio	Level of service[a]
Hunt Highway	Arizona Farms Road to Franklin Road	10,200	1.01	F
State Route 79	Hunt Highway to Diversion Dam Road	8,300	0.46	A–C
Ironwood-Gantzel Road	Baseline Road to State Route 24	17,400	0.87	E
Schnepf Road	Combs Road to Skyline Drive	6,200	0.62	A–C
Attaway Road	Hunt Highway to State Route 287	4,100	0.41	A–C
State Route 87 (Arizona Boulevard)	Vah Ki Inn Road to Martin Road	7,500	0.21	A–C
Hunt Highway	Bella Vista Road to Copper Mine Road	29,100	2.39	F
Riggs-Combs Road	Signal Butte Road to Schnepf Road	10,100	1.01	F
Skyline Drive	Schnepf Road to Quail Run Lane	4,500	0.44	A–C
Bella Vista Road	Gantzel Road to Quail Run Lane	5,900	0.59	A–C
Arizona Farms Road	Hunt Highway to Copper Basin Railway	2,600	0.26	A–C
Coolidge Avenue	State Route 87 to Attaway Road	1,000	0.10	A–C
State Route 287	Christenson Road to Attaway Road	6,600	0.37	A–C
Houser Road	Sunshine Boulevard to Sorrel Road	600	0.06	A–C
U.S. Route 60	Peralta Road to State Route 79	9,600	0.27	A–C
Ocotillo Road	Rittenhouse Road to Ironwood Drive	19,800	1.00	F
State Route 287	Attaway Road to Valley Farms Road	5,600	0.31	A–C
Interstate 10	Sunshine Boulevard to State Route 87	56,500	0.70	A–C

[a] Relationship of volume-to-capacity ratio and level of service (LOS):
LOS A–C: volume-to-capacity ratio ≤0.72
LOS D: volume-to-capacity ratio >0.72 and ≤0.84
LOS E: volume-to-capacity ratio >0.84 and ≤1.00
LOS F: volume-to-capacity ratio >1.00
Volume-to-capacity ratio is a measure comparing a road's use with its capacity; a larger number indicates higher use.

As discussed in Chapter 1, *Purpose and Need*, travel times from specific locations throughout the study area are high today. In the northern portion of the study area, San Tan Valley experiences some of the worst congestion. Peak period travel speeds between San Tan Valley and regional destinations such as the Phoenix Mesa-Gateway Airport to the northwest and downtown Florence to the southeast are under 40 miles per hour (mph), the slowest in the area.

Given the growth expected for the region's population and employment through 2040, travel times are forecast to increase considerably from today's levels. Travel modeling shows that by 2040, peak period travel speeds in the northern portion of the study area would be less than half of what they are today. The

trip between San Tan Valley and the Phoenix Mesa-Gateway Airport is expected to take over 45 minutes by 2040, more than twice the time it takes today in congested conditions.

As can be seen on Figure 2.1-3, the lack of continuous through routes is a significant issue facing the regional transportation network. The discontinuous, disconnected network makes for considerable travel times both within and through the study area.

2.1.2.3 Existing Nonroadway Transportation Facilities

Railroads

UPRR has rail lines carrying freight in the study area. The UPRR east-to-west Sunset Route crosses the entire state of Arizona, passing through Cochise, Benson, Tucson, Picacho, Eloy, Casa Grande, Maricopa, Gila Bend, Wellton, and Yuma.

Traffic on the Sunset Route ranges from 44 to 49 trains per day. This is UPRR's main line, connecting southern California with Texas and the south-central United States. In the study area, the Sunset Route runs parallel to I-10. Amtrak provides passenger service on the Sunset Route. The Sunset Limited service route begins in Orlando, Florida, and ends in Los Angeles, California, but it does not have stops in the study area (the closest stops are in Tucson and Maricopa).

UPRR has a second line in the study area, the Phoenix Subdivision, which runs north from the Sunset Route along SR 87 into Coolidge, where it turns to the northwest and serves the Phoenix metropolitan area. UPRR 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.

The Copper Basin Railway extends 55 miles from its interchange with UPRR at Magma to Winkelman. The line is owned by ASARCO, LLC, a copper mining, smelting, and refining company. The Magma Arizona Railroad is a 28-mile-long line owned by BHP Billiton and connects UPRR and Copper Basin Railway at Magma with the BHP Superior mine. This copper mine closed in 1995. The Magma Arizona Railroad is out of service, although it is expected to be reactivated when the Superior mine reopens.

Transit Facilities

Public transit service in Pinal County is limited. No countywide services exist, and most available services are for senior citizens and disabled residents. Limited Amtrak passenger rail service operates along UPRR (paralleling I-10); however, the closest stops are in Tucson and Maricopa.

The City of Coolidge operates a local circulator bus system, The Cotton Express, which provides deviated fixed-route bus service and on-demand service throughout central Coolidge (extending approximately 3 miles).

Bicycle and Pedestrian Facilities

Pedestrian and bicycle facilities in the study area are largely limited to sidewalks in existing residential subdivisions and in the central cores of the established communities of Queen Creek, Florence, Coolidge, and Eloy.

Pinal County's *Subdivision & Infrastructure Design Manual* requires minimum 8-foot-wide sidewalks on major and minor arterial streets developed in the county. Major and minor collector streets include progressively narrower sidewalk requirements. However, sidewalks are not required for residential subdivisions with lots 1 acre and greater in size. Pinal County also requires bicycle lanes on both sides of all arterial and major collector streets; however, because most of these routes are not improved, bicycle lanes do not exist on most routes.

State highways throughout the study area typically have wide shoulders to accommodate bicycle and pedestrian travel. Off-street trails are addressed in Section 3.5, *Parkland and Recreational Facilities*.

2.2 Corridor Alternatives Development and Screening

This study officially began with a Notice of Intent filed in the *Federal Register* on September 20, 2010, with the anticipation of completing an ASR, a design concept report, and a project-level EIS. The first steps in defining the proposed action included scoping (see Section 2.2.1) and determining the study area. The study area is the area within which data are collected to identify all known environmental resources. The study area (over 900 square miles) was large enough that it would encompass all potential conceptual alternatives.

Since that time, the study advanced through three general phases:

1. *Alternatives Selection Report*: The ASR identified a number of feasible 1,500-foot-wide route alternatives. This process and the alternatives recommended for analysis at the EIS level were documented in the ASR (ADOT 2014a).
2. Project-level DEIS: For the project-level DEIS, the study team narrowed the most promising alternatives to 400 feet to identify action alternatives and began an in-depth environmental evaluation of the affected environment and the impacts of the No-Action and action alternatives.
3. Tier 1 DEIS: The study's conversion to a Tier 1 DEIS resulted in reevaluating the ASR's 1,500-foot-wide route alternatives, evaluating their environmental impacts, and identifying a preferred action corridor alternative for consideration in subsequent Tier 2 studies.

The process is described in the following sections, followed by a discussion of additional alternative analyses and modifications—after the conversion to a Tier 1 EIS process—that led to the action corridor alternatives being considered in this Tier 1 DEIS.

2.2.1 Scoping

Project scoping is an early step in the NEPA process, the results of which are summarized in the *North-South Corridor Study Draft Agency and Public Scoping Summary*, dated February 2011 (see Appendix M, *Public Involvement*). Publication of the Notice of Intent in the *Federal Register* on September 20, 2010, represented the official start of the EIS process and initiated the scoping process. Agency and public involvement in the study is consistent with that prescribed in the *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) Section 6002 Coordination Plan for Agency and Public Involvement* (November 2011, last updated in February 2017).

The scoping process was open to agencies and the public to identify the range—or scope—of issues to be addressed during the development of engineering, planning, and environmental studies. The agency scoping meeting occurred on October 5, 2010, and the public scoping meetings occurred on October 19, 21, 26, and 28, 2010, in locations throughout the study area. Additional information regarding the scoping phase is found in Section 5.1.2, *Scoping Phase (2010)*.

2.2.1.1 How Was the Study Area Defined?

Early in the study process, a study area was delineated to define the alternatives analysis boundaries. Considering that I-10 is an existing transportation corridor passing through Pinal County and connecting the Phoenix and Tucson metropolitan areas, the study team looked to the area east of I-10 for opportunities to provide another route connecting the state's largest urban areas, especially considering the rapid population growth occurring in the eastern part of the Phoenix metropolitan area, in communities such as Mesa and Apache Junction, and anticipated growth in Pinal County.

The study team created a 45-mile-long study area that encompassed 900 square miles. The study area is generally bounded by US 60 on the north; I-10 on the south; SR 202L, the Gila River Indian Community, and SR 87 on the west; and SR 79 on the east. The study team collected data for the study area to identify its existing characteristics, including transportation infrastructure, population, development, military facilities, open space, topography, geotechnical conditions, drainage features, land owners, utilities, and environmental features (biological resources, cultural resources, noise levels, hazardous material sites, and socioeconomic conditions). Further information regarding these surveys is provided in Chapter 3, *Affected Environment and Environmental Consequences*.

2.2.2 Alternatives Selection Report

The initial alternatives development and screening process produced 1,500-foot-wide route alternatives recommended to be carried forward into a project-level DEIS for detailed analysis. Described in detail in the ASR (ADOT 2014a), the process:

- incorporated analyses of all reasonable alternatives
- supported the iterative nature of the NEPA process
- provided a record of the investigation and selection process
- determined optimal route alternatives (as constrained by the proposed action's purpose and need, agency and public input, and environmental, engineering, social, and economic data)

This section describes how the alternatives selection process was conducted, how alternatives were initially screened (beginning with modal alternatives and then moving on to route alternatives), how the study team analyzed the alternatives in detail, and which alternatives were selected for further study.

2.2.2.1 How Was the Alternatives Selection Process Conducted?

Although the concept of a new north-to-south transportation facility in Pinal County had been considered by state and regional transportation planners since the early 2000s, the formal process of studying the proposed Corridor did not begin until the September 20, 2010, Notice of Intent. Meetings began shortly thereafter in October 2010 to engage agencies, Native American tribes, and members of the public in the process of identifying alternatives for the proposed action. These outreach efforts were followed by a "scoping" period, during which the study team gathered data and developed criteria for screening alternatives based on discussions with local agencies, the public, and the tribes.

Preliminary engineering efforts identified potential constraints to building a new transportation facility in the study area, and early environmental studies and coordination with cooperating agencies and tribes identified environmentally sensitive areas that should be avoided. The study team held numerous meetings with agencies and members of the public to provide information regarding the study findings thus far, and used feedback gathered at those meetings to refine the alternatives under consideration. The process culminated in the 2014 publication of the ASR that recommended alternatives to be studied in detail in the project-level DEIS.

2.2.2.2 Who Was Involved in the Process?

ADOT is lead agency for the study and is guiding the proposed action through the process. The cooperating and participating agencies are also involved in developing the proposed action (see Section 1.1.3, *Study Partners*, for more information). Chapter 8, *Preparers*, lists the people who prepared this Tier 1 DEIS.

The study team coordinated with agency representatives and members of the public during the alternatives selection process to develop a better understanding of the overall study area, and to gauge

people's opinions regarding potential transportation improvements—more information regarding the outreach effort is provided in Chapter 5, *Comments, Coordination, and Public Involvement*.

2.2.2.3 What Alternatives Were Considered?

The ASR process featured two stages. Stage 1 involved evaluating a wide range of modal alternatives (as well as taking no action) to improve transportation conditions in the study area. Stage 2 involved developing and evaluating route alternatives that would accommodate a major transportation facility in the study area.

Stage 1 – Modal Alternatives Evaluation

The study team began by considering the study area's existing transportation network and studying various modes of transportation that could meet the proposed action's purpose and need. This "modal" analysis considered whether the existing network—with some upgrades and expansions—could handle future travel demand on its own.

During the Stage 1 alternatives screening process, the study team examined the following modal alternatives:

- Transportation demand management – A strategy to reduce overall demand on the transportation network. Transportation demand management strategies may include offering park-and-ride lots and express bus service to encourage the use of mass transit (thereby reducing the number of vehicles on the network) or encouraging telecommuting to reduce the number of trips on the network.
- Transportation system management – A strategy to encourage more efficient use of the transportation system by using technologies that optimize available roadway capacity. Typical transportation system management strategies include better timing of traffic signals and information systems that help motorists avoid areas experiencing heavy traffic congestion.
- Arterial street improvements – The full implementation of planned transportation network improvements, including ADOT improvements on state highways, Pinal County improvements on roads of regional significance, and municipalities' improvements on local roads.
- Transit improvements – A strategy to incentivize the use of higher-occupancy vehicles (such as buses and trains) rather than lower-occupancy automobiles. Transit improvements include developing regional bus transit systems and introducing passenger rail service between Phoenix and Tucson, through the study area.

Given that the existing network relies heavily on automobile transportation, the study team also considered mass transit as an alternative form of transportation. This initial screening determined that the modal alternatives previously described would not meet the proposed action's purpose and need, and a new transportation facility—in the form of a freeway—would be needed to accommodate the travel needs of the study area's future population. The study team then began studying where a freeway could be located and producing a recommended set of alternatives for study.

Based on this analysis, the study team decided that developing and evaluating route alternatives for a new freeway was justified (in Stage 2) and that other modal strategies should also be included in long-range transportation improvements in the study area.

Stage 2 – Route Alternatives Evaluation

For the Stage 2 evaluation of freeway route alternatives, the study team used various evaluation criteria that focused on (1) identifying a feasible route for building a freeway, from an engineering perspective; (2) minimizing adverse environmental impacts resulting from the freeway, with consideration of both the

natural and built environments and social and economic conditions; and (3) identifying a freeway route that would be acceptable to agencies and members of the public. Performance measures were developed to assess how well potential alternatives satisfied these criteria.

Stage 2 of the process developed and screened route alternatives to identify a reasonable set of continuous alternatives that could be advanced for detailed study. Alternatives were developed using input from agencies and members of the public.

ROUTE ALTERNATIVES

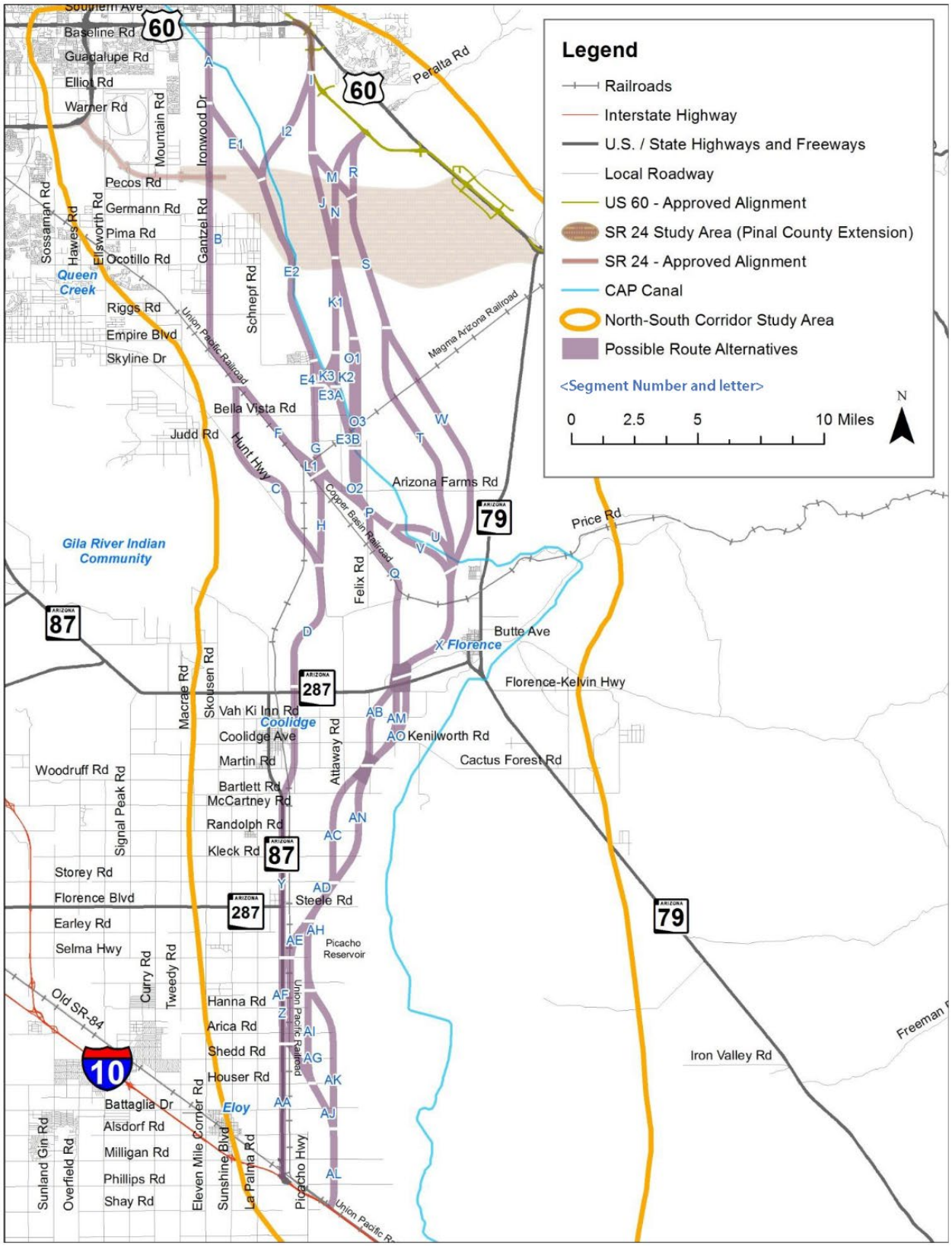
Possible route alternatives were identified, and input from agencies and the public was used to refine the alternatives. Ultimately, the 1,500-foot-wide route alternatives were defined by 56 route segments, each labeled with a letter or letter-number combination (Figure 2.2-1). Different combinations of the route segments could produce hundreds of continuous route alternatives.

STATE ROUTE 79

SR 79 has been suggested as a possible alternative to the proposed action to meet the purpose and need, as described in Chapter 1, *Purpose and Need.* Enhancements to SR 79, however, would not address the proposed action's purpose and need, for the reasons discussed below:

- SR 79 is far from existing and planned development. While the route has a western inflection point in Florence, the route is aligned to the northeast from Florence to Florence Junction (at SR 79's junction with US 60, approximately 13 miles east of Ironwood Drive in the northern portion of the study area) and is aligned southeast from Florence to Oracle Junction (outside of the study area and approximately 22 miles east of I-10). Today, most existing and planned development in the study area is occurring west of the CAP Canal, which is nearly 7 miles west of SR 79 (general area for much of the development occurring today). As the distance from Florence increases north and south along SR 79, so does the distance between SR 79 and planned development.
- SR 79 is east of the CAP Canal. Additional east-to-west roads built to access the facility would have to cross the CAP Canal. The *Pinal Regional Transportation Plan* does not identify funding to connect any of the regionally significant routes with SR 79. Without additional east-to-west connections, SR 79 would not serve regional traffic needs and would do little to alleviate local traffic congestion.
- Traffic modeling shows that SR 79 is expected to perform poorly—at LOS D—by 2040 in the Florence area at the bridge over the Gila River; this is a substantial degradation in its traffic-handling capacity from 2015. Future enhancements to the route may allow it to perform better locally, but the route would not draw sufficient out-of-direction traffic from routes such as Hunt Highway, SR 87, and SR 287, which are all anticipated to operate at LOS F by 2040. South and north of Florence, traffic modeling forecasts acceptable traffic volumes on SR 79 through 2040, even without improvements. This demonstrates that south and north of Florence, SR 79 would not relieve local congestion in the study area, which is projected to increase through 2040.

Figure 2.2-1. Possible route alternatives for evaluation in the project-level EIS (map from the 2014 *Alternatives Selection Report*)



Source: Arizona Department of Transportation (2014a)

2.2.2.4 How Were the Alternatives Analyzed?

During the screening of modal alternatives, the study team used a travel demand model to determine how well the various modes of transportation would meet the proposed action's purpose and need. The analysis used AZTDM2, which incorporates adopted statewide socioeconomic forecasts, with regionally significant roadways identified by Pinal County forming the transportation network (additional information on the travel demand modeling may be found in Section 2.5, *Transportation Performance of the Alternatives*).

A travel demand model relies on many sources of information, including how many people will live in a particular area in the future, their anticipated day-to-day travel destinations, how they would reach their destinations (for example, by driving or taking the bus), how many trips they would make, and which routes they are likely to use. Using this information, the model can predict future travel patterns, can create different scenarios for the future transportation network, and determine how well the network performs (in terms of meeting travel demand without excessive congestion and delays) under such scenarios.

For the screening of freeway alternatives, the study team relied on engineering and environmental studies and agency and public feedback to identify potential routes. The process was supported by geographic information system (GIS) analyses that helped study team members quantify potential impacts for each alternative (for example, how many railroads and canals an alternative would cross, or how many acres of sensitive habitat it would pass through). The study team evaluated the alternatives according to how they performed under the engineering, environmental, and agency and public support criteria. Poorly performing alternatives were dropped from consideration, while well-performing alternatives were advanced to undergo additional evaluations. This iterative process continued until the study team was able to identify a reasonable number of alternatives recommended for evaluation in the project-level DEIS. Appendix C, *Alternatives Screening*, provides further information regarding alternatives screening.

2.2.2.5 Which Corridor Route Alternatives Advanced for Further Consideration?

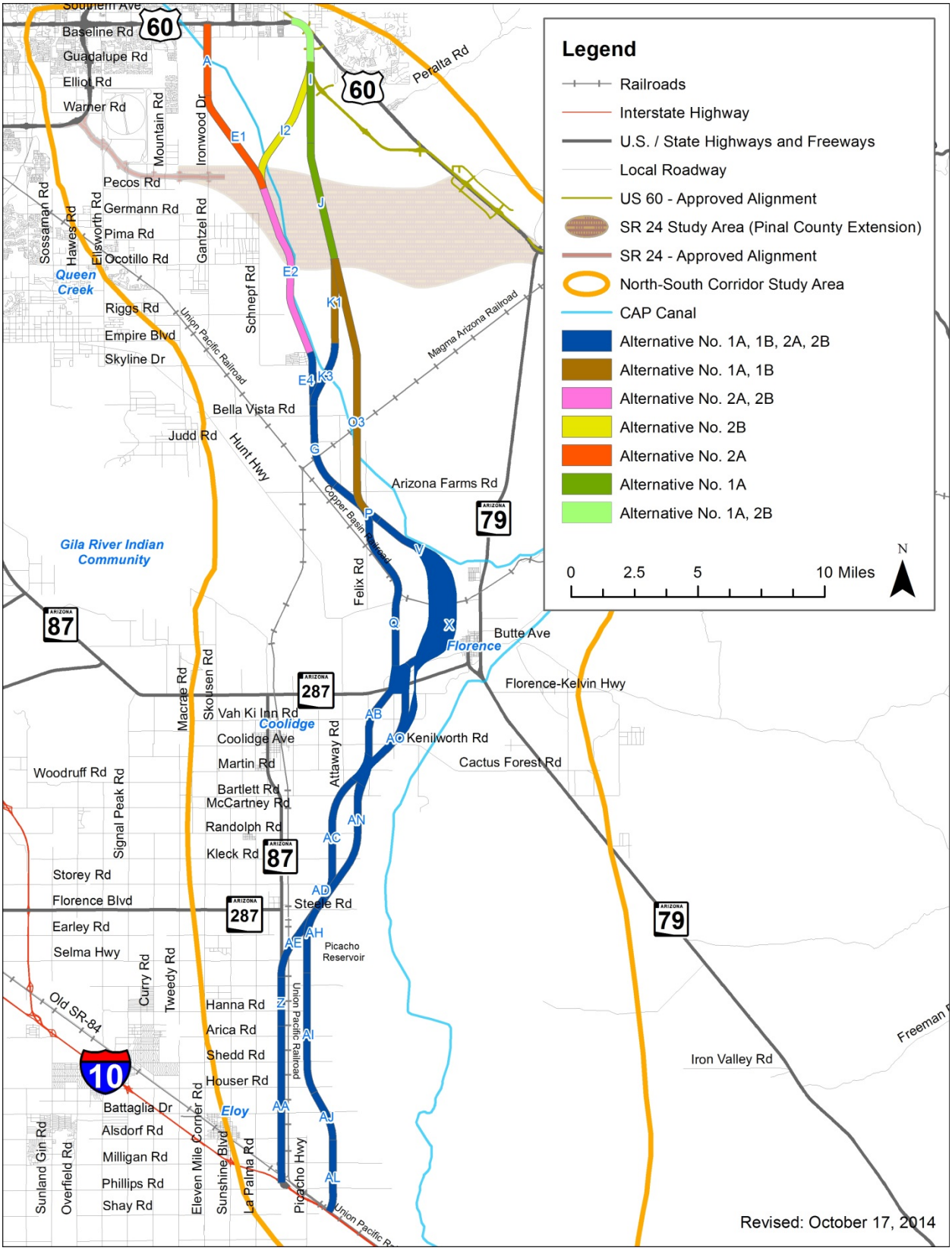
Corridor route alternatives with high ratings were connected to develop continuous route alternatives, sometimes using mid-rated route alternatives to connect along the length of the Corridor. No low-rated route alternatives were used.

The study team met with stakeholder agencies to present the preliminary continuous route alternatives. A consistent comment received from stakeholders was to retain alternatives west of the CAP Canal in the northern portion of the study area for further evaluation. Based on the agency feedback and supplemental information regarding sensitive environmental resources near the Gila River, the study team produced recommended route alternatives for further study in the project-level DEIS (Figure 2.2-2).

Individual route segments in the recommended route alternatives could be combined in any reasonable fashion during the study's project-level DEIS phase to produce many combinations of continuous route alternatives.

The study team documented the alternatives selection process in the ASR, completed in October 2014, which identifies the route alternatives recommended for further study in the project-level EIS and a location/design concept report. Public information meetings were held in the fall of 2014 to provide information regarding the recently completed alternatives analysis process and ASR and to elicit input from study stakeholders and the public in general. This public input was reviewed by the study team, and a summary report of public input was prepared and is available for viewing on the NSCS website.

Figure 2.2-2. Recommended route alternatives (map from the 2014 *Alternatives Selection Report*)



Source: Arizona Department of Transportation (2014a)

2.2.3 Corridor Route Alternative Options and Refinements

After publication of the ASR in October 2014, the alternatives recommended for further study were refined and additional options were studied. The sections that follow describe the refinement process that followed the ASR.

2.2.3.1 Incorporation of the SR 24 Extension into the Action Alternatives

At that time, the regional roadway network for Pinal County was delineated by the RSRSM study. The RSRSM study defined the regionally significant routes for the County to identify corridors for ROW preservation. However, implementation of most of the identified roadway system was predicated on development.

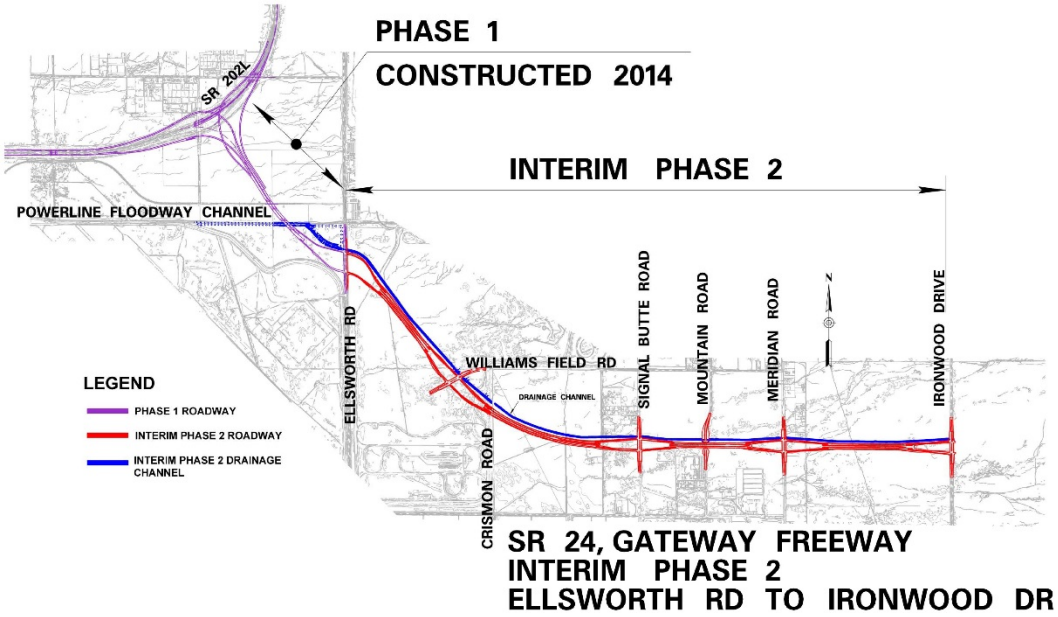
Today, congestion in the Southeast Valley of the Phoenix area partially results from the lack of regional facilities and the fact that development does not occur in a pattern that would build out the arterial street network as needed, but rather as necessary to support development projects. As a result, the system of arterial streets is developed to support developments, but with undeveloped land between these developments and a limited number of through facilities with limited lane capacity, bottlenecks occur. In addition, traffic traveling from the San Tan Valley and throughout Pinal County must make its way along the discontinuous surface street system to reach the Phoenix metropolitan area.

Given the need for a more comprehensive approach to developing the arterial street system, MAG has proposed a framework study for the southeastern portion of the Phoenix metropolitan area (as of August 2019, this study had not begun). This framework study would evaluate the roadway network needed to support the proposed North-South Freeway. As a result, ADOT recommended that the SR 24 study be incorporated into the NSCS, and that the route be evaluated up to the North-South Freeway, but not all the way to US 60 or SR 79—that need would be evaluated by MAG's proposed framework study.

The conceptual alignment alternatives for SR 24 proposed in the fall of 2008 were developed with the assumption that they would continue east from SR 202L to US 60 in the area of SR 79. In addition, they were developed in advance of the alternatives currently under consideration for the North-South Freeway. Since that time, several changes occurred that affected planning for the SR 24 alternatives.

The NEPA study and design for the SR 24 extension to Ironwood Drive, completed in 2011, identified three phases of construction. The initial phase of construction (SR 202L to Ellsworth Road) was completed in 2014. The second phase would have continued the route 3 miles east to Meridian Road, and the third phase would have extended it an additional mile east to Ironwood Drive. However, in 2015, with development in the area outpacing what was projected in the final 2011 environmental assessment, MAG prepared the *SR-24 Williams Gateway Freeway, Ellsworth Road – Ironwood Road Interim Phase II Feasibility Study*. This study triggered a revaluation of the final 2011 environmental assessment, and an interim second phase of construction between Ellsworth Road and Ironwood Drive (see Figure 2.2-3) was approved by FHWA in January 2018. Construction of this segment is planned to commence in 2019. This extension sets the footprint of SR 24 at a half mile south of Williams Field Road, establishing a starting point for alternatives just east of Ironwood Drive.

Figure 2.2-3. Approved second phase of SR 24 construction (map from SR 24 design concept report)



Source: Arizona Department of Transportation (2017b)

ADOT is currently considering the extension of SR 24 east from Ironwood Drive and establishing a logical terminus at the North-South Freeway (the end would be determined by the selected alternative). Alternatives for consideration should not preclude an extension to the east because future studies may recommend this extension.

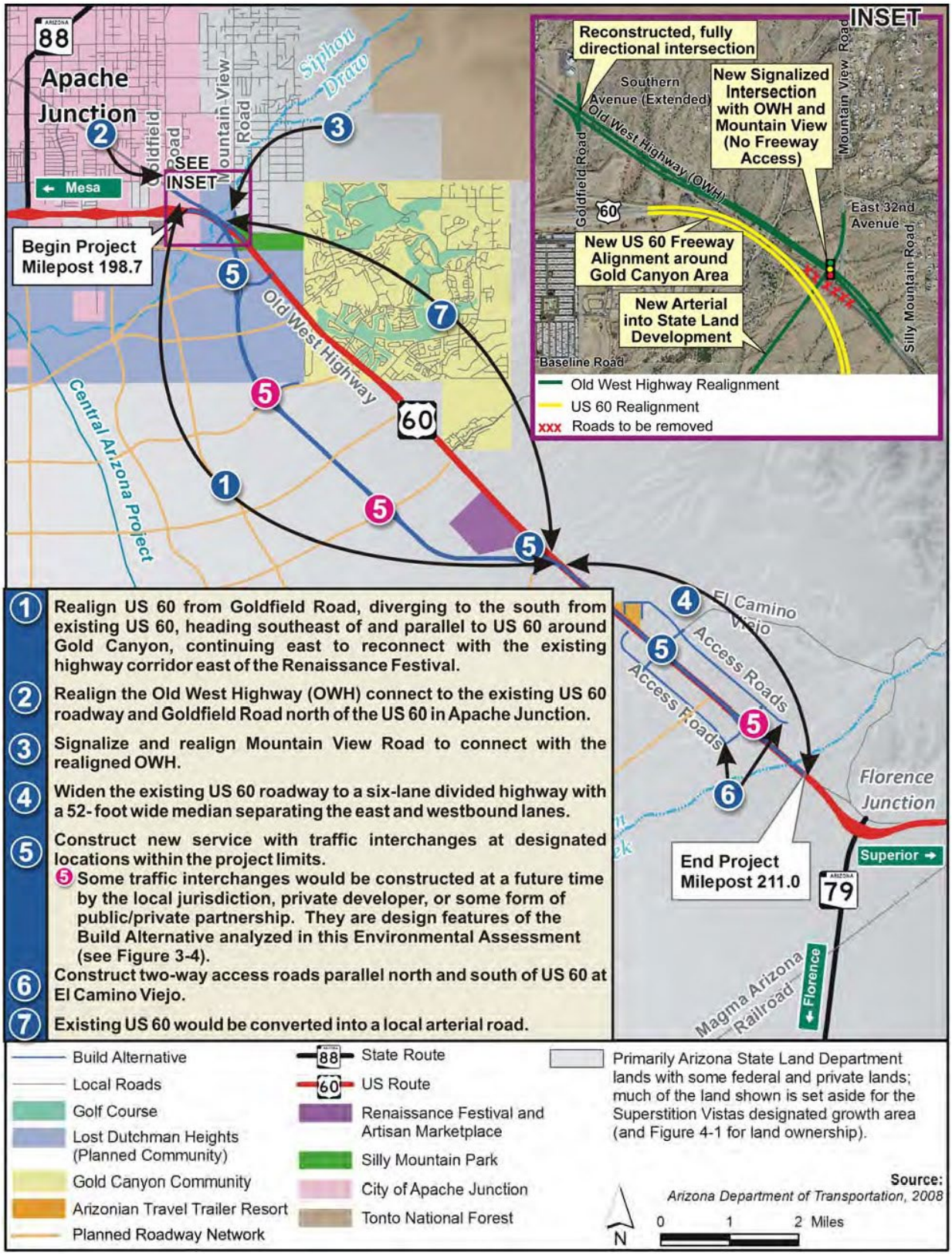
These factors provide the context for an SR 24 extension to the North-South Freeway, substantially reducing the area of options to consider for the system traffic interchange connecting the two freeways.

2.2.3.2 US 60 Bypass Connection

As Figure 2.2-4 (from the US 60 alignment study) illustrates, the US 60 bypass realigns US 60 between Mountain View Road and just south of the Renaissance Festival and Artisan Marketplace.

Along the northern portion of the bypass, the alignment of the North-South Freeway Eastern Alternative would be co-located with the bypass alignment as the freeway ties into US 60. South of US 60, the two freeways would split, with the US 60 bypass continuing southeast and the North-South Freeway continuing south or southwest, depending on the selected action corridor alternative.

Figure 2.2-4. Approved US 60 bypass, as shown in a map from the US 60 alignment study (2010)



Source: From ADOT, *US 60 Alignment Study: Superstition Freeway to Florence Junction Draft Environmental Assessment*, Figure 3-2: Build Alternative

2.2.3.3 Alternative Options Considered and Eliminated from Further Consideration

The following two optional routes were suggested by agencies and eliminated from further consideration through the NEPA process.

Options to Connect with SR 88 (Idaho Road)

In 2015, FHWA requested that ADOT consider adding options that would connect the North-South Freeway with US 60 at SR 88 (Idaho Road). This connection with US 60 would avoid some of the impacts on the community and businesses that would be affected by the US 60 connection at Ironwood Drive. The options were considered as avoidance alternatives if the Corridor resulted in environmental impacts at the system traffic interchange with US 60 under consideration. Two options were developed:

- Option A1 – a northbound transition from Segment E1 along the Western Alternative, crossing the CAP Canal, and following the Idaho Road alignment at Baseline Road, terminating with a system traffic interchange at US 60.
- Option A2 – a northbound transition from Segment J along the Eastern Alternative, following the Idaho Road alignment at Baseline Road, terminating with a system traffic interchange at US 60.

The Idaho Road options were shared with agency stakeholders in July 2015. Most of the land traversed by these options is owned by ASLD and planned for future development (see Section 3.2, *Land Use*, for more information). As a result, ASLD opposed the proposed Idaho Road options because a freeway in those locations would affect the planned 7,700-acre Lost Dutchman Heights development. Moreover, Salt River Project expressed written support for ASLD's opposition to the proposed Idaho Road options, citing concerns over impacts on Lost Dutchman Heights and on the Flood Control District of Maricopa County's flood-retarding structures (FRSs) in the area. Both agencies submitted formal letters to ADOT stating these positions in January 2016 (see Appendix A, *Agency Coordination*). As a result of this opposition, the Idaho Road options were eliminated from further study.

2.2.4 Conversion to a Tier 1 Environmental Impact Statement

To obtain NEPA approval for a project-level EIS, the study would need to follow federal guidelines dated February 9, 2011 (*Supplement to January 28, 2008, "Transportation Planning Requirements and their Relationship to NEPA Process Completion"*). According to the guidelines, funding sources for the proposed action would need to be identified before ADOT could sign the final project-level EIS ROD. Given the realities of funding, and the need for the study to serve long-term planning purposes, the decision was made to convert the project-level EIS to a tiered EIS. This change allows the study to be completed as a federally approved NEPA action.

This change allows the timing of the final project-level NEPA approval in Tier 2 to more closely correlate with the actual timing of project construction, because Tier 2 studies can be completed over time as construction funding becomes available. Tier 2 projects may occur in segments, with individual NEPA analyses and decisions advancing different segments of the corridor in response to need and funding.

In recent years, the use of tiering for NEPA documents has increased; CEQ regulations allow tiering as an option to organize analyses and decision-making in complex circumstances while taking into account the timing of different decisions (40 CFR Parts 1500–1508; 40 CFR § 1502.20; 23 CFR Part 771). A revised Notice of Intent for the Tier 1 EIS was published in the *Federal Register* on October 3, 2016, to reinitiate the NEPA process.

In accordance with this approach, the Tier 1 DEIS for the Corridor will provide the basis for an informed decision on a 1,500-foot-wide corridor for a new transportation facility between Apache Junction and Eloy, in which a narrower future transportation facility alignment will be identified in Tier 2. As a result, the

environmental analyses documented in this Tier 1 DEIS provide an appropriate level of detail needed to make an informed decision on a preferred corridor, if an action corridor alternative is selected. The Tier 1 study does not provide for the selection of a route location; instead, the appropriate level of detailed engineering and environmental analyses to inform a specific alignment decision would be completed in subsequent Tier 2 studies.

With the conversion to a Tier 1 EIS, the 400-foot-wide alignments developed as part of the project-level DEIS process after completing the ASR were no longer being considered. The study team would instead consider the 1,500-foot-wide route alternatives for the Corridor that were developed and subsequently refined (as described in this chapter) through the NEPA process. Should an action corridor alternative be selected, a specific route location would be selected during the subsequent Tier 2 studies.

2.2.4.1 Modifications to Avoid Environmentally Sensitive Resources

As the study continued and further environmental and land use data were made available to the study team, additional modifications to the 1,500-foot-wide route alternatives (see Figure 2.2-2) were made.

Concurrent with the conversion of the NSCS to a Tier 1 EIS, project-level evaluation work on the alignments identified a number of sensitive cultural resources that would be affected by the alignments. Given the sensitive nature of these sites, specific information regarding the sites is provided in reports that have been shared with affected parties, but is not part of the public record for the NSCS. Additional information on cultural resources may be found in Section 3.14, *Cultural Resources.*

To avoid impacts on these sites, the 1,500-foot-wide route alternatives for the Corridor were modified. These modifications took place near the Gila River, near Florence's historic downtown, and near the Queen Creek crossing. The changes were discussed with the Four Southern Tribes (Ak-Chin Indian Community, Gila River Indian Community, Salt River Pima-Maricopa Indian Community, and Tohono O'odham Nation) in compliance with Section 106 of the National Historic Preservation Act (NHPA, see Section 3.14, *Cultural Resources)*.

Gila River Crossing and Downtown Florence

Because of impacts on environmentally sensitive resources on the northern and southern banks of the Gila River, the ASR segments "AB" and "X" were no longer considered viable. This meant that the transition option that allowed consideration of the "Q" alignment across the Gila River was no longer viable because of impacts on these environmentally sensitive resources.

To address these concerns, the study team modified the Eastern Alternative through this area to avoid the environmentally sensitive resource impacts. North of Coolidge Avenue, approximately 2 miles south of SR 287, the action corridor alternatives were shifted farther east (where they cross SR 287). To avoid environmentally sensitive resource along the Gila River, the Eastern Alternatives were modified to cross the Gila River approximately 0.5 mile east of the ASR alignments.

Queen Creek Crossing

Near Queen Creek, the Eastern Alternatives were modified to avoid impacts on environmentally sensitive resources. This involved shifting the ASR alignments referred to as "J" and "O3" approximately 1.5 miles to the east. Also, given potential impacts on the environmentally sensitive resources, the transition options identified in the ASR as "K1" and "K3" were eliminated from consideration. This change affected the SR 24 connection with the Corridor by extending the SR 24 alternatives 1.5 miles to the east to make the connection. North of Queen Creek, the "I2" transition option was retained.

2.2.4.2 Modifications to Support a Western Alternative

FHWA challenged the study team to develop a route that provided a viable Western Alternative for consideration that avoided impacts on known cultural resource sites at the Gila River crossing. To do so, the study team returned to the ASR to consider whether any of the 56 original route alternatives might be reevaluated. Routes east of and including SR 79 were not considered for two reasons: (1) they were not contemplated as part of the ASR, and (2) routes that far to the east would not effectively address the purpose and need of improving regional mobility and connectivity.

A western alignment was developed near the previously eliminated ASR alignments "C" and "D," which connected Ironwood Drive in the northern portion of the study area with the SR 87 alignment in the southern portion of the study area (see Figure 2.2-2). These westernmost alignments in the ASR were not advanced from the ASR primarily because of low ratings from the public and local agencies.

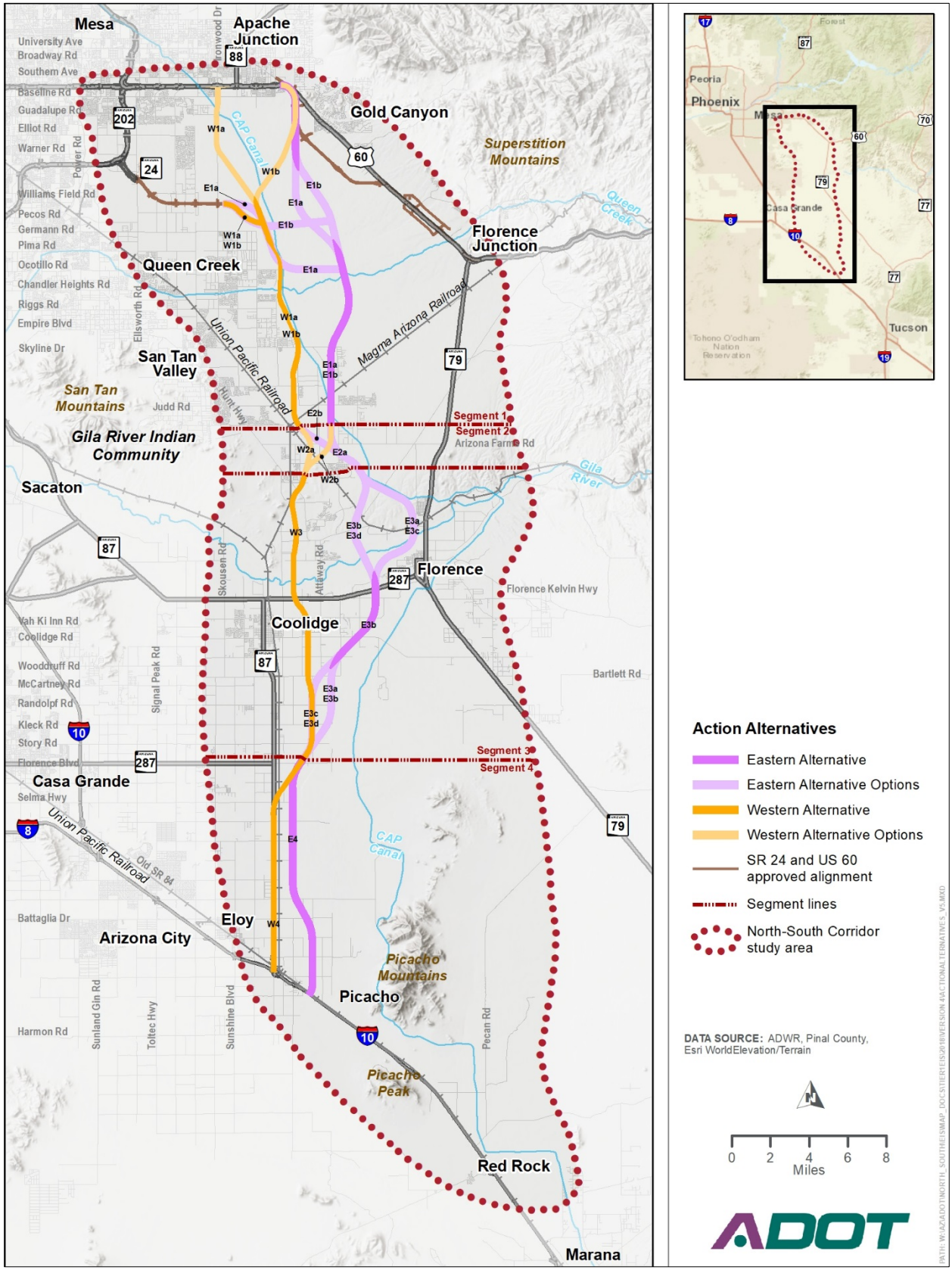
At its northern end, the new Western Alternative branches off the ASR alignments near Arizona Farms Road. The route avoids existing development north of Hunt Highway, crossing the route at close to a right angle before shifting to the south to avoid a UPRR crossing. South of Hunt Highway, the new corridor generally trends north-to-south for much of its length, avoiding impacts on environmentally sensitive resources along its course. South of the Gila River and SR 287, the alternative shifts approximately 0.5 mile to the east to minimize impacts on existing development before rejoining the ASR alignments at the McCartney Road alignment.

2.2.5 Action Corridor Alternatives Recommended for Evaluation

After several refinements to the ASR alignments, including the consideration of environmentally sensitive resources after the NSCS conversion to a Tier 1 EIS study, the 1,500-foot-wide action corridor alternatives recommended for evaluation in this Tier 1 DEIS were identified. Figure 2.2-5 shows the action corridor alternatives, separated into four segments that partition the study area.

When considered as connected corridors that run the length of the study area, the 1,500-foot-wide action corridor alternatives include a Western Alternative (shown in orange on Figure 2.2-5), an Eastern Alternative (shown in purple on Figure 2.2-5), and combinations of both to avoid and minimize environmental impacts. The action corridor alternatives in Segments 1, 2, and 3 include options (shown in paler colors of orange and purple relating to the Western and Eastern Alternatives, respectively, on Figure 2.2-5). In total, eight full-length action corridor alternatives with options that result in a total of 40 possible continuous through routes are evaluated in this Tier 1 DEIS and are described in detail in Section 2.3, *Action Corridor Alternatives*.

Figure 2.2-5. Tier 1 action corridor alternatives, by segment



2.3 Action Corridor Alternatives

As indicated in the previous section, after completion of the ASR in October 2014, and subsequent corridor refinements, eight full-length action corridor alternatives and options (allowing for a total of 40 continuous action corridor alternatives) are studied in detail in this Tier 1 DEIS. An overview of the study area, including the segments and naming conventions used in the evaluation of potential impacts in Chapter 3, *Affected Environment and Environmental Consequences*, is presented first. Specific details for each of the eight full-length action corridor alternatives are presented next. Appendix C, *Alternatives Screening*, provides further information regarding the alternatives.

2.3.1 Action Corridor Alternatives, by Segment

The purpose of the proposed action is to provide a new north-to-south transportation facility that connects the growing communities in central Pinal County with US 60 and I-10, and the extension of SR 24, which currently connects with SR 202L (Santan Freeway) west of the study area in the Phoenix area. All action corridor alternatives would be access-controlled freeways with three travel lanes in each direction and would not preclude future passenger rail in the freeway ROW.

The study area is divided into four segments that incorporate transition areas to allow the action corridor alternatives to shift east to west or west to east and to facilitate the evaluation of proposed action-related impacts (see Figure 2.2-5). Table 2.3-1 identifies the approximate limits of the four segments. The ability to shift east to west or west to east allows each segment to be studied separately, facilitating the avoidance of sensitive resources as necessary while maintaining a continuous north-to-south freeway corridor.

Table 2.3-1. Approximate limits of study area segments

Segment	Northern limit	Southern limit
1	U.S. Route 60	1 mile north of Arizona Farms Road
2	1 mile north of Arizona Farms Road	1.5 miles south of Arizona Farms Road
3	1.5 miles south of Arizona Farms Road	1 mile south of Storey Road
4	1 mile south of Storey Road	Interstate 10

To facilitate the evaluation of the action corridor alternatives by segment, they are named according to their location to the east (E) or west (W) and their segment (1, 2, 3, or 4). Letters are added to the name if multiple options are under consideration (a, b, c, or d). Table 2.3-2 lists the action corridor alternatives.

Table 2.3-2. Action corridor alternatives, by segment

Segment	Eastern Alternative	Western Alternative
1	E1a Alternative E1b Alternative	W1a Alternative W1b Alternative
2	E2a Alternative E2b Alternative	W2a Alternative W2b Alternative
3	E3a Alternative E3b Alternative E3c Alternative E3d Alternative	W3 Alternative
4	E4 Alternative	W4 Alternative

2.3.2 Full-length Action Corridor Alternatives

The eight full-length action corridor alternatives are described in detail below. These alternatives were developed based on their ability to maintain eastern or western alignments along their lengths, or to shift from east to west or west to east between the study area segments to avoid or minimize impacts on environmental resources. Table 2.3-3 identifies the segmented action corridor alternatives incorporated into each of the eight full-length action corridor alternatives and shows the total corridor length.

Table 2.3-3 also compares the characteristics of the eight full-length action corridor alternatives. The lengths of the North-South Corridor (north-to-south) and SR 24 (east-to-west) sections are shown to illustrate how each alternative varies based on the options selected.

Table 2.3-3. Comparison of characteristics of the full-length action corridor alternatives, by segment and length

Characteristic	Full-length action corridor alternative							
	1	2	3	4	5	6	7	8
Total possible segment configurations	2[a]	8[a,b]	8[a,b]	2[a]	2[c]	8[b,c]	8[b,c]	2[c]
Length of North-South Corridor (miles)	48.1–48.4	50.6–52.9	51.6–54	49.2–49.5	48.5–48.8	49.6–52	50.7–53	49.5–49.8
Length of State Route 24 (miles)	2.4	2.4	2.4	2.4	5.9–8	5.9–8	5.9–8	5.9–8
Total length (miles)[d]	50.5–50.8	52.9–55.3	54–56.3	51.5–51.8	54.4–56.8	55.6–60	56.6–61	55.5–57.8
Option 1	W1a, W2a, W3, W4	W1a, E2b, E3a or E3c, W4	W1a, E2b, E3a or E3c, E4	W1a, W2a, W3, E4	E1a, W2b, W3, W4	E1a, E2a, E3a or E3c, W4	E1a, E2a, E3a or E3c, E4	E1a, W2b, W3, E4
Option 2	W1b, W2a, W3, W4	W1b, E2b, E3a or E3c, W4	W1b, E2b, E3a or E3c, E4	W1b, W2a, W3, E4	E1b, W2b, W3, W4	E1b, E2a, E3a or E3c, W4	E1b, E2a, E3a or E3c, E4	E1b, W2b, W3, E4
Option 3	—[e]	W1a, E2b, E3b or E3d, W4	W1a, E2b, E3b or E3d, E4	—	—	E1a, E2a, E3b or E3d, W4	E1a, E2a, E3b or E3d, E4	—
Option 4	—	W1b, E2b, E3b or E3d, W4	W1b, E2b, E3b or E3d, E4	—	—	E1b, E2a, E3b or E3d, W4	E1b, E2a, E3b or E3d, E4	—

[a] W1a or W1b [b] E3a or E3b or E3c or E3d [c] E1a or E1b
[d] Action corridor alternatives' length is inclusive of the east-to-west State Route 24 connection.
[e] not applicable

All of the action corridor alternatives have two options in Segment 1: the Eastern Alternative has E1a and E1b and the Western Alternative has W1a and W1b. In Segment 3, the Eastern Alternative has four options: E3a, E3b, E3c, or E3d. Therefore, any of the alternatives that follow the Eastern Alternative in Segment 3 have a total of eight options available.

The range of lengths shown in Table 2.3-3 is a result of the various options. In Segment 1, the W1a Alternative is 0.3 mile shorter than W1b, and the E1a Alternative is 2.4 miles longer than E1b. The difference in the two Eastern Alternatives' SR 24 connections contribute to the differences in these

alternatives. In Segment 3, the differences between E3a and E3c, and between E3b and E3d, are insignificant from a traffic perspective; therefore, the E3a and E3b results are representative of E3c and E3d, respectively. The E3a Alternative is 1.9 miles longer than the E3b Alternative. In Segment 4, the E4 Alternative is 1.1 miles longer than the W4 Alternative.

For both the Eastern and Western Alternatives, the anticipated 2040 travel time from I-10 near Eloy to the eastern Phoenix metropolitan area would drop from 83 minutes with the No-Action Alternative to 47 minutes with the Eastern Alternative and 45 minutes with the Western Alternative. For all of the action corridor alternatives, the Corridor is projected to operate at an acceptable LOS for its entire length. The annual average daily traffic (ADT) is expected to range from 5,000 vehicles per day or fewer at the proposed action's juncture with I-10 at the south to as many as 45,000 vehicles per day at its northern terminus with US 60. Approximately 9 percent of the vehicles on the Corridor would be trucks.

2.3.2.1 Segment 1

Segment 1 begins in the northern end of the Corridor at US 60 and continues south to the junction of Magma Arizona Railroad and UPRR, just north of Arizona Farms Road. Segment 1 contains two Eastern Alternatives (E1a and E1b) and two Western Alternatives (W1a and W1b).

The E1a and E1b Alternatives connect with US 60 just north of Gold Canyon, where the east-to-west-aligned US 60 curves to the southeast. In Segment 1, the Eastern Alternatives are east of the CAP Canal from their northern terminus with US 60 to just south of the Magma Arizona Railroad, where they cross the CAP Canal. This is the only instance where the alternatives are east of the CAP Canal. The E1a and E1b Alternatives follow similar alignments except where they connect with SR 24—the E1a Alternative makes a southern connection to SR 24, crossing the CAP Canal at the Ocotillo Road alignment, and the E1b Alternative makes a northern connection to SR 24, crossing the CAP Canal at the Germann Road alignment. The north-to-south length of the E1a and E1b Alternatives varies by only three-tenths of a mile (19 and 18.7 miles, respectively); however, the southern E1a Alternative SR 24 connection adds an additional 8 miles to the segment length, while the northern E1b Alternative SR 24 connection adds slightly less than 6 miles to the segment's overall length.

The W1a and W1b Alternatives share a similar footprint in Segment 1 for most of their length. North of the connection with SR 24, they split. The W1a Alternative follows the Ironwood Drive alignment to its juncture with US 60. The W1b Alternative crosses the CAP Canal just north of the Williams Field Road alignment and joins US 60 to the east, just north of Gold Canyon, where the east-to-west-aligned US 60 curves to the southeast. The overall north-to-south length of the W1a and W1b Alternatives varies by only three-tenths of a mile (18.8 and 19.1 miles, respectively), and the SR 24 connection adds approximately the same length to each alternative (2.4 miles).

2.3.2.2 Segment 2

Segment 2 is a relatively short transition segment. From north to south, this segment begins at the junction of Magma Arizona Railroad and UPRR, just north of Arizona Farms Road, and ends approximately 2 miles to the south. Segment 2 includes the E2a Alternative, which connects the Eastern Alternatives in Segment 1 with the Eastern Alternatives in Segment 3, and the E2b Alternative, which connects the Eastern Alternatives in Segment 1 with the Western Alternative in Segment 3. Segment 2 also includes the W2a Alternative, which connects the Western Alternatives in Segment 1 with the Western Alternative in Segment 3, and the W2b Alternative, which connects the Eastern Alternatives in Segment 1 with the Western Alternative in Segment 3.

2.3.2.3 Segment 3

Segment 3 continues from about 2 miles south of Arizona Farms Road to approximately SR 287 (Florence Boulevard). This segment has one Western Alternative and four Eastern Alternatives: E3a, E3b, E3c, and E3d.

The Segment 3 Eastern Alternatives (E3a, E3b, E3c, and E3d) split in two locations in Segment 3. From north to south, they split as they cross the Gila River, with the E3a and E3c Alternatives to the east and the E3b and E3d Alternatives to the west. The alternatives rejoin each other south of the Gila River (at approximately SR 287). They split again around a property identified for a future regional commercial development just north of Woodruff Road, with the E3a and E3b Alternatives to the east and the E3c and E3d Alternatives to the west.

The W3 Alternative was developed after completion of the ASR in response to potential impacts on environmentally sensitive resources by the ASR route alternatives. The general alignment of W3 is somewhat consistent with an alternative that was evaluated in the ASR, but that was eliminated from further evaluation because of poor impact ratings during the Stage 1 modal alternatives evaluation (see Section 2.2.2.3, *What Alternatives Were Considered?*).

2.3.2.4 Segment 4

Segment 4 extends from approximately SR 287 (Florence Boulevard) to I-10, which is the southern terminus of the action corridor alternatives. Segment 4 includes one Eastern Alternative (E4) and one Western Alternative (W4). From the north, the E4 Alternative is approximately 1 mile east of SR 87 until Battaglia Road, where it is aligned 2 miles east of SR 87. This shift was made to establish adequate spacing between the Corridor's system traffic interchange with I-10 and the existing service traffic interchange at I-10 and SR 87. The W4 Alternative is largely co-located with SR 87 for its length.

Figures 2.3-1 to 2.3-8 show the full-length action corridor alternatives.

Figure 2.3-1. Alternative 1, with two Segment 1 options

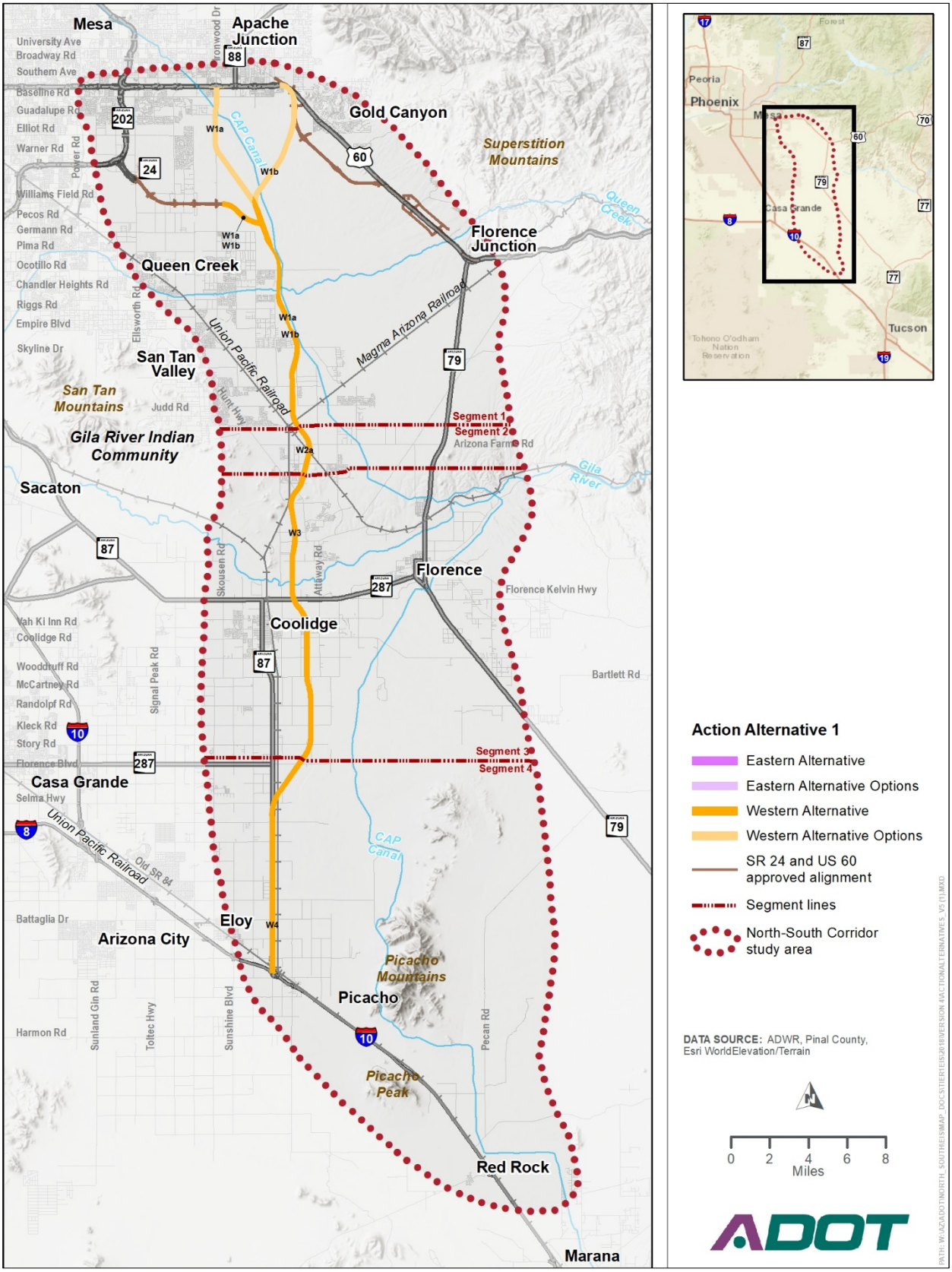


Figure 2.3-2. Alternative 2, with two Segment 1 options and four Segment 3 options

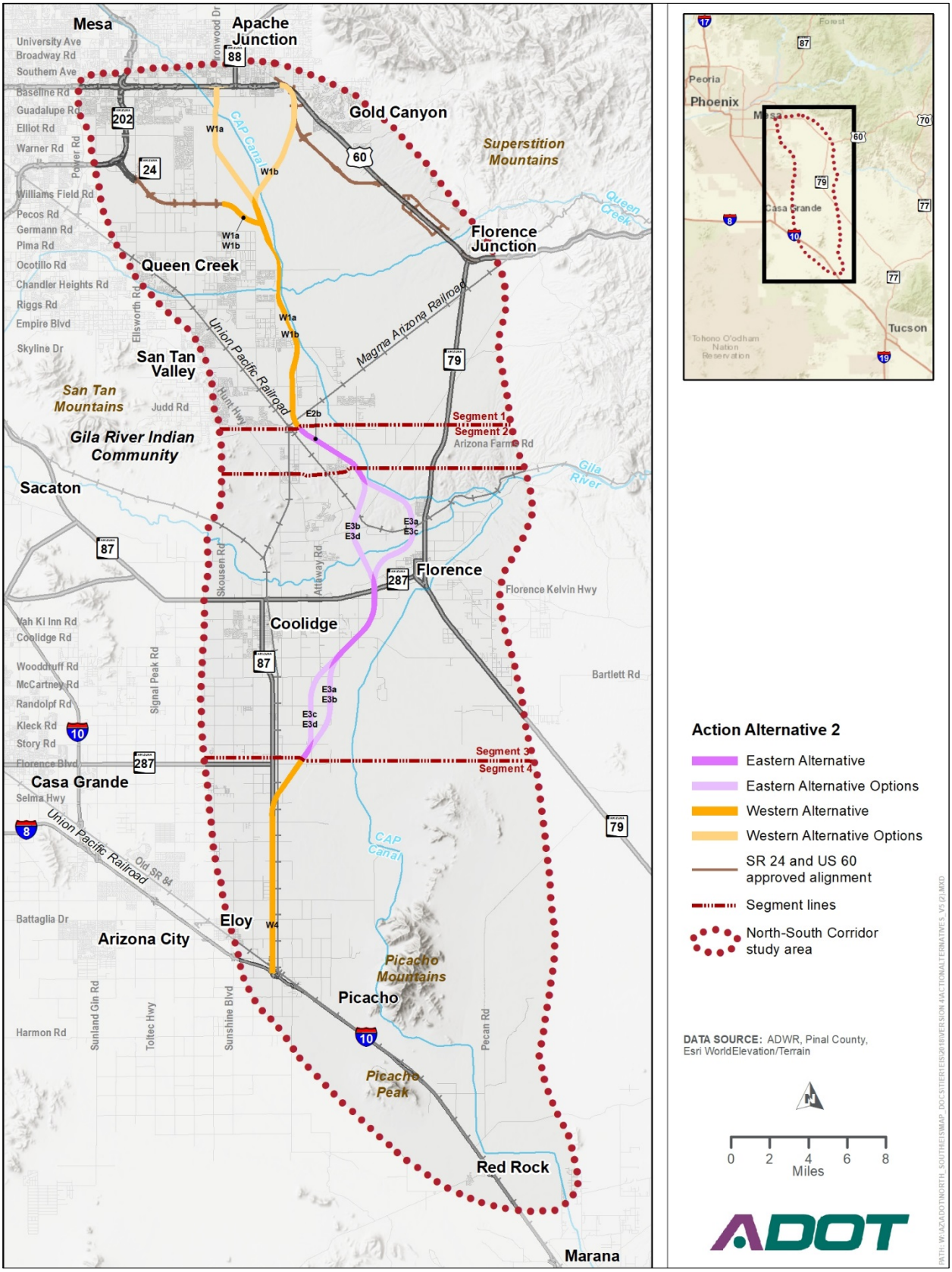


Figure 2.3-3. Alternative 3, with two Segment 1 options and four Segment 3 options

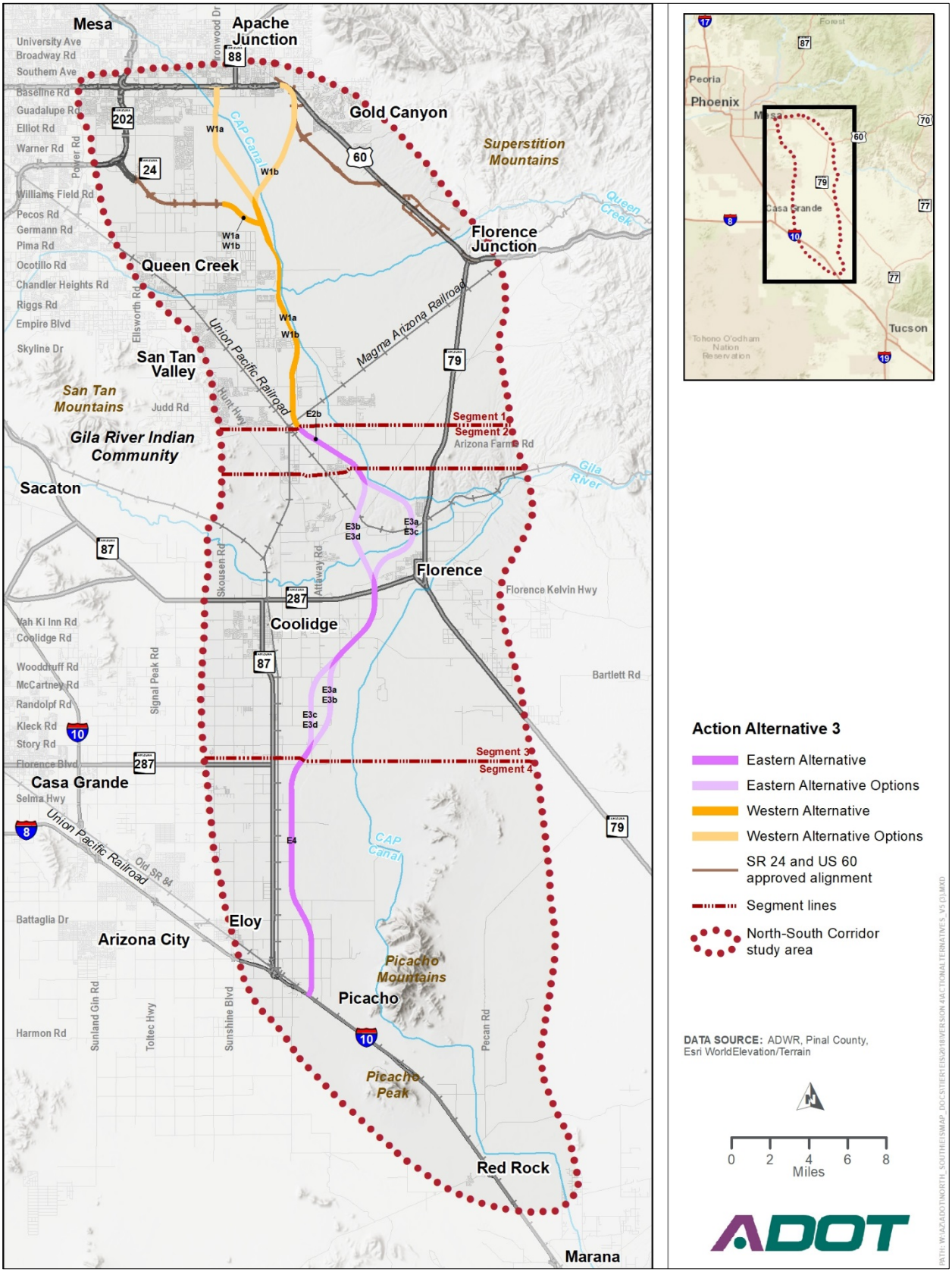


Figure 2.3-4. Alternative 4, with two Segment 1 options

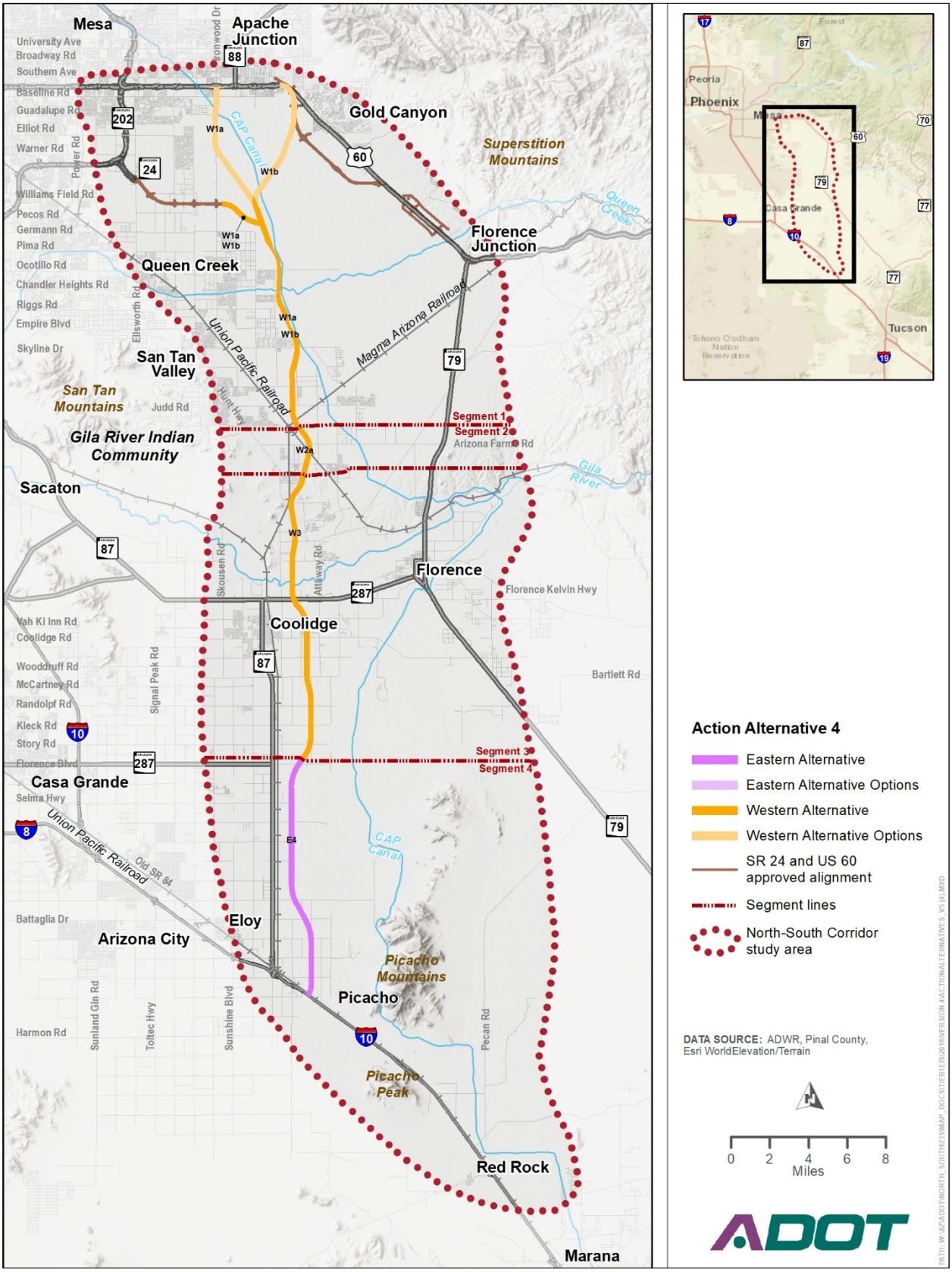


Figure 2.3-5. Alternative 5, with two Segment 1 options

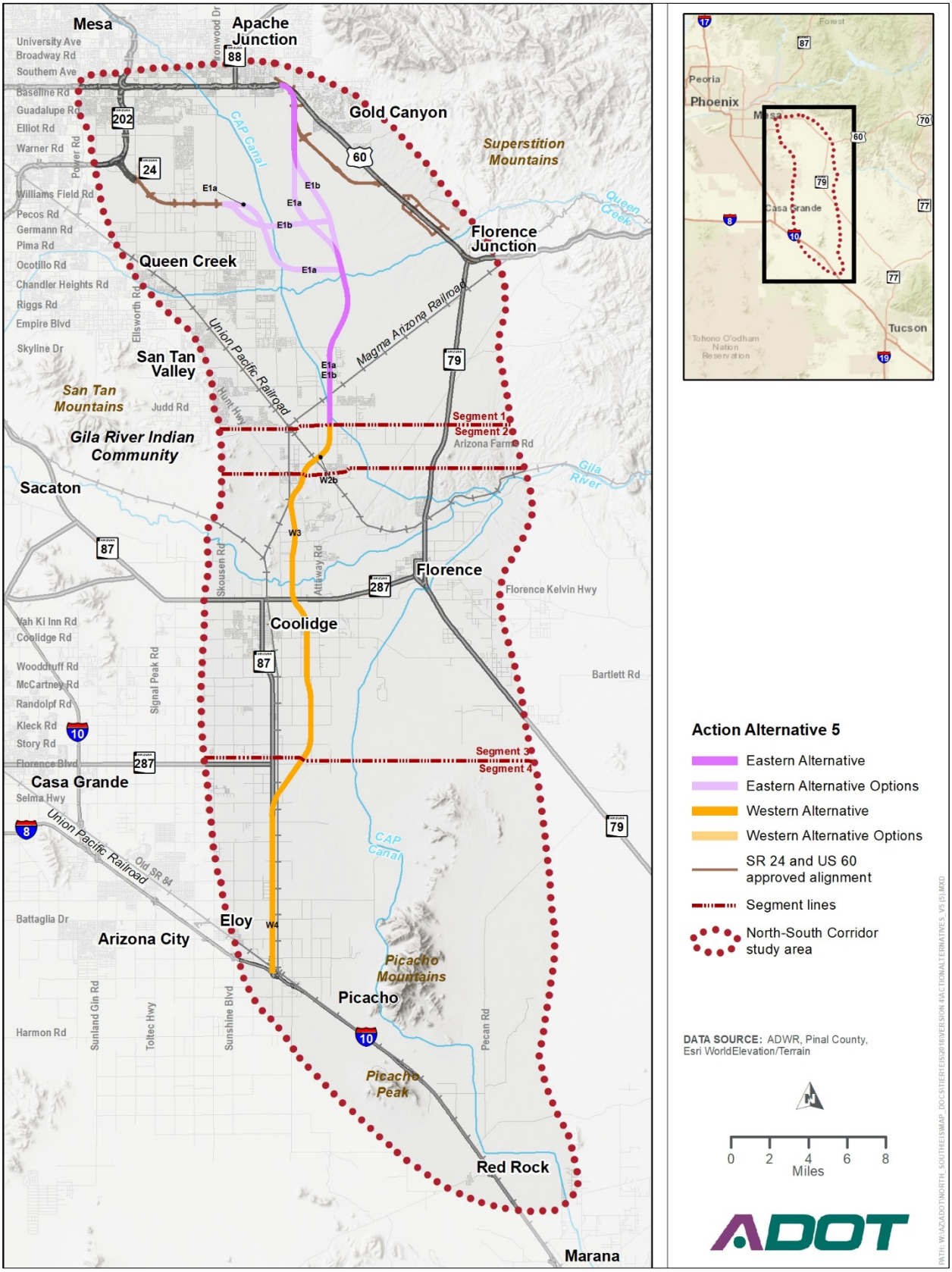


Figure 2.3-6. Alternative 6, with two Segment 1 options and four Segment 3 options

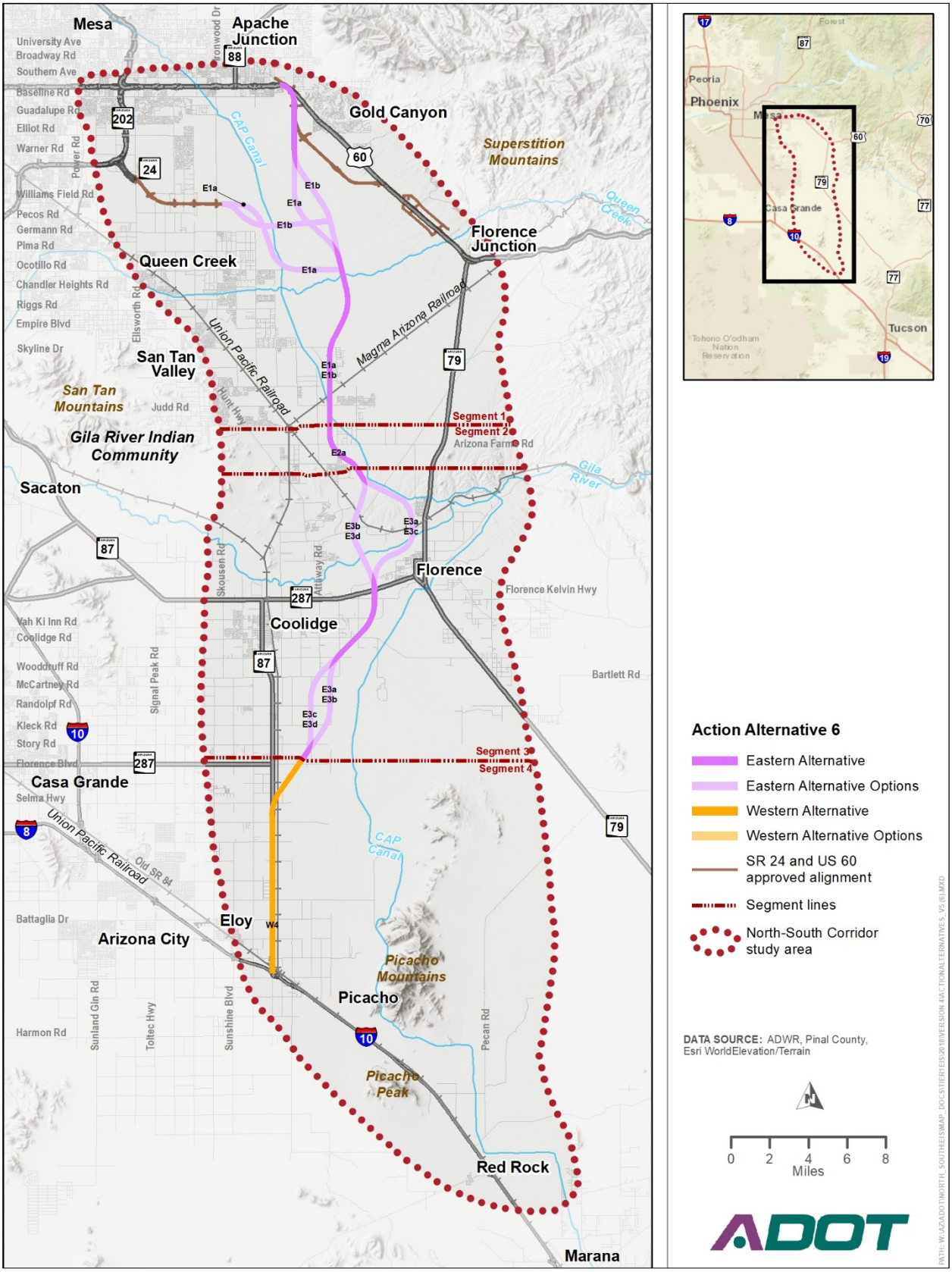


Figure 2.3-7. Alternative 7, with two Segment 1 options and four Segment 3 options

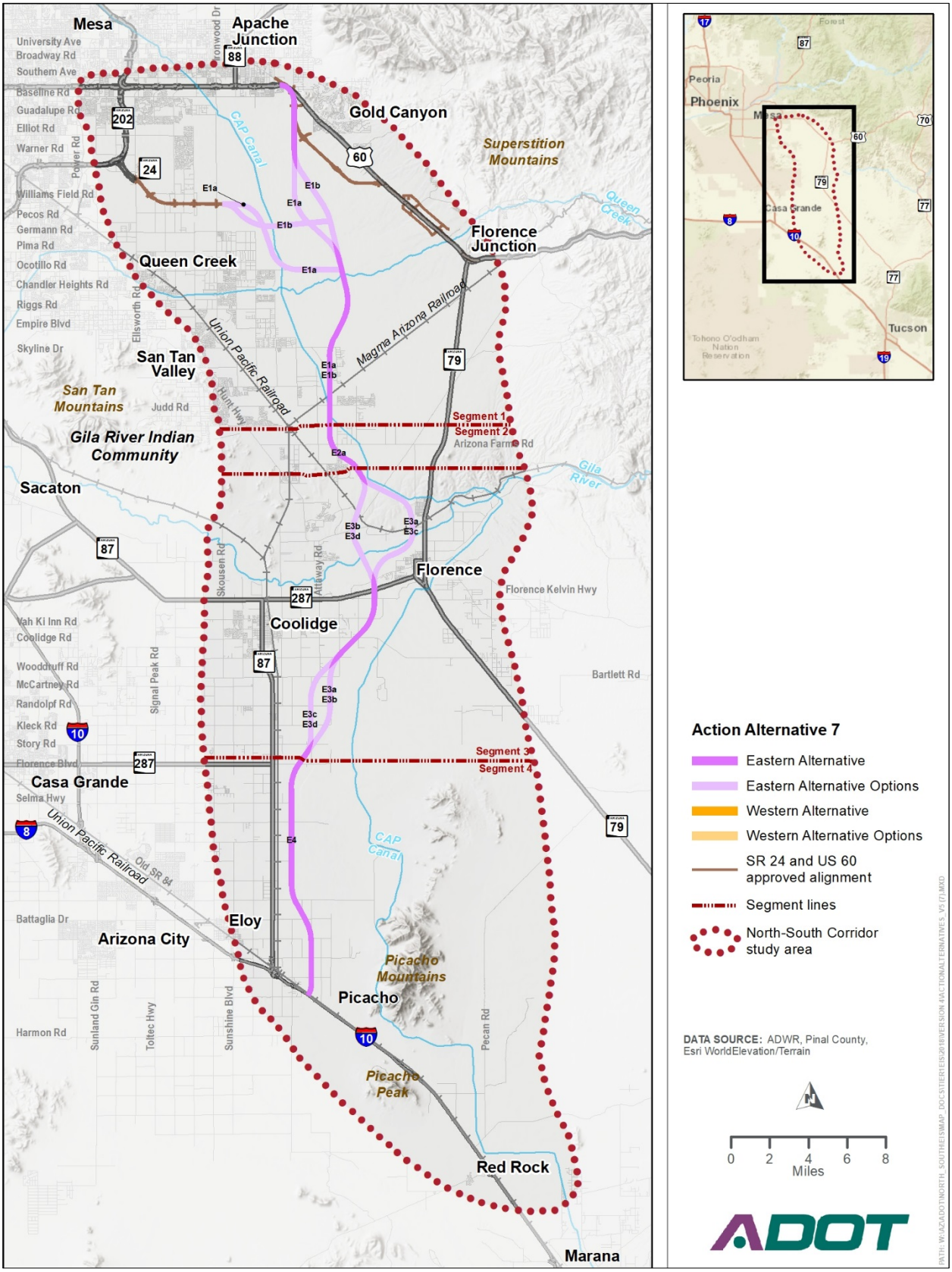
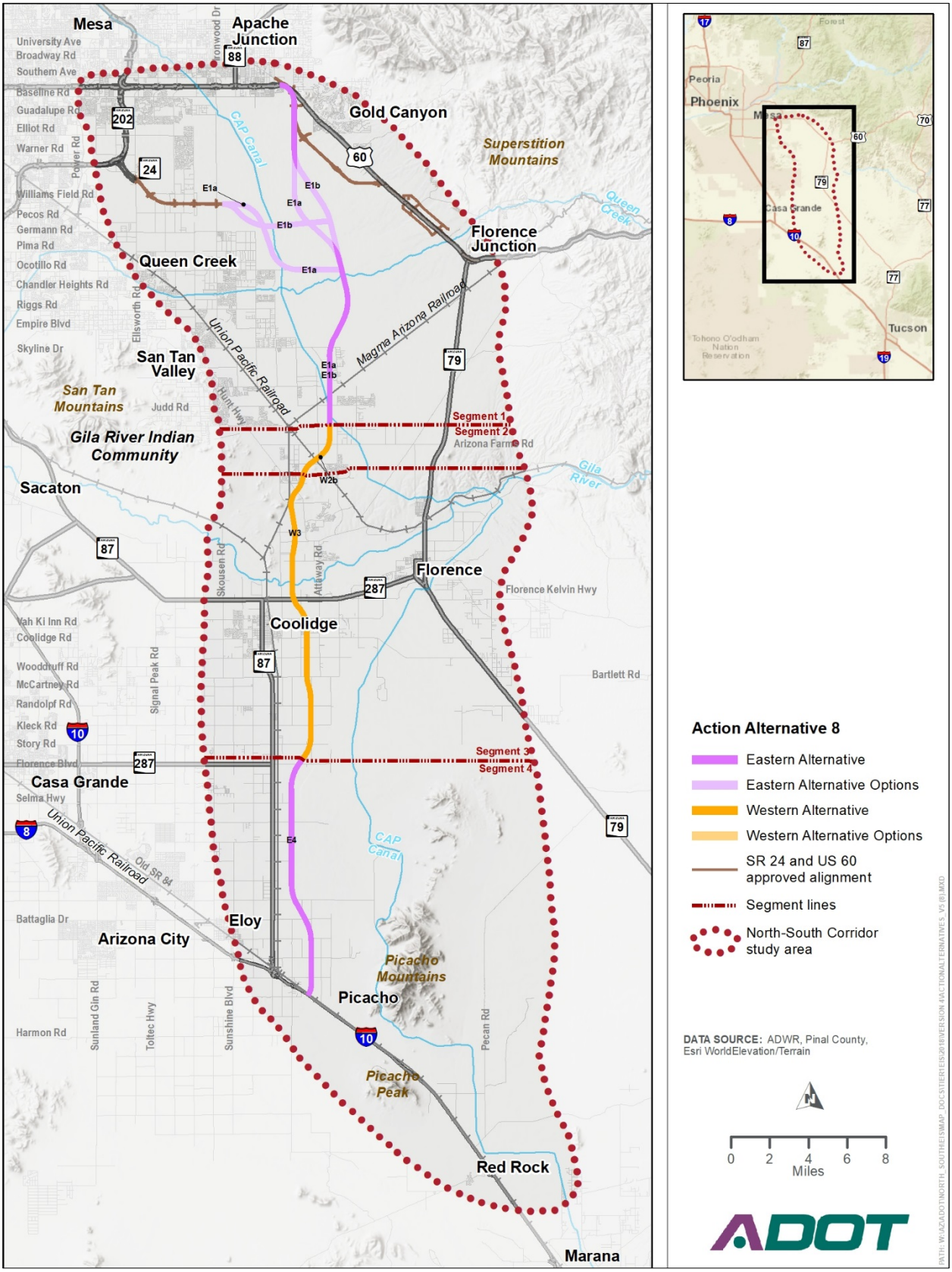


Figure 2.3-8. Alternative 8, with two Segment 1 options



2.3.3 Potential Traffic Interchanges

The location of potential traffic interchanges for the facility would be determined at the Tier 2 study phase. At the Tier 1 EIS phase, the known connections are the proposed Corridor's termini at US 60 in the north and I-10 in the south. Additionally, should an action corridor alternative be selected, the Corridor would include a connection with SR 24.

Pinal County has identified routes of regional significance (see Figure 2.1-1). The County's vision for these routes is to (1) provide continuity across Pinal County and through urban areas, and (2) connect to adjacent counties and state highways. Based on this information, guidance for the spacing of interchanges provided by FHWA, and coordination with affected jurisdictions, the eight full-length action corridor alternatives may have 18 or 19 traffic interchanges, depending on whether the Western Alternative or Eastern Alternative, respectively, is chosen in Segment 1, as indicated in Table 2.3-4.

Table 2.3-4. Potential interchange locations

Interchange	Eastern Alternative	Western Alternative	Comments
Segment 1			
U.S. Route 60	●	●	E1a, E1b, W1a, and W1b Alternatives – system traffic interchange with U.S. Route 60
U.S. Route 60 bypass[a]	●	○	E1a, E1b, and W1b Alternatives – system traffic interchange with proposed U.S. Route 60 bypass
Elliot Road	●	●	E1a, E1b, and W1b Alternatives – Elliot Road access complicated by interchange with proposed U.S. Route 60 bypass
State Route 24	●	●	Eastern Alternatives – two system traffic interchange options (E1a, E1b)
Ocotillo Road	●	●	E1a Alternative – Ocotillo Road access complicated by interchange with State Route 24
Riggs/Combs Road	●	●	E1a, E1b, W1a, and W1b Alternatives – service traffic interchange
Skyline Drive	●	●	E1a, E1b, W1a, and W1b Alternatives – service traffic interchange
Bella Vista Road	●	●	E1a, E1b, W1a, and W1b Alternatives – service traffic interchange
Segment 2			
Arizona Farms Road	●	●	E2a, E2b, W2a, and W2b Alternatives – service traffic interchange
Segment 3			
Hunt Highway	●	●	E3a, E3b, E3c, E3d, and W3 Alternatives – service traffic interchange
State Route 287	●	●	E3a, E3b, E3c, E3d, and W3 Alternatives – service traffic interchange
Martin Road	●	●	E3a, E3b, E3c, E3d, and W3 Alternatives – service traffic interchange
Bartlett Road	●	●	E3a, E3b, E3c, E3d, and W3 Alternatives – service traffic interchange
Kleck Road	●	●	E3a, E3b, E3c, E3d, and W3 Alternatives – service traffic interchange

Table 2.3-4. Potential interchange locations

Interchange	Eastern Alternative	Western Alternative	Comments
Segment 4			
Steele Road	●	●	E4 and W4 Alternatives – service traffic interchange
Selma Highway	●	●	E4 and W4 Alternatives – service traffic interchange
Hanna Road	●	●	E4 and W4 Alternatives – service traffic interchange
Houser Road	●	●	E4 and W4 Alternatives – service traffic interchange
Interstate 10	●	●	E4 and W4 Alternatives – system traffic interchange; southbound movement not anticipated at this time

Notes: ● = service traffic interchange, ● = system traffic interchange, O = alternative and route do not cross
[a] Design of the action corridor alternative and proposed U.S. Route 60 Bypass would be determined through a subsequent Tier 2 study.

2.4 No-Action Alternative

A No-Action Alternative is included for detailed study in accordance with NEPA requirements to compare beneficial and adverse impacts of the action corridor alternatives in the horizon year (2040) with the consequences of not advancing one of the action corridor alternatives. The No-Action Alternative would not construct a north-to-south freeway. However, with the No-Action Alternative, other transportation projects that have been programmed in the applicable regional transportation plan would be constructed. In addition, major land use changes anticipated to occur by 2040 are included in the No-Action Alternative.

2.4.1 Programmed Transportation Projects

The 2040 No-Action Alternative represents the future baseline conditions without a new north-to-south freeway. Improvements to major transportation corridors that are reflected in the 2040 network include:

- 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
- Ocotillo Road – widened from Gantzel Road to Kenworthy Road
- Korsten/Kleck Road widened to four lanes to the action corridor alternative[1]
- Selma Highway widened to four lanes from SR 87 to the action corridor alternative

These projects are transportation improvements that ADOT or local agencies have identified as funded in their 5-year construction programs or as part of their fiscally constrained long-range plans.

2.4.2 Major Land Use Changes

As discussed in Section 1.4, *Need for the Proposed Action*, land use in the study area is projected to transform from predominantly undeveloped and agricultural uses today to predominantly residential uses with a blend of commercial, open space, industrial, and other uses. The No-Action Alternative includes

[1] The Pinal County *Regional Transportation Plan* identifies the eastern project limits as the "North South Corridor," and notes that the actual alignments are currently under study by ADOT.

consideration of a number of large developments planned for the area (these developments are depicted in Section 3.2, *Land Use*, Figure 3.2-5).

These planned developments would reasonably and foreseeably occur independent of a north-to-south freeway being constructed. With implementation of the No-Action Alternative, existing and future residents and businesses would experience degraded mobility in the study area, difficulty in accessing the wide variety of land uses in the horizon year, and increased travel times in and through the study area.

2.5 Transportation Performance of the Alternatives

2.5.1 Methodology

The study considered a number of measures in the evaluation of the action corridor alternatives, including characteristics such as length, access and interchanges, accessibility (measured by travel time between identified locations), and regional performance measures including VMT, congested VMT, VHT, and congested VHT. These and other transportation analysis terms are defined as:

- VMT (vehicle miles traveled): The total number of vehicle miles traveled within a specific geographic area (typically the study area, unless defined otherwise) over a given period of time.
- VHT (vehicle hours traveled): The total vehicle hours spent traveling on the roadway network in a specified area (typically the study area, unless defined otherwise) during a specified time period.
- ADT (average daily traffic): The total volume of traffic during a given time period divided by the number of days in that time period—representative of average traffic in a 1-day time period.
- Vehicle v/c (volume-to-capacity) ratio: The ratio of vehicle demand to the roadway capacity, used as a performance measure to assess travel conditions on regional facilities in the study area.

Performance measures are often reported for the year, which removes factors such as seasonal variation in travel (an important factor when one considers seasonal residents, tourism, and variable school schedules).

This study used the AZTDM2 model to forecast travel throughout the region. AZTDM2 produces travel forecasts for planning horizons up to 30 years in the future based on population and employment growth projections established by the Arizona State Demographer's Office.

AZTDM2 is consistent with FHWA's *Interim Guidance on the Application of Travel and Land Use Forecasting in NEPA* (2010). Additional detail regarding forecasting and modeling may be found in the *Traffic Report, North-South Corridor Study* (Appendix B, *Traffic Information*).

2.5.2 No-Action Alternative

Population and employment projections for the study area for the 2040 build year are presented in Chapter 1, *Purpose and Need*. These projections indicate that by 2040, Pinal County's population is expected to nearly double, and employment is anticipated to increase by 1.7 times the 2015 level. This forecast growth drives regional transportation demand.

2.5.2.1 2040 Forecast Traffic Conditions

Travel demand modeling for the NSCS was performed to forecast 2040 future conditions. The modeling used the AZTDM2. The model, used and maintained by ADOT, uses population and employment projections from the State Office of Employment and Population Statistics. Their application to smaller traffic analysis zones is coordinated with MPOs, councils of governments, and other local agencies.

The 2040 base roadway network was developed using input from stakeholders in the study area including MAG, SCMPO, and CAG. The 2040 base network represents their respective future transportation networks and long-range transportation plans (note that the 2040 AZTDM2 includes a north-to-south access-controlled facility as one of the anticipated improvements—this was removed for modeling the No-Action Alternative). The *Traffic Report, North-South Corridor Study* provides the detailed results of this analysis (see Appendix B, *Traffic Information*). The model evaluated a 2040 No-Action Alternative, representing future conditions without the action corridor alternatives. Improvements on key corridors that are reflected in the 2040 network include:

- SR 287 – widened from two 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
- Ocotillo Road – widened from Gantzel Road to Kenworthy Road
- Selma Highway – widened from SR 87 to Eleven Mile Corner Road
- Kleck Road – extended from the proposed Corridor alignment to I-10

The forecast 2040 volumes for the key corridors are summarized in Table 2.5-1.

With the additional traffic forecast on these facilities, performance is estimated to degrade. All of the state highways in the study area are anticipated to experience increased delay, including:

- SR 79, north of Hunt Highway to the CAP Canal – decreases in performance to LOS D
- SR 87, Vah Ki Inn Road to Martin Road – decreases in performance to LOS F
- SR 287, Christenson Road to Attaway Road, and from Attaway Road to Valley Farms Road – decreases in performance to LOS F

US 60 near Apache Junction is forecast to see a substantial increase in traffic. The 2040 results illustrate that the key corridors will experience substantially more traffic as compared with 2015. The greatest increases in traffic are projected to occur south of Arizona Farms Road.

While the model reflects the currently planned and committed roadway improvements in the study area, additional improvements will likely be planned and programmed in advance of 2040 to respond to increased demand and address these shortcomings. The increased projected traffic, however, indicates the change expected throughout the region, in particular in the central portion of the study area.

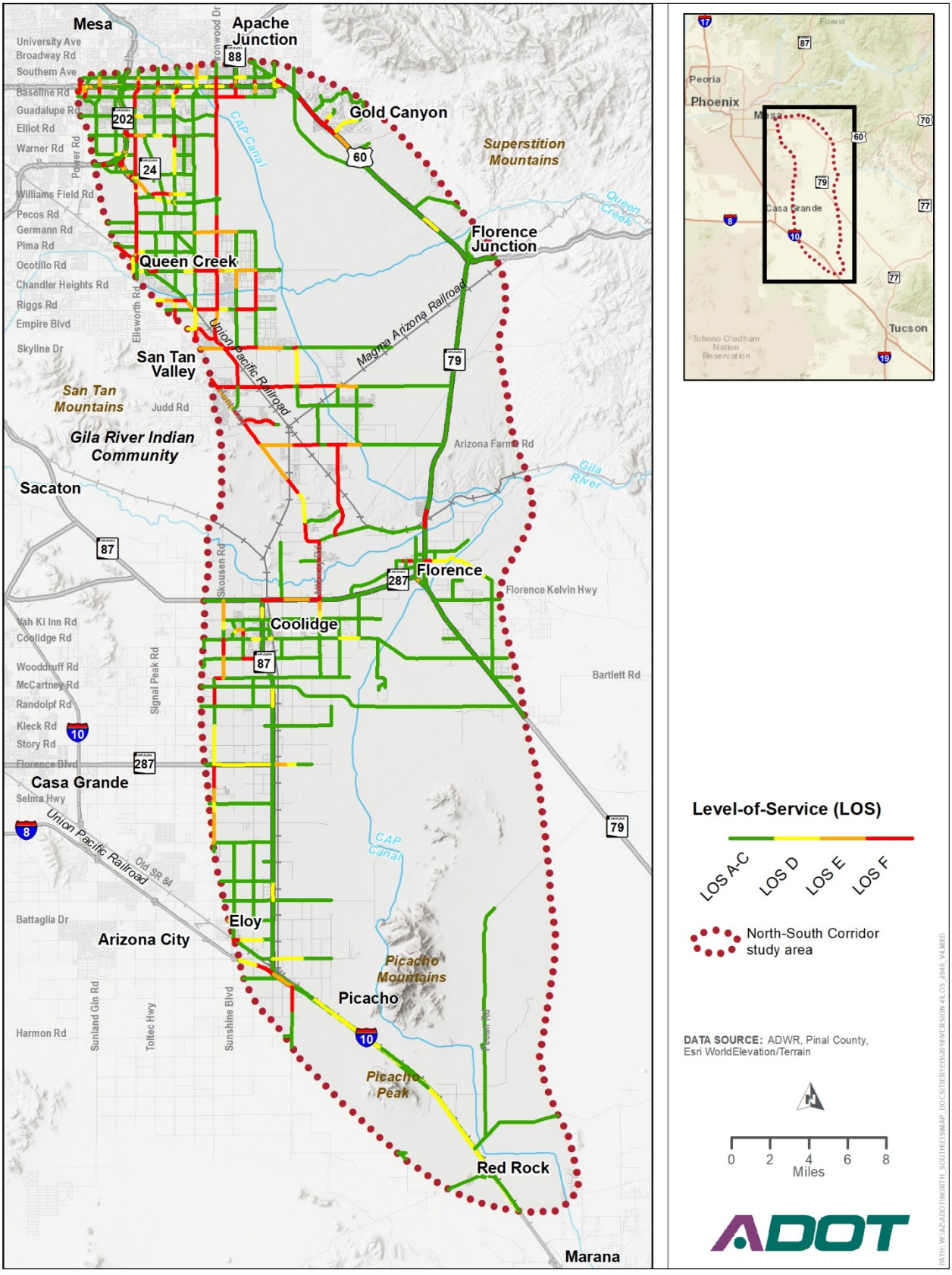
Table 2.5-1. 2040 regionally significant routes with the No-Action Alternative

Regionally significant route	Location	Existing (2015) ADT	2040 No-Action		
			ADT	Volume-to-capacity ratio	LOS
Hunt Highway	Arizona Farms Road to Franklin Road	10,200	37,300	>1.00	F
SR 79	Hunt Highway to Diversion Dam Road	8,300	26,300	0.73	D
Ironwood-Gantzel Road	Baseline Road to SR 24	17,400	26,800	>1.00	F
Schnepf Road	Combs Road to Skyline Drive	6,200	14,200	>1.00	F
Attaway Road	Hunt Highway to SR 287	4,100	25,600	>1.00	F
SR 87 (Arizona Boulevard)	Vah Ki Inn Road to Martin Road	7,500	36,600	>1.00	F
Hunt Highway	Bella Vista Road to Copper Mine Road	29,100	85,600	>1.00	F
Riggs-Combs Road	Signal Butte Road to Schnepf Road	10,100	32,500	>1.00	F
Skyline Drive	Schnepf Road to Quail Run Lane	4,500	13,700	>1.00	F
Bella Vista Road	Gantzel Road to Quail Run Lane	5,900	10,600	>1.00	F
Arizona Farms Road	Hunt Highway to Copper Basin Railway	2,600	6,500	0.65	A–C
Coolidge Avenue	SR 87 to Attaway Road	1,000	6,300	0.62	A–C
SR 287	Christenson Road to Attaway Road	6,600	41,400	>1.00	F
Houser Road	Sunshine Boulevard to Sorrel Road	600	5,500	0.55	A–C
U.S. Route 60	Peralta Road to SR 79	9,600	24,800	0.68	A–C
Ocotillo Road	Rittenhouse Road to Ironwood Drive	19,800	31,200	>1.00	F
SR 287	Attaway Road to Valley Farms Road	5,600	24,200	>1.00	F
Interstate 10	Sunshine Boulevard to SR 87	56,500	96,000	0.79	D

Notes: ADT = average daily traffic, LOS = level of service, SR = State Route
Volume-to-capacity ratio is a measure comparing a road's use with its capacity; a larger number indicates higher use.

Figure 2.5-1 shows the No-Action Alternative study area-wide 2040 performance, in terms of LOS.

Figure 2.5-1. No-Action Alternative study area-wide 2040 performance in level of service



Source: Arizona Department of Transportation (2018)

Table 2.5-2 shows the 2015 overall study area traffic performance compared with the projected 2040 traffic performance. Between 2015 and 2040, VMT would increase by 1.5 times, while VHT would increase by nearly 2.5 times as a result of the nearly four times as many miles of congested roads in the study area.

Table 2.5-2. Traffic performance, 2015 and 2040, with the No-Action Alternative

Condition	Total vehicle miles traveled (daily)	Total vehicle hours traveled (daily)	Miles of congested roads
2015 existing	5,002,600	108,900	47
2040 No-Action Alternative	12,626,500	372,800	185

2.5.2.2 Accessibility

By 2040, it is anticipated that many of the regionally significant routes in the study area will operate at LOS F (see Table 2.5-1). Accessibility to and from destinations throughout the study area will become more difficult. All of the major north-to-south routes will operate at LOS F, with the exception of SR 79, which is anticipated to operate at LOS D through the town of Florence.

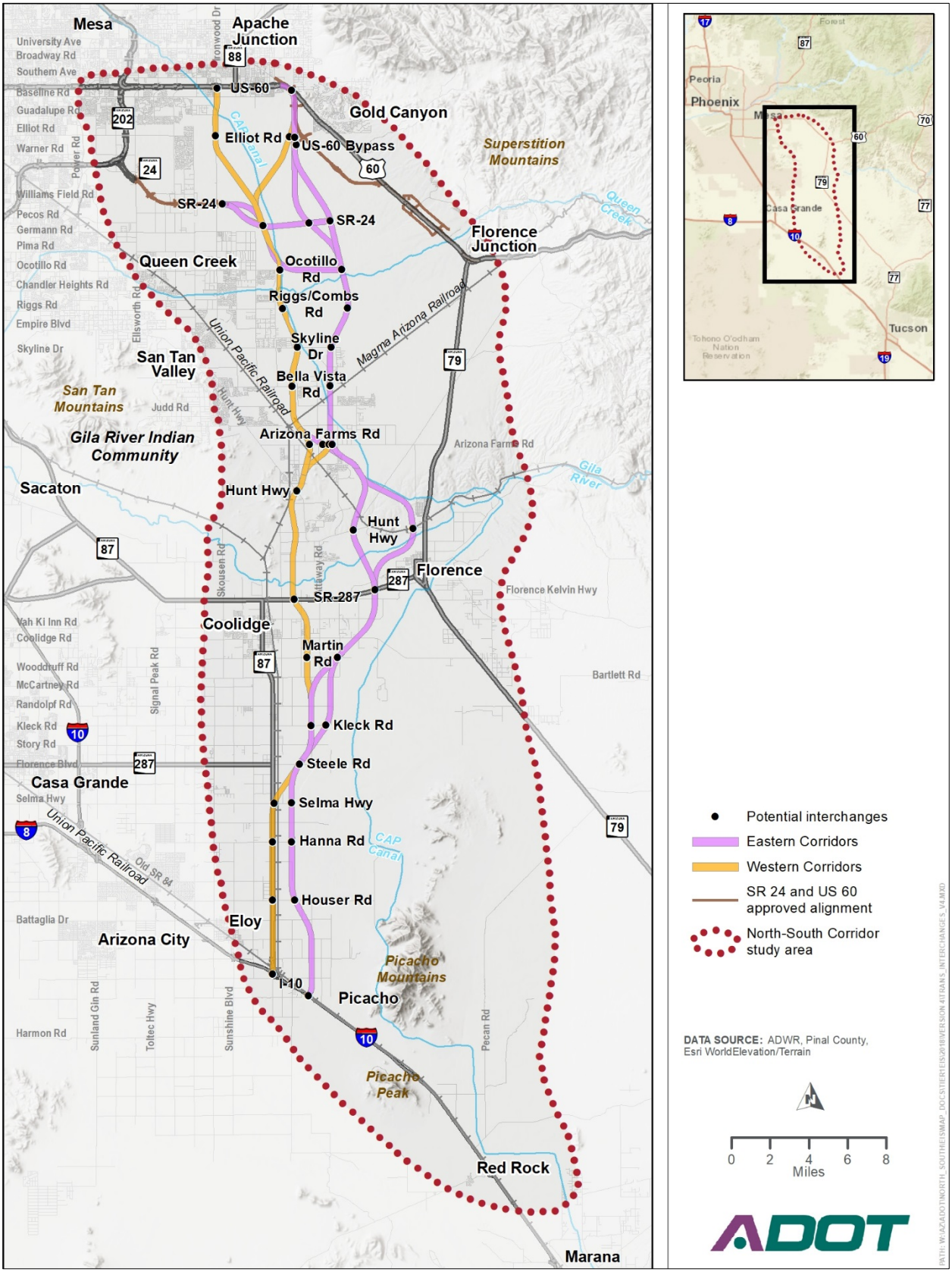
2.5.2.3 Safety

Most the study area consists of undeveloped land lacking improved roadways, or improved rural one-lane roads. Rural roadways have higher crash rates than other types of roadways. Safety issues associated with rural roadways often include nighttime visibility, speeding, animal crossings, and fixed objects next to the roadway. In the event of an incident along I-10, traffic would have to be diverted along local routes through the study area, further compounding congestion in the area.

2.5.3 Action Corridor Alternatives

As currently envisioned, the action corridor alternatives may have interchanges with the local arterial street system, on average, every 2 to 3 miles (Figure 2.5-2). As a result of the limited roadway network planned for the study area, local access to and across the action corridor alternatives would be limited to the arterial crossings where intersections are planned. These potential intersections were previously noted in Table 2.3-4.

Figure 2.5-2. North-South Corridor potential traffic interchange locations



2.5.3.1 Travel Time

As noted in Table 2.5-1, traffic is projected to increase throughout the study area, with the greatest increases anticipated in the area south of Arizona Farms Road. In 2015, a peak period trip between San Tan Valley and downtown Florence took less than half an hour; by 2040, with the No-Action Alternative, that same trip is anticipated to take twice that time.[2]

Table 2.5-3 compares 2040 travel times through the Corridor for the No-Action Alternative and the action corridor alternatives. The volumes are reported as ranges in those instances where the segment options (Segments 1 and 3) would affect through-travel times.

Table 2.5-3. North-South Corridor 2040 average travel time comparison

Condition/ Action corridor alternative	Average travel time (minutes), Eloy to Apache Junction	Travel time savings as compared with 2040 No-Action Alternative
Existing (2018)[a]	65	Not applicable
2040 No-Action	83	Not applicable
1	45	38
2	47–48	35–36
3	48	36
4	45	38
5	46	37
6	49	34
7	49	34
8	46	37

[a] existing travel time derived from Google Maps

Table 2.5-3 shows that in 2040, through travel in the Corridor with any of the action corridor alternatives shows improvement over the No-Action Alternative. Both Alternative 1 (which would provide the most direct through route with a north-to-south length of 48.1 to 48.4 miles, depending on option W1a or W1b, respectively) would provide the greatest through-corridor travel time savings of all the alternatives. Alternative 7 (50.7 to 53 miles long, depending on option E1a or E1b in Segment 1 and option E3a or E3c in Segment 3) is the longest through route and, along with Alternative 6 (49.6 to 52 miles long, depending on option E1a or E1b in Segment 1 and option E3a or E3c in Segment 3), would provide the least through-corridor travel time savings of all the alternatives.

2.5.3.2 Traffic Conditions

Representative evaluation alternatives were modeled to evaluate the performance of the eight full-length action corridor alternatives (and options) using the AZTDM2 model. These representative evaluation alternatives provide the traffic output information used to develop the performance evaluation for the eight full-length action corridor alternatives and their options (more detail on traffic modeling may be found in Appendix B, *Traffic Information*).

[2] 2015 travel time calculated with Google Maps; 2040 travel time determined using Arizona statewide travel demand model

The study area-wide performance results for each of the action corridor alternatives are summarized in Table 2.5-4. The study area was divided based on the Corridor segments (see Section 2.3.1, *Action Corridor Alternatives, by Segment*). Each alternative's performance was compiled based on the action corridor alternative segments from the modeled results.

The results show an increase in study area-wide VMT for each action corridor alternative, compared with the 2040 No-Action Alternative. The increase of the total VMT in the study area roadway network shows traffic being attracted to the Corridor. In addition, a decrease of total VHT is anticipated with construction of both the Corridor and the SR 24 extension. This decrease in VHT with the Corridor indicates that travelers would more efficiently reach their desired destinations with any of the action corridor alternatives.

Table 2.5-4 summarizes annual 2040 ADT volumes for each action corridor alternative, organized by segment. The table shows how the action corridor alternatives would alleviate congestion in the region. While all of the action corridor alternatives would reduce regional congestion,[3] as compared with the No-Action Alternative, overall regional congestion would be lowest with Alternative 3, with an 8 percent reduction of congested VHT compared with the No-Action Alternative. Alternative 7 would improve regional congestion; however, it would have the least impact of the action corridor alternatives, with only a 7 percent reduction of congested VHT compared with the No-Action Alternative.

Table 2.5-5 summarizes the performance of each action corridor alternative in terms of ADT volumes. The table shows the Western Alternatives would attract the highest ADT volumes through the Corridor. Table 2.5-5 shows that for all alternatives, volumes on the action corridor alternatives would be consistently highest at the northern end of the corridor (Segment 1), and would decrease through each subsequent segment (Segments 2, 3, and 4). As a general comparison of alternatives, Alternative 1 would have the highest overall Corridor traffic volume of the action corridor alternatives. Alternative 7 would have the lowest overall Corridor traffic volume.

The action corridor alternatives that provide an eastern connection to US 60 (E1a and E1b) result in as much as 40 percent lower traffic volume at US 60 than those that include a western connection to US 60 (W1a and W1b). The difference decreases progressively through the segments to the south, so that by Segment 4 the greatest difference between E4 and W4 is approximately 20 percent.

Table 2.5-6 summarizes the LOS for segments of the regionally significant routes in the study area, compared with the No-Action Alternative. Table 2.5-6 shows that many of the regionally significant routes through the study area will experience unacceptable LOS in the No-Action condition. All of the action corridor alternatives are shown to improve the LOS on specific corridor segments (Arizona Farms Road, Attaway Road, Ironwood-Gantzel Road, SR 287, SR 79, and SR 87); however, some congestion is still anticipated in the region regardless of the action corridor alternative selected. Some of this modeled congestion is a result of the lack of local roadway network in the model. The traffic model considers future population projections; however, the roadway network in the model future years is based only on what is currently programmed. As development occurs, more local roads would be constructed and as the network is completed, local congestion would likely improve. Future traffic congestion on regionally significant routes would result from increasing travel demand caused by projected population and employment growth, even with construction of the proposed action, because travelers would continue to use the regional routes to reach certain destinations.

[3] Congested VHT in Segment 2 would increase, compared with the No-Action Alternative, but note that actual hours of congestion in this short transition section with the No-Action Alternative are less than 2 percent of overall hours of congestion in the Corridor.

Table 2.5-4. Total area-wide annual traffic performance summary for full-length action corridor alternatives and options (noted as range of values, as appropriate)

Segment	Measure	No-Action	Full-length action corridor alternative							
			1	2	3	4	5	6	7	8
1	VMT (millions)	8.740	9.436–9.477	9.282–9.295	9.282–9.295	9.436–9.477	9.344–9.474	9.344–9.474	9.344–9.361	9.477
	Congested VMT (%)	55	42–44	43	43	42–44	48	48	48–49	48
	VHT (000s)	291.3	260–261	260–261	260–261	260–261	268–270	268–270	268–270	261
	Congested VHT (%)	73	59–60	60–61	60–61	59–60	63–64	63–64	64	63
2	VMT (millions)	0.220	.287–.290	.199	.199	.288–.290	0..297	0.175	0.175	.175-.297
	Congested VMT (%)	61	46-47	61-65	61-65	46-47	37	74	74	37-74
	VHT (000s)	7.200	8.200-8.300	5.700	5.700	8.200-8.300	8.500	6.200	6.200	6.200-8.500
	Congested VHT (%)	61	64-66	70-75	70-75	64–66	49	79	79	49-79
3	VMT (millions)	1.442	1.576–1.578	1.626–1.645	1.586–1.645	1.576–1.578	1.457	1.586–1.645	1.586	1.457-1.586
	Congested VMT (%)	55	27	30–32	30-36	27	27	30–36	36	27-36
	VHT (000s)	40.900	36.200-36.300	37.500–38.600	36.9–38.6	36.2-36.3	35.5	36.9–38.6	36.90	35.6-36.9
	Congested VHT (%)	61	33	37–38	37–43	33	37	37–43	43	37-43
4	VMT (millions)	2.235	2.345	2.320–2.339	2.304	2.334	2.345	2.320-2.339	2.304	2.304-2.334
	Congested VMT (%)	1	1	1	1	1	1	1	1	1
	VHT (000s)	33.800	35.8	35.3–35.7	35.1	35.7	35.8	35.3-35.7	35.1	35.1-35.7
	Congested VHT (%)	1	2	1–2	2	2	2	1-2	2	2
Total	VMT (millions)	12.637	13.644–13.690	13.427–13.478	13.370–13.443	13.633–13.680	13.443–13.573	13.424–13.633	13.408–13.426	13.413-13.694
	Congested VMT (%)	46	33-35	34–35	35	34-35	38	39	39	38
	VHT (000s)	373.000	340–342	339–341	338–341	340–342	347–349	346–350	346–348	338-343
	Congested VHT (%)	65	50	52	52–53	50–51	54–55	55	56	54-55

Notes: VHT = vehicle hours traveled, VMT = vehicle miles traveled. Cells with a range of values are a result of the available alternative options. Results were derived from modeled alternatives as described in Appendix B, *Traffic Information*.

Table 2.5-5. North-South Corridor performance comparison with full-length action corridor alternatives

Location		Full-length action corridor alternative average daily traffic volume (000s)							
		1	2	3	4	5	6	7	8
Segment 1	US 60 to Elliot Road	42.8–45.0	44.0–44.4	44.0–44.4	42.8–45.0	25.2–30.0	25.2–30.0	25.2–28.3	25.2–30.0
	Elliot Road to SR 24	39.0–49.4	46.8–47.7	46.8–47.7	39.0–49.4	18.0–25.4	18.0–25.4	18.0–23.4	18.0–25.4
	SR 24 to Ocotillo Road	69.2–70.9	64.2–65.9	64.2–65.9	69.2–70.9	18.0–47.2	18.0–47.2	18.0–42.7	18.0–47.2
	Ocotillo Road to Riggs/Combs Road	54.1	46.8–48.5	48.5–46.8	54.1	38.2–41.9	37.0–41.9	37.0–38.2	37.0–41.9
	Riggs/Combs Road to Skyline Drive	58.3–59.1	48.4–50.2	48.4–50.2	58.3–59.1	37.3–42.1	36.7–42.1	36.7–37.3	36.7–42.1
	Skyline Drive to Bella Vista Road	60.8–61.1	49.8–51.8	49.8–51.8	60.8–61.1	38.5–44.4	38.0–44.4	38.0–38.5	38.0–44.4
	Bella Vista Road to Arizona Farms Road	50.4–50.7	29.6–31.3	29.6–31.3	50.4–50.7	25.3–31.8	25.3–31.8	25.3	25.3–31.8
Segment 2	Arizona Farms Road to Hunt Highway	39.8–40.0	29.6–31.3	29.6–31.3	39.8–40.0	31.8	25.3	25.3	31.8
Segment 3	Hunt Highway to SR 287	39.6–39.9	18.6–19.9	15.1–19.9	39.6–39.9	38.8	15.1–19.9	15.1	38.8
	SR 287 to Bartlett Road (Martin Road)	21.9	17.8–21.4	15.7–21.4	21.9	19.2	15.7–21.4	15.7	19.2
Segment 4	Bartlett Road (Martin Road) to Kleck Road	20.0	18.6–21.8	16.1–21.8	20.0	18.5	16.1–21.8	16.1	18.5
	Kleck Road to Steele Road	19.2.	17.7–19.8	15.2	17.6	19.2	17.7–19.8	15.2	17.6
	Steele Road to Selma Highway	9.9.	9.1–9.9	6.6	8.1	9.9	9.1–9.8	6.6	8.1
	Selma Highway to Hanna Road	12.0–12.1.	11.9–12.6	6.4	7.5	12.0–12.1	11.9–12.6	6.4	7.5
	Hanna Road to Houser Road	10.5–11.3	10.5–11.3	5.5	6.7	5.3–11.1	10.5–11.3	5.5	6.7
	Houser Road to I-10	4.9.–5.0	3.9–4.6	2.5	3.9	4.9–5.0	3.9–4.6	2.5	3.9

Notes: SR = State Route, US 60 = U.S. Route 60. Cells with a range of values are a result of the available alternative options. Results were derived from modeled alternatives as described in Appendix B, *Traffic Information*.

Table 2.5-6. 2040 level of service summary for regionally significant routes

Regionally significant route	Location	No-Action LOS	Full-length action corridor alternative LOS							
			1	2	3	4	5	6	7	8
Arizona Farms Road	Hunt Highway to Copper Basin Railroad	F	F	E	E	F	D	F	F	D
Attaway Road	Hunt Highway to State Route 287	F	A–C	E	E	A–C	A–C	E	E	A–C
Bella Vista Road	Gantzel Road to Quail Run Lane	F	F	F	F	F	F	F	F	F
Coolidge Avenue	State Route 87 to Attaway Road	A–C	A–C	A–C	A–C	A–C	A–C	A–C	A–C	A–C
Hunt Highway	Belle Vista Road to Copper Mine Road	F	F	F	F	F	F	F	F	F
	Arizona Farms Road to Franklin Road	F	F	F	F	F	F	F	F	F
Interstate 10	Sunshine Boulevard to State Route 87	D	D	D	D	D	D	D	D	D
Ironwood-Gantzel Road	Baseline Road to State Route 24	F	A–C	A–C	A–C	A–C	D–E	D–E	D–E	D–E
Ocotillo Road	Rittenhouse Road to Ironwood Drive	F	F	F	F	F	F	F	F	F
Riggs-Combs Road	Signal Butte Road to Schnepf Road	F	F	F	F	F	F	F	F	F
Schnepf Road	Combs Road to Skyline Drive	F	F	F	F	F	F	F	F	F
Selma Highway	Eleven Mile Corner Road to State Route 87	A–C	A–C	A–C	A–C	A–C	A–C	A–C	A–C	A–C
Skyline Drive	Schnepf Road to Quail Run Lane	F	F	F	F	F	F	F	F	F
State Route 287	Attaway Road to Valley Farms Road	F	F	F	F	F	F	F	F	F
	Christenson Road to Attaway Road	F	D	D	D–E	D–E	D	D	D–E	D–E
State Route 79	Hunt Highway to Diversion Dam Road	D	A–D	A–D	A–D	A–D	A–D	A–D	A–D	A–D
State Route 87 (Arizona Boulevard)	Vah Ki Inn Road to Martin Road	F	D	D–E	D–E	D	D	D–E	D–E	D
U.S. Route 60	Peralta Road to State Route 79	A–C	A–C	A–C	A–C	A–C	A–C	A–C	A–C	A–C

Notes: Cell color represents level of service (LOS), where LOS C or better is represented by green, LOS D and E are represented by orange, and LOS F is represented by red.
LOS values are derived from the Arizona statewide travel demand model representative model runs; ranges are indicative of varied results determined by the various alternative options.

The results show that additional capacity improvements to the existing roadway network are necessary to accommodate the anticipated traffic throughout the region. Although these additional roadway projects are not planned and committed at this time (those that are planned and committed are discussed in Chapter 4, *Indirect and Cumulative Impacts*), it is anticipated that with the development that is projected to occur, additional roadway improvement projects will be completed. Were an action alternative selected, these projects would provide improved access to the facility. The Corridor would be able to accommodate significantly more volume. A common generalized reference for annual ADT for a six-lane freeway operating in an urbanized environment at LOS C is 93,000. The highest volume reported in Table 2.5-5 for any of the alternatives is approximately 71,000 (Alternative 1, between SR 24 and Ocotillo Road).

All of the action corridor alternatives would remove non-localized traffic from key roadways in the study area, resulting in less traffic congestion and decreased travel times because the action corridor alternatives would provide a more direct route from US 60 in Apache Junction to I-10 in Eloy.

2.5.3.3 Access

At the Tier 1 phase, it is possible to anticipate some access issues that may arise if a preferred action corridor alternative is selected. Table 2.3-4 identifies the locations of potential traffic interchanges. Should an action corridor alternative be selected, a full-access facility with grade separation may be implemented in phases. At-grade intersections could be temporarily allowed, as determined through a Tier 2 implementation plan. It is anticipated that the section line roads that intersect the proposed facility may eventually be grade-separated (depending on the specific phasing and implementation plan). Quarter-section and local streets would typically not be grade-separated, and this condition may result in blocking access to properties accessed by these routes. At the Tier 2 phase, access would be evaluated and efforts would be made to maintain access to existing development.

Segment 1

At the US 60 system traffic interchange at the northern terminus of the proposed action, the E1a, E1b, and W1b Alternatives share a footprint. In the southwestern quadrant of this connection, access to the Dolce Vita residential development is from the west and would not be affected. Depending on the system traffic interchange configuration, access to US 60 from Goldfield Road may be affected. The area to the south is entirely undeveloped, and circulation patterns and access would be developed to accommodate the proposed action.

The area of the E1a and E1b Alternatives is undeveloped south to Skyline Drive, and circulation patterns and access would be developed during Tier 2 studies to accommodate the proposed action.

At the US 60 system traffic interchange, the W1a Alternative would be aligned with Ironwood Drive, a major north-to-south arterial serving traffic traveling to and from the San Tan Valley area. This route experiences considerable local through traffic, and development abutting Ironwood Drive has direct access to the road. The area east of Ironwood Drive is largely undeveloped, and circulation patterns and access would be developed to accommodate the proposed action. Local access may be difficult to provide where the W1a Alternative parallels the CAP Canal, complicating access to properties between the canal and the proposed action.

Segment 2

The largely undeveloped nature of Segment 2 means that circulation patterns and access would be developed to accommodate the proposed action.

Segment 3

Although development plans exist for much of this area, the area of the Eastern Alternatives, north of the Gila River, is entirely undeveloped. Traffic circulation patterns and access would be developed at the Tier 2 phase to accommodate the proposed action. The E3a and E3c Alternatives follow the CAP Canal. The action corridor alternatives crossing Hunt Highway would be just over 0.5 mile west of the Hunt Highway intersection with SR 79. The E3b and E3d Alternatives traverse the conceptual circulation plan for the Merrill Ranch master-planned community.

South of SR 287, much of the land in the area of the E3a, E3b, E3c, and E3d Alternatives is active agricultural land, and circulation patterns and access would be developed to accommodate the proposed action.

The W3 Alternative in Segment 3 traverses largely undeveloped and agricultural land north of the Gila River, although access along Nafziger Road to an active aggregate mine on the northern bank of the Gila River would be affected. Where the W3 Alternative merges with the E3d and E3c Alternatives, access to properties along the section-line Fast Track Lane would be affected.

Segment 4

South of Steele Road, the E4 Alternative is aligned with Vail Road. South of Houser Road, the E4 Alternative shifts 1 mile east. Should the E4 Alternative be selected, a Tier 2 phase project would evaluate methods to acquire or restore access to parcels east of the E4 Alternative.

South of Steele Road, the W4 Alternative crosses UPRR before following the SR 87 alignment 8.5 miles to the south at the system traffic interchange with I-10. This alignment is approximately 0.25 mile west of UPRR; access to parcels between the ROW and railroad would need to be evaluated and addressed at the Tier 2 phase. An alignment along SR 87 would also affect access to businesses along SR 87 just north of I-10.

2.5.3.4 Accessibility

Jurisdictions throughout the Corridor have identified access to a north-to-south corridor as important to implementing their adopted plans. A measure of the accessibility of the Corridor may be derived by assessing the access each of the affected jurisdictions would have to the facility (where access is measured by the travel time between the action corridor alternative and a common central location). For each of the jurisdictions directly affected by the action corridor alternatives, the municipal offices were used as a central location, and the time of travel from the action corridor alternative to the town center is reported. The travel times were derived from the model runs, and they measure the 2040 evening peak period travel time from the action corridor alternative to the jurisdiction’s current municipal offices.

Apache Junction

Travel time between the action corridor alternatives and the City of Apache Junction office at 300 East Superstition Boulevard was determined for 2040. For this destination, the difference in travel times between the action corridor alternatives is nominal.

Florence

Travel time between the action corridor alternatives and the Town of Florence office at 775 North Main Street was determined for 2040. Travel times for the Eastern Alternatives (E3a, E3b, E3c, and E3d) range from 5 to 7 minutes, whereas the W3 Alternative travel time for northbound travelers is 12 minutes and for southbound travelers is 14 minutes.

Coolidge

Travel time between the action corridor alternatives and the City of Coolidge office at 130 West Central Avenue was determined for 2040. Travel times for the Eastern Alternatives (E3a, E3b, E3c, and E3d) to Coolidge range from 9 minutes northbound to 13 minutes southbound. Travel time for the W3 Alternative to Coolidge is 6 minutes.

Eloy

Travel time between the action corridor alternatives and the City of Eloy office at 628 North Main Street was determined for 2040. Travel time to the City of Eloy office for both the E4 and W4 Alternatives is approximately 8 minutes.

These examples illustrate a measure of accessibility to the jurisdictions through which the Corridor passes. The difference in accessibility (as measured by the travel time that each of the affected jurisdiction's municipal offices would have to the action corridor alternatives) is most pronounced in Segment 3 (affecting the City of Coolidge and Town of Florence), where the greatest east-to-west separation between action corridor alternatives occurs.

2.5.3.5 Safety

It is anticipated that developing an access-controlled facility through the area would improve safety by reducing local congestion and by separating through trips from local trips.