

Summary

The Arizona Department of Transportation (ADOT), acting as the lead agency, is considering the construction and operation of a north-to-south transportation corridor in Pinal County, Arizona. If an action alternative is selected and constructed, the facility would improve connectivity and accessibility and introduce additional roadway capacity to support projected population and employment growth in Pinal County and across the larger region. The Federal Highway Administration (FHWA) participated as a joint lead agency in planning and preparing technical and environmental documents prior to the signing of a Memorandum of Understanding for the Surface Transportation Project Delivery Program (23 United States Code § 327).

The North-South Corridor Study (NSCS) Tier 1 Draft Environmental Impact Statement (DEIS, Project No. FHWA-AZ-EIS-19-02-D) has been prepared to evaluate the potential short-term and long-term impacts associated with proposed action corridor alternatives. These action corridor alternatives were developed based on input from the public; coordination with local, regional, state, and federal agencies and tribes; and findings from previous studies. The action corridor alternatives carried forward for detailed analysis in this Tier 1 DEIS best meet the purpose and need for the proposed action.

This summary chapter provides a brief overview of this Tier 1 DEIS. Table S-1 lists the main topics.

Table S-1. Summary chapter organization

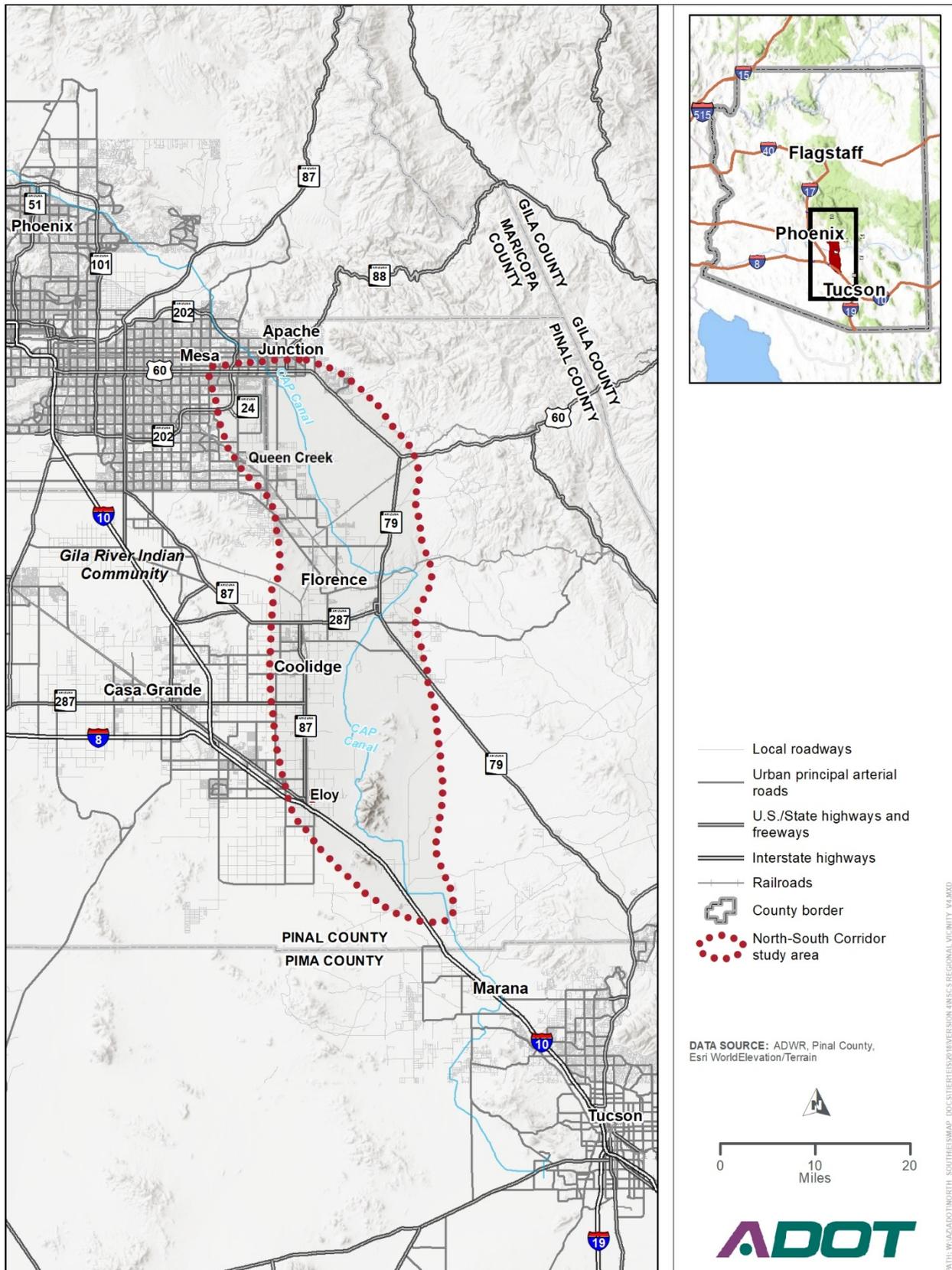
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Given the size of the North-South Corridor (Corridor) and the need to identify future funding to build the Corridor, this study is using a “tiered” approach. This Tier 1 DEIS analyzes the proposed action on a broad scale. During subsequent Tier 2 studies, additional National Environmental Policy Act (NEPA) documents would be prepared to analyze individual projects in greater detail, with the goal of advancing construction of certain portions of the Corridor. According to the Transportation Research Board (2009), a tiered approach may be used to address the complex NEPA process associated with lengthy corridors and to facilitate corridor preservation when construction would not occur for many years.

Study Area Description

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

Figure S-1. North-South Corridor regional location



Scoping and Study Background

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*). The NSCS scoping effort engaged federal, state, local, and tribal governments and members of the public to facilitate the early identification of concerns, potential impacts, relevant effects of past actions, and possible alternative actions.

The scoping process was open to agencies and the public to identify the range—or scope—of issues to be addressed during engineering, planning, and environmental studies. The agency and public scoping meetings occurred in October 2010 at locations throughout the study area. Additional information regarding the scoping phase is found in this Tier 1 DEIS in Section 5.1.2, *Scoping Phase (2010)*.

For the NSCS, the scoping period began with the publication of a Notice of Intent to complete a project-level environmental impact statement (EIS) in the *Federal Register* on September 20, 2010. Between October 2010 and early 2016, the NEPA EIS phase of the NSCS progressed with the development and evaluation of alternatives, as documented in the *Alternatives Selection Report (ASR)*. Subsequent environmental technical analyses and conceptual design work supported a project-level DEIS. Throughout these efforts, ADOT and FHWA held regular meetings with cooperating agencies, participating agencies, tribes, and many key stakeholders. The agencies also conducted public meetings for the ASR and numerous individual stakeholder meetings as the study advanced. In 2016, ADOT and FHWA converted the project-level NEPA EIS process to a Tier 1-level EIS, in accordance with Council on Environmental Quality regulations (40 Code of Federal Regulations § 1502.20). A revised Notice of Intent was published in the *Federal Register* on October 3, 2016. This Tier 1 EIS process will be followed by detailed project-level (Tier 2) environmental reviews by ADOT for specific alternatives, incorporating and referencing the decisions and analyses conducted as part of this Tier 1 review.

Purpose and Need

This section describes the purpose of and need for the proposed action—a new north-to-south transportation corridor in Pinal County. The purpose and need is discussed in detail in this Tier 1 DEIS in Chapter 1, *Purpose and Need*.

Purpose of the Proposed Action

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

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

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

- Enhance the transportation network to accommodate existing and future populations – Consistent with state, regional, and municipal planning initiatives, the new corridor would accommodate anticipated growth in the study area and across the larger region.

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

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

Need for the Proposed Action

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

Insufficient infrastructure to accommodate projected population and employment growth and to support local, regional, and statewide planning efforts. As shown in Table S-2, population in Pinal County is expected to nearly double (an increase of 97 percent), and employment is expected to increase by a factor of 2.8 (an increase of 178 percent) by 2040. Local governments and Central Arizona Governments (the regional planning agency) anticipate stress on the local transportation network’s capacity, and local land use and transportation plans all call for a major north-to-south transportation facility in the study area to accommodate anticipated growth. An improved and expanded north-to-south transportation system is needed to provide the transportation infrastructure shown in statewide, regional, and local planning documents.

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

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

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

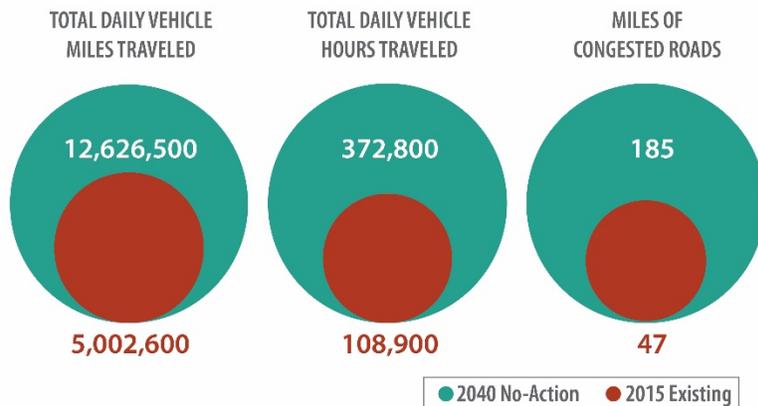
^a includes all of Maricopa, Pinal, and Pima Counties

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

Figure S-2 illustrates the projected increase in vehicle miles traveled (VMT) and vehicle hours traveled (VHT) in the study area by 2040.¹ An integrated, multimodal transportation system requires additional unfragmented, north-to-south capacity in the study area to accommodate these future needs. Without additional capacity, delays and congestion would hamper the efficiency of existing and planned roadway networks.

¹ VMT is the total number of vehicle miles traveled within a specific geographic area (typically the study area) over a given period of time. VHT is the total vehicle hours spent traveling on the roadway network in a specified area (also typically the study area) during a given time period.

Figure S-2. Existing and 2040 traffic projections



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

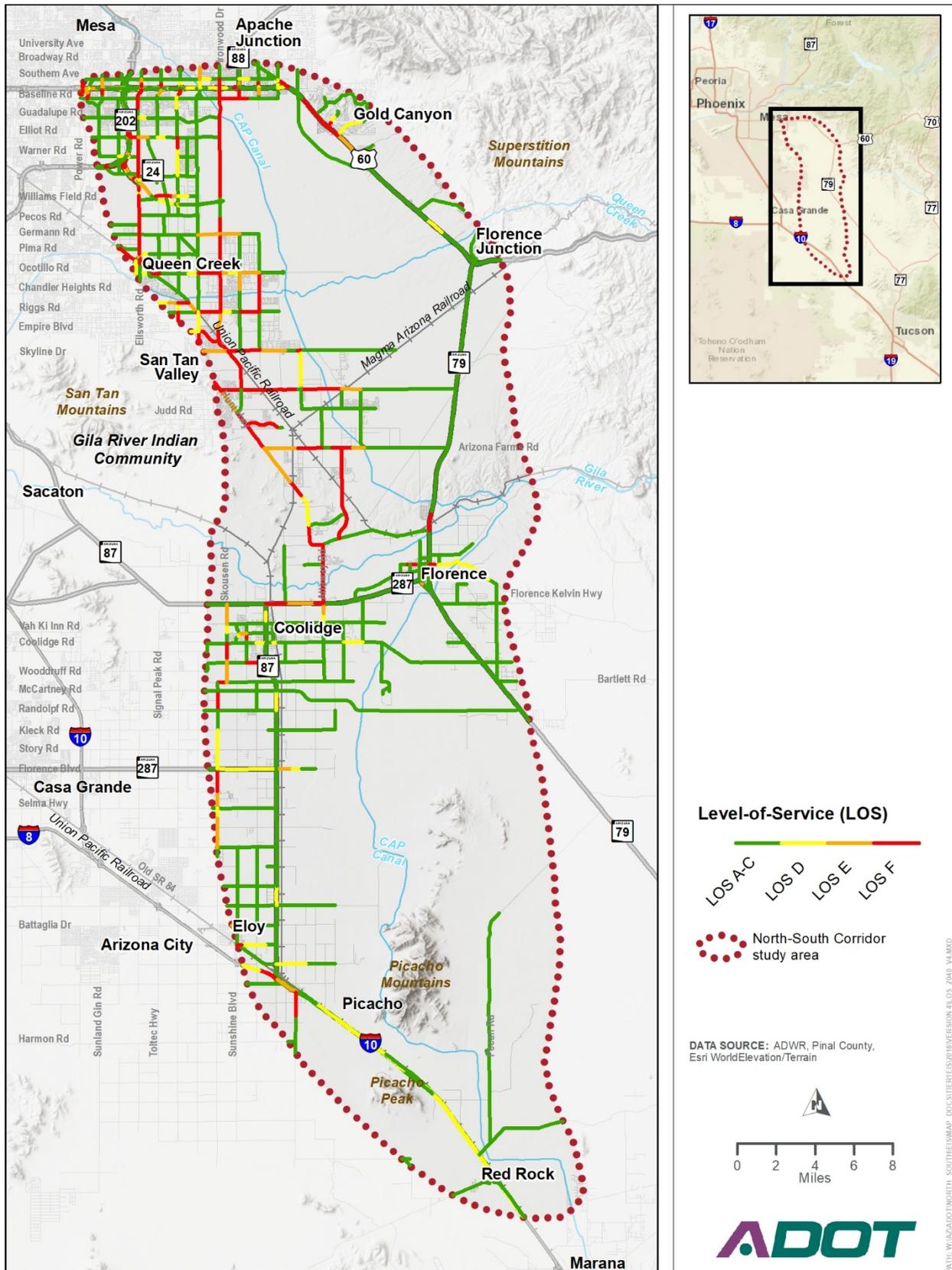
Lack of transportation system connectivity and need to enhance system linkages. A continuous north-to-south transportation corridor would provide a critical missing link in the southeastern Maricopa County and Pinal County transportation system. Currently, travelers heading north from the Tucson area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

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

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

Limited alternatives to avoid congestion on I-10. I-10 provides the primary connection between Phoenix and Tucson. Today, portions of I-10 in the study area and across the larger region regularly experience highly congested travel. There are no alternative routes through this area of Pinal County that provide a direct route. Traffic diverted from I-10 because of congestion or closure must mix with local traffic on rural state highways through the area, contributing to local traffic. By 2040, the study area will have 185 miles of congested roadways (Figure S-3).

Figure S-3. Study area forecast conditions (2040) level of service



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

Without unfragmented, north-to-south transportation alternatives to I-10, congestion is anticipated to worsen with the study area's projected growth. It is anticipated that during the peak evening travel period, I-10 would operate at a failing level of service (LOS)² by 2040 (LOS is described in detail in this Tier 1 DEIS in Section 1.4.4, *Existing and Forecast Travel Demand*). A continuous north-to-south transportation corridor connecting southeastern Maricopa County—by way of US 60, SR 202L, and SR 24—with I-10 would provide the necessary congestion relief to enhance mobility on I-10.

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

Other Desired Outcomes of the Proposed Action

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

- Protecting and enhancing the natural environment along the Corridor:
 - alignments developed in Tier 2 studies that allow for continued wildlife movement
 - limited disruption of sensitive wildlife habitat areas to reduce the possibility for growth-inducing impacts
- Supporting local and regional land use plans and preservation goals:
 - alternatives developed in the Tier 1 study that considered regional and local adopted plans
 - alignments developed in Tier 2 studies that allow for the protection of identified open space, agricultural, or other undeveloped land
 - alternatives developed in the Tier 1 study that avoided identified culturally sensitive properties
 - avoidance of culturally sensitive properties during Tier 2 studies to the extent feasible and practicable
- Supporting equitable economic opportunities:
 - provide access to employment, educational, and civic centers and institutions within the study area and the larger Phoenix metropolitan area
 - accommodation of right-of-way (where appropriate and feasible) for intercity passenger rail serving the local population and greater region, including the Tucson and Phoenix metropolitan areas
- Complementing other planned transportation improvements along new and established corridors in the study area:
 - maximization of efficiency of Corridor mobility through coordination with other ongoing and planned projects
 - alignments developed in Tier 2 studies that integrate with the most current transportation and land use planning to respond to growth and not induce growth

² LOS is a qualitative measure used to describe traffic conditions. It is measured on a scale ranging from A to F, with LOS A representing the best performance and LOS F indicating the worst.

Other Major Actions in the Study Area

Within the study area, several other transportation improvement projects along key corridors are planned within the 2040 time frame of the proposed action:

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

Alternatives Considered

Eight full-length action corridor alternatives (and options) are studied in detail in this Tier 1 DEIS. 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.

The following sections describe the early alternatives documented in the 2014 ASR and the action corridor alternatives discussed in this Tier 1 DEIS.

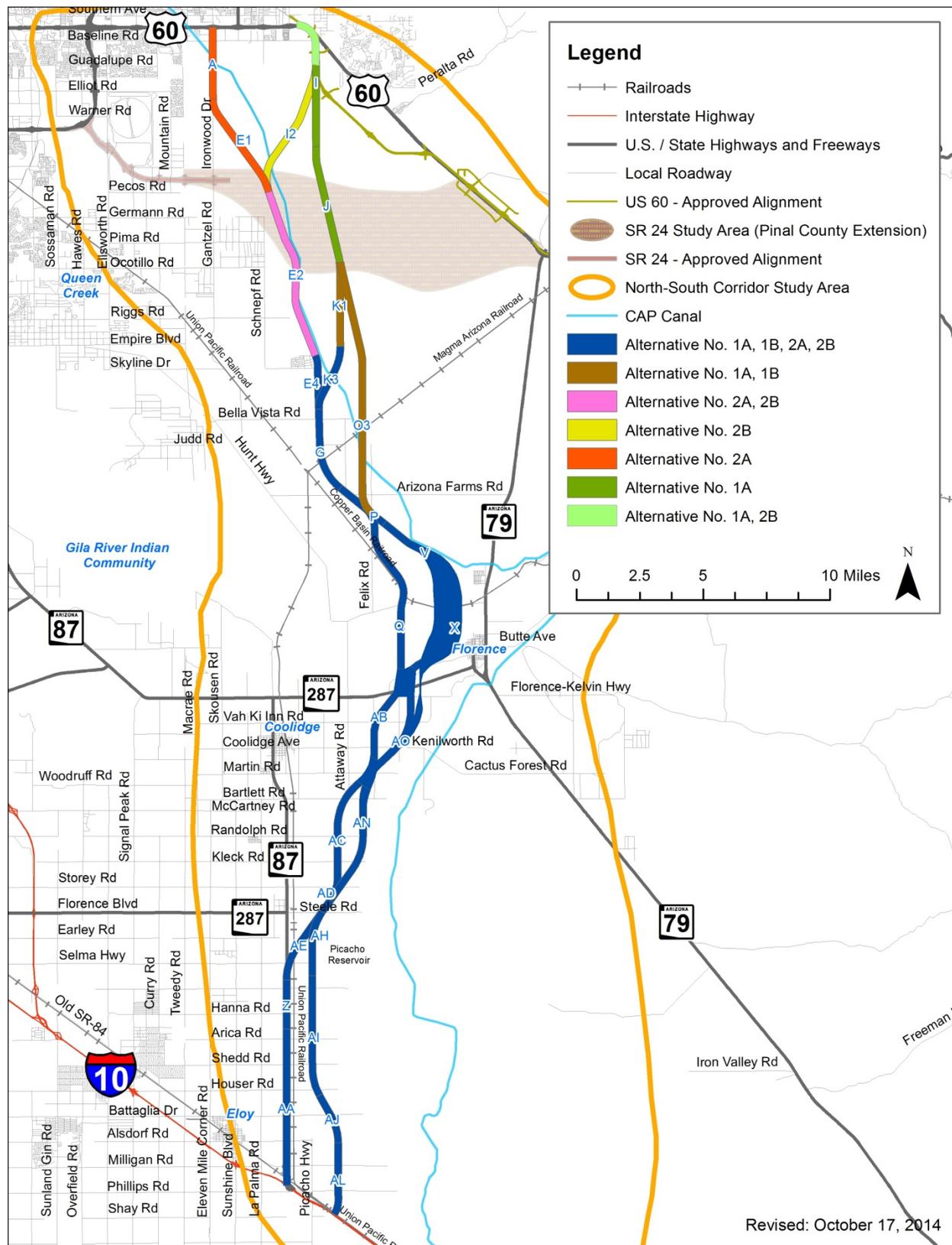
Alternatives Selection Report

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)

Figure S-4 shows the route alternatives that were recommended for evaluation in the project-level DEIS.

Figure S-4. Recommended route alternatives (map from the 2014 *Alternatives Selection Report*)



Source: Arizona Department of Transportation (2014a)

Modifications to Alternatives Identified in the Alternatives Selection Report

After publication of the ASR in October 2014, the alternatives recommended for further study were refined and additional options were studied. Major changes to the process and/or alternatives are described here. Additional refinements are described in this Tier 1 DEIS in Chapter 2, *Alternatives*.

Corridor Route Alternative Options and Refinements

ADOT's *Williams Gateway Corridor Definition Study* (2006), which recommended the implementation of the North-South Corridor, also recommended that the proposed SR 802 (now known as SR 24) in Maricopa County be extended to the east into Pinal County and connect with US 60 or SR 79. In 2015, the Maricopa Association of Governments prepared the *SR-24 Williams Gateway Freeway, Ellsworth Road – Ironwood Road Interim Phase II Feasibility Study*. The study recommended an interim second phase of construction for SR 24 between Ellsworth Road and Ironwood Drive. This extension sets the footprint of SR 24 just east of Ironwood Drive. As a result, ADOT recommended that the SR 24 study be incorporated into the NSCS, and that the route be evaluated east to the North-South Freeway, but not all the way to US 60 or SR 79—that potential extension could be evaluated at a future date.

The study team developed four alternatives to connect the two Eastern and two Western Alternatives to the planned extension of SR 24 east of Ironwood Drive.

Conversion to a Tier 1 Draft 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 Record of Decision (ROD). To continue and complete the study as a federally approved NEPA action, as a result of fiscal constraint, the study transitioned to a Tier 1 EIS from the initial project-level EIS.

Western Alternative at Gila River Crossing

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 2.2-1 in Chapter 2, *Alternatives*). 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 Union Pacific Railroad 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.

Alternatives Evaluated in this Tier 1 Draft Environmental Impact Statement

The following sections describe the No-Action Alternative—which provides a baseline against which to consider impacts of the proposed action—and the action corridor alternatives.

No-Action Alternative

The No-Action Alternative would entail not implementing the proposed action (no new freeway would be built). It is important to note 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. 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 the horizon year are included in the No-Action Alternative.

Action Corridor Alternatives

After several refinements to the ASR alignments, including the consideration of environmentally sensitive resources, the 1,500-foot-wide action corridor alternatives recommended for evaluation in this Tier 1 DEIS were identified. Figure S-5 shows the action corridor alternatives, separated into four segments that partition the study area. Table S-3 lists the action corridor alternatives, as shown in Figure S-5.

Table S-3. 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

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 S-5), an Eastern Alternative (shown in purple on Figure S-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 S-5). In total, there are eight full-length action corridor alternatives with options that result in a total of 40 possible continuous through-routes that are evaluated in this Tier 1 DEIS.

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

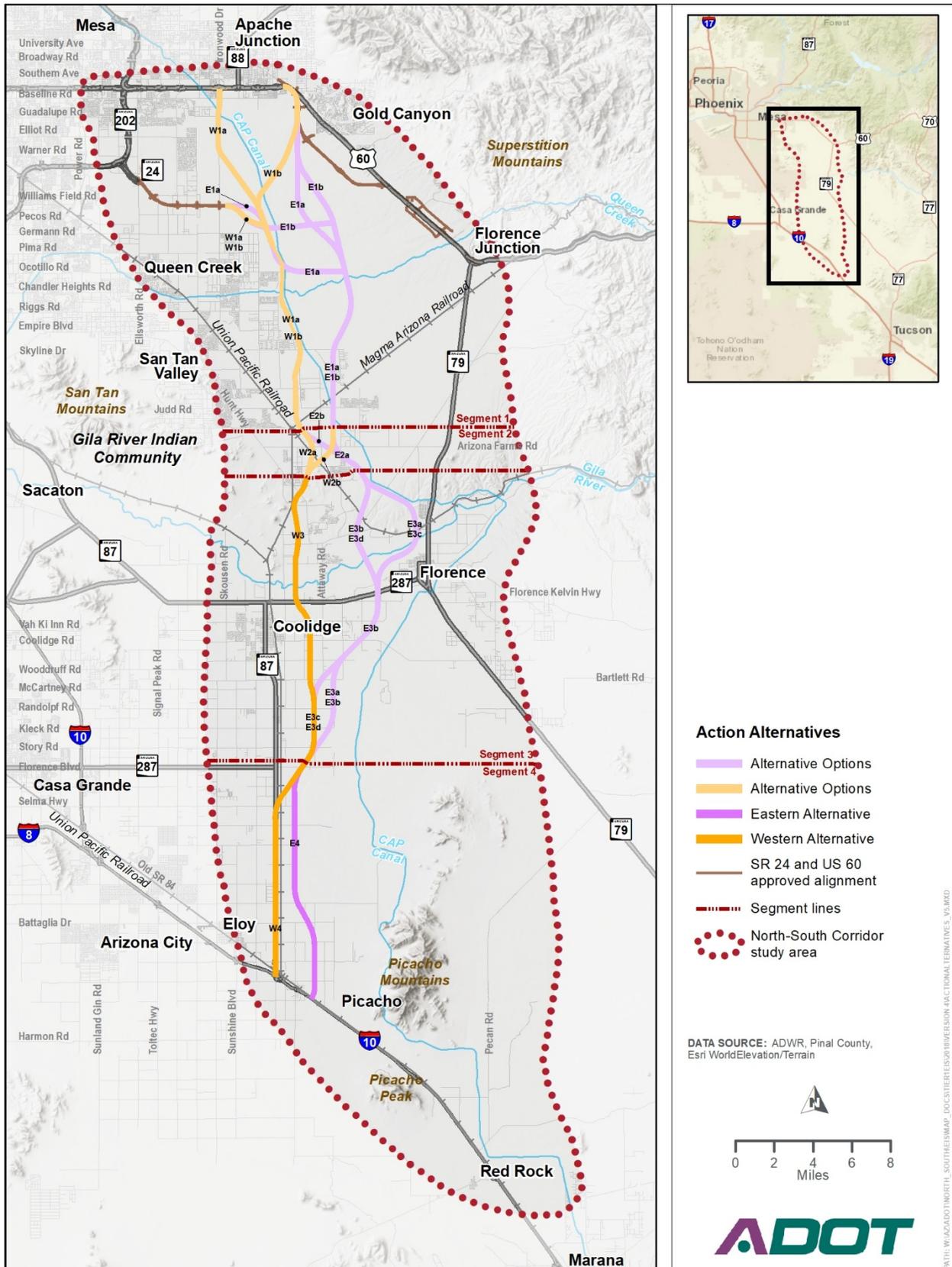


Table S-4 presents the action corridor alternatives, with options, that combine to create the eight full-length action corridor alternatives (Alternatives 1 through 8).

Table S-4. Full-length action corridor alternatives

Alt.	Option 1	Option 2	Option 3	Option 4
1	W1a, W2a, W3, W4	W1b, W2a, W3, W4	— ^a	—
2	W1a, E2b, E3a or E3c, W4	W1b, E2b, E3a or E3c, W4	W1a, E2b, E3b or E3d, W4	W1b, E2b, E3b or E3d, W4
3	W1a, E2b, E3a or E3c, E4	W1b, E2b, E3a or E3c, E4	W1a, E2b, E3b or E3d, E4	W1b, E2b, E3b or E3d, E4
4	W1a, W2a, W3, E4	W1b, W2a, W3, E4	—	—
5	E1a, W2b, W3, W4	E1b, W2b, W3, W4	—	—
6	E1a, E2a, E3a or E3c, W4	E1b, E2a, E3a or E3c, W4	E1a, E2a, E3b or E3d, W4	E1b, E2a, E3b or E3d, W4
7	E1a, E2a, E3a or E3c, E4	E1b, E2a, E3a or E3c, E4	E1a, E2a, E3b or E3d, E4	E1b, E2a, E3b or E3d, E4
8	E1a, W2b, W3, E4	E1b, W2b, W3, E4	—	—

^a not applicable

Environmental Impacts

At the Tier 1 EIS level—with the location of a project-level Tier 2 EIS alignment and footprint unknown—the environmental impact assessment was largely qualitative. Therefore, a risk-assessment approach was used to determine the likelihood of adverse impacts associated with the 1,500-foot-wide action corridor alternatives.

In general, a five-level scale was used to evaluate the action corridor alternatives, depending on the resource and the type of impact under consideration, as described below:

1. High degree of benefit to or no risk of impacts; resource is not present in the Corridor
2. Some benefit to or minimal risk of impacts; resource may be present but impacts are not likely
3. No effect or low risk of impacts; resource may be present but impacts likely avoided
4. Some adverse impact or moderate risk of impacts; resource present and impacts may occur
5. Substantial adverse impact or high risk of impacts; resource present and impacts are likely unavoidable

The alternatives evaluation also considered recreational and historic resources protected under Section 4(f) of the Department of Transportation Act of 1966. The risk of use based on the location of known Section 4(f) properties is identified in this Tier 1-level evaluation. Preliminary Section 4(f) determinations, however, were not made because permanent incorporation, temporary occupancy, or constructive uses cannot be identified without a specific project footprint. Moreover, several historic properties would need to be evaluated for listing in the National Register of Historic Places during the consultation process required by Section 106 of the National Historic Preservation Act, and the result of that evaluation would determine whether they are Section 4(f) properties. Since no preliminary Section 4(f) determinations were made for this Tier 1 DEIS, Section 4(f) impacts were not considered in the elimination of alternatives, but the risk of such impacts was noted.

No-Action Alternative

As a baseline for comparison, consistent with NEPA requirements, the study team defined and evaluated a No-Action Alternative that includes all reasonably foreseeable transportation and development projects in the study area.

The No-Action Alternative would not result in impacts that would be associated with any of the action corridor alternatives, as discussed in this Tier 1 DEIS in Chapter 3, *Affected Environment and Environmental Consequences*. However, the No-Action Alternative would not meet the purpose and need. Between 2015 and 2040, the daily total VMT in the study area would increase from 5 million to 12.6 million, and the daily total VHT would increase from approximately 110,000 to over 370,000. These increases would result in more miles of congested roadways in the study area, from 47 miles in 2015 to 185 miles in 2040. Without the proposed action, numerous regionally significant routes in the study area would operate at an unacceptable LOS, with many routes operating at LOS F. Moreover, the absence of the proposed action would limit circulation and access in the study area as land uses are converted from undeveloped and low-density agriculture and a rural development pattern to higher-density residential neighborhoods, commercial centers with new job opportunities, and additional community and public facilities to serve the new neighborhoods.

The No-Action Alternative would not meet the proposed action's purpose and need because it:

- would not provide the necessary transportation mobility, circulation, and access needs to accommodate the projected population and employment growth in the study area;
- would not support local, regional, and statewide planning efforts;
- would not address the lack of transportation system connectivity and the need to enhance system linkages; and
- would not provide an alternative to avoid congestion on I-10.

Action Corridor Alternatives

The results of the analyses of the action corridor alternatives are presented in this Tier 1 DEIS in Chapter 3, *Affected Environment and Environmental Consequences*, and in Chapter 4, *Indirect and Cumulative Impacts*. Additional detail is provided in the evaluation matrix included in the *Corridor Selection Report, North-South Corridor Study* (in Appendix C, *Alternatives Screening*).

The following sections summarize the environmental impacts that would result from the action corridor alternatives, by segment, for the following areas: transportation and traffic operations, land use planning, and the human, built, and natural environments. Input from stakeholders is also discussed.

Focusing on the five-level scale discussed previously helped the study team determine to what degree each action corridor alternative would meet the proposed action's purpose and need, as described in this Tier 1 DEIS in Chapter 1, *Purpose and Need*.

This discussion focuses on resource areas where the action corridor alternatives would have differing impacts. Some resources—such as air quality—would experience equal impacts under all the action corridor alternatives. For more information regarding the resource areas analyzed in this Tier 1 DEIS, refer to Chapter 3, *Affected Environment and Environmental Consequences*, which covers the topics listed in Table S-5.

Table S-5. Resource areas discussed in Chapter 3

Section	Topic	Section	Topic
3.1	Chapter overview	3.11	Biological resources
3.2	Land use	3.12	Hydrology, floodplains, and water resources
3.3	Social conditions	3.13	Waters of the United States
3.4	Economics	3.14	Cultural resources
3.5	Parkland and recreational facilities	3.15	Hazardous materials
3.6	Prime and unique farmland	3.16	Energy
3.7	Air quality	3.17	Environmental justice and Title VI
3.8	Noise	3.18	Temporary construction impacts
3.9	Visual resources	3.19	Section 4(f) and Section 6(f) resources
3.10	Topography, geology, and soils		

With regard to recreational and historic resources protected under Section 4(f) of the Department of Transportation Act of 1966, this Tier 1 DEIS discusses such resources in Section 3.19, *Section 4(f) and Section 6(f) Resources*. The discussion provides sufficient data to inform an assessment of the risk of the action corridor alternatives potentially affecting Section 4(f) resources. Data collected through the planning process, including information in cultural resource reports prepared for the study for review and concurrence by the State Historic Preservation Office for compliance with Section 106 of the National Historic Preservation Act, have informed the development and refinement of action corridor alternatives in this Tier 1 DEIS phase.

Segment 1

Four action corridor alternatives (E1a, E1b, W1a, and W1b) are under consideration in Segment 1, and a summary of how the alternatives perform in comparison with each other is presented below.

Transportation and Traffic Operations

As modeled, average weekday traffic volumes would be greatest with the W1a Alternative, and less with the eastern connection with US 60 (that is, with E1a, E1b, and W1b). While each of the action corridor alternatives would have a positive effect by reducing regional traffic congestion, the W1a Alternative would result in the greatest reduction in regional congestion, followed by W1b and E1a/E1b (no discernable difference exists between E1a and E1b). The W1a Alternative would require constructing collector and distributor roads to carry local traffic on Ironwood Drive, resulting in a wider freeway footprint to maintain freeway, local road, and traffic interchange operations. This would create a substantial barrier to east-to-west traffic through the area. The E1a, E1b, and W1b Alternatives would necessitate the development of Elliot Road to facilitate local access to the facility (currently, no plans exist to extend Elliot Road east of the CAP Canal), adding to the cost of these alternatives.

Excluding the SR 24 connection, the E1a, E1b, W1a, and W1b Alternatives are similar in length (19, 18.7, 18.8, and 19.1 miles, respectively). The SR 24 connections vary substantially between alternatives, with the W1a and W1b Alternatives being the shortest (at 2.35 and 2.36 miles, respectively), followed by the E1b Alternative at 5.93 miles, and the E1a Alternative being the longest at 8 miles. Shorter alternatives provide faster travel times for through Corridor drivers. It is worth noting that the number of through-trips for the Corridor represents a relatively small percentage of all trips.

Land Use Planning

Segment 1 jurisdictions' general plans are supportive of a North-South Freeway facility, which is referenced without identifying a preferred alternative.

All action corridor alternatives would be compatible with future land uses because they all cross areas planned for residential or business land uses. Of the alternatives, the W1a Alternative provides access to the largest existing and anticipated population, employment, and activity centers. Most land east of the CAP Canal is owned by the Arizona State Land Department (ASLD), which has developed conceptual plans for this area, known as Superstition Vistas. Projections for the area are not reflected in the 2040 planning horizon as documented in the State Demographer's projections; however, the *Superstition Vistas Conceptual Plan* notes that anywhere from 250,000 to 1 million people may live there in the future. The E1a, W1a, and W1b Alternatives risk affecting access to and use of the Rittenhouse Army Heliport (an active military training facility).

Human Environment

The W1a Alternative would have the greatest potential impact on residential properties. The W1b Alternative would avoid many of the potential W1a Alternative residential impacts at US 60; however, it would have the same potential impacts on single-family homes as the E1a and E1b Alternatives at the US 60 juncture, with additional potential impacts south of the SR 24 connection. The E1a and E1b Alternatives would have the fewest potential residential impacts. A Tier 2 alignment, developed to avoid impacts to the extent possible, would affect fewer properties. A system traffic interchange at Ironwood Drive with the W1a Alternative would likely require the acquisition of nonresidential property as well, whereas the connection with the E1a, E1b, and W1b Alternatives east of Goldfield Road may have less of a potential impact on nonresidential properties.

Regarding social conditions, the E1a, E1b, and W1b Alternatives have the potential to affect substantially fewer community facilities than the W1a Alternative. However, the E1a, W1a, and W1b Alternatives risk affecting access to and use of the Rittenhouse Army Heliport, while the E1b Alternative would not. The E1a and E1b Alternatives would have little effect on identified low-income and minority populations. The W1a and W1b Alternatives both would result in potential disproportionately high and adverse effects on minority and low-income populations. The E1a and E1b Alternatives would result in a moderate risk of impacts on farmland, while the W1a and W1b Alternatives would result in a high risk of farmland impacts.

Built Environment

In Segment 1, all of the action corridor alternatives would have a high risk of impacts on existing or planned parks and recreational facilities. The E1a, E1b, and W1b Alternatives would affect the planned expansion area of Silly Mountain Park; however, the actual impacts of a Tier 2 alignment may avoid impacts on the park since planning documents for the park identify a future transportation facility through the park (see Section 3.5, *Parkland and Recreational Facilities*). The W1a Alternative would affect a golf course at the system traffic interchange with US 60, and trails that cross the alternative. All the action corridor alternatives have a moderate risk of impacts on trails; however, potential impacts may be avoided or minimized during Tier 2 studies. Therefore, in Segment 1, the E1a, E1b, and W1b Alternatives are preferred over the W1a Alternative.

The W1a Alternative would result in a high risk of noise impacts based on existing land uses; a low risk of noise impacts is associated with the E1a, E1b, and W1b Alternatives.

Regarding cultural resources, the W1a and W1b Alternatives would result in a high risk of impacts on archaeological sites and no risk of impacts on historical districts, buildings, or structures. The E1a and E1b Alternatives would result in a minimal risk of impacts on known archaeological sites and no risk of impacts on historical districts, buildings, or structures.

Natural Environment

The W1a and W1b Alternatives have a high risk of land subsidence or earth fissure impacts, while the E1a and E1b Alternatives have a moderate risk of these impacts. Regarding biological resources, the E1a and E1b Alternatives would affect wildlife slightly more than the W1a and W1b Alternatives (moderate versus low risk, respectively); however, a moderate risk of impacts on wildlife habitat is associated with all alternatives. The E1b and W1b Alternatives would cross flood control structures, resulting in potential impacts on mesquite/shrub habitat that is not unique and that could be mitigated. Therefore, between the E1a and E1b Alternatives, virtually no difference exists in potential adverse impacts on biological resources. The E1b and W1b Alternatives would result in moderate risks of impacts on conservation and wildlife management land, while the other two alternatives would present no risk to these resources. All the alternatives have a high risk of impacts on protected native plants and would result in a high number of ephemeral drainage crossings. The E1b and W1a Alternatives would have a moderate risk of floodplain encroachment, and the E1a and W1b Alternatives would have a low risk. Finally, the W1a and W1b Alternatives would result in a moderate risk of groundwater impacts, while the E1a and E1b Alternatives would have no groundwater impact risk.

Stakeholder Input

During a series of meetings held in May 2017, the Four Southern Tribes (Ak-Chin Indian Community, Gila River Indian Community, Salt River Pima-Maricopa Indian Community, and Tohono O'odham Nation) preferred the No-Action Alternative; however, if an action corridor alternative were selected, their preference among the alternatives was also identified. In Segment 1, the Four Southern Tribes preferred the E1a Alternative.

Additional input was solicited from the public and the cooperating and participating agencies as part of the public outreach conducted in November and December of 2017. Of the 10 agencies that submitted preferences in Segment 1, 6 identified the W1a Alternative as preferred, 3 identified the E1b Alternative as preferred, and 1 identified the W1b Alternative as preferred. The public input provided no consensus regarding the Segment 1 alternatives, with the greatest preference for the W1a Alternative (40 positive comments), followed closely by E1b (39 positive comments). Opposition was greatest for the W1b Alternative (42 negative comments), followed by W1a (35 negative comments).

Segment 2

Four action corridor alternatives (E2a, E2b, W2a, and W2b) are under consideration in Segment 2, and a summary of how the alternatives perform in comparison with each other is presented below.

Transportation and Traffic Operations

The alternatives in Segment 2 primarily serve as connectors between the Eastern and Western Alternatives, with the E2a and E2b Alternatives providing the eastern connections to Segment 3 and the W2a and W2b Alternatives providing the western connections to Segment 3. The W2a Alternative, at 2.6 miles, is the shortest alternative. The E2b Alternative is the longest alternative, at 3.7 miles.

Land Use Planning

The Town of Florence *2020 General Plan* future land use map identifies the Town's preferred alternative for the proposed action in Segment 2 as the E2a Alternative; this was later reaffirmed in the Town of Florence Resolution 1490-14 (December 2014, see Appendix A, *Agency Coordination*).

In Segment 2, the alternatives are close to each other, with few variations in existing land uses within 2 miles. The E2b Alternative is closest to the most employment centers. None of the alternatives is close to many homes or activity centers. All the alternatives would affect planned and conceptual development

plans in Segment 2, although the E2a and W2a Alternatives would minimize such impacts by following a more north-to-south alignment through the area as opposed to the E2b and W2b Alternatives, which cross east-to-west through the area.

Human Environment

In Segment 2, the risk of impacts on community facilities is low because no community facilities would be affected; however, the action corridor alternatives may affect populations with minority concentrations (note that the census geographies do not allow differentiation of the alternatives in Segment 2). No homes or businesses are at risk of displacement in Segment 2. A moderate risk of farmland impacts is associated with all the alternatives.

Built Environment

The W2a and W2b Alternatives would result in a moderate risk of impacts on existing or planned parks and trails because they cross the proposed Copper Basin Railroad Trail and may trigger Section 4(f) impacts, whereas the E2a and E2b Alternatives would result in a low risk to these facilities. No noise impacts on sensitive receptors are associated with any of the Segment 2 alternatives. Because no known cultural resources would be affected in Segment 2, the risk of impacts is low.

Natural Environment

All alternatives in Segment 2 would have a minimal risk of land subsidence or earth fissure impacts. All alternatives have a low risk of impacts on wildlife and wildlife habitat, a minimal risk of impacts on protected native plants, a minimal number of ephemeral drainage crossings, and no risk of floodplain encroachment.

Stakeholder Input

Of the six agencies that submitted preferences in Segment 2, the E2a Alternative was preferred by three, the W2a Alternative was preferred by two, and the E2b Alternative was preferred by one. In Segment 2, the Four Southern Tribes preferred the W2b Alternative. The public input provided no consensus regarding the Segment 2 alternatives, with the E2a Alternative receiving the most support (12 positive comments) and the most opposition (7 negative comments).

Segment 3

Five action corridor alternatives (E3a, E3b, E3c, E3d, and W3) are under consideration in Segment 3, and a summary of how the alternatives perform in comparison with each other is presented below.

Transportation and Traffic Operations

As modeled, average weekday traffic volumes with the action corridor alternatives in Segment 3 are greatest with the W3 Alternative and less with the E3a, E3b, E3c, and E3d Alternatives. While any of the alternatives would reduce regional congestion, the W3 Alternative would result in the greatest reduction, followed by, in order, the E3b, E3d, E3a, and E3c Alternatives. The W3 Alternative is the shortest (15 miles), while the Eastern Alternatives range from nearly 10 percent longer (E3b and E3d) to 23 percent longer (E3a and E3c), resulting in longer travel times for through Corridor drivers (when evaluating the Corridor length, it is worth noting that the number of through-trips for the Corridor is estimated to be a small percentage of all trips along the Corridor).

Land Use Planning

The City of Coolidge *General Plan* identifies the E3a or E3b Alternative (with modifications) as the City's preferred alternative. The Town of Florence *2020 General Plan* identifies the E3a Alternative (with

modifications) as the Town's preferred alternative. Land use planning in the area is most consistent with the E3a Alternative, which is generally consistent with the Town of Florence's *2020 General Plan*. The Town has worked with landowners in the area to plan around a conceptual corridor, and the Town Council has passed a resolution supporting the E3a Alternative (December 2014, see Appendix A, *Agency Coordination*).

The W3 Alternative is closest to the biggest existing population and a high number of activity centers within 2 miles. Given their proximity to Florence, the E3a and E3c Alternatives are closest to a substantially high number of existing activity centers, and the E3c Alternative captures the most existing employment in the segment. The City of Coolidge has submitted agency stakeholder comments opposing the W3 Alternative, which is described as inconsistent with the City's adopted general plan and development plans that are planned throughout the alternative. While all alternatives cross areas planned for residential growth, the E3a, E3b, E3c, and E3d Alternatives would provide the most direct access to large planned commercial and industrial centers in the study area.

Human Environment

In Segment 3, the E3c and E3d Alternatives would perform best with regard to social conditions—with either benefits to or no effects on community facilities and minority and low-income populations. The E3a and E3c Alternatives would enhance access to community facilities in Florence for areas to the north and for other neighboring communities, whereas no community facilities would be affected by or benefit directly from the E3b or E3d Alternatives. The W3 Alternative would reduce access to an existing community church and would result in the greatest potential adverse impacts on minority and low-income populations. The E3a and E3b Alternatives have the potential to affect the greatest number of homes in Segment 3, whereas the E3c Alternative, E3d Alternative, and the W3 Alternative have a lower risk of impacts on residences.

Each of the Segment 3 alternatives would affect active or anticipated sand and gravel mining operations near the Gila River, with the E3b and E3d Alternatives also affecting the western end of the Florence Copper mine. All alternatives have a high risk of impacts on farmland.

Built Environment

In Segment 3, the Eastern Alternatives would have a moderate risk of impacts on existing and planned parks and recreational facilities, and the Western Alternative would have a higher risk of impacts on these facilities. The W3 Alternative would likely affect a portion of the Pinal County Existing Multiuse Trail Corridor that runs adjacent to the Pima Lateral Canal in Coolidge. Therefore, in Segment 3, the Eastern Alternatives are preferred over the W3 Alternative with regard to parks and recreational resources.

The E3a and E3b Alternatives would have a moderate risk of noise impacts, whereas the E3c, E3d, and W3 Alternatives would have a low risk of noise impacts.

All alternatives in Segment 3 have a moderate risk of impacts on archaeological resources, while the W3 Alternative would have a low risk of impacts on known historic districts, buildings, or structures. The Southern Pacific Railroad Wellton-Phoenix-Eloy Line intersects the W3 Alternative. The Southern Pacific Railroad Mesa-Winkelman Line intersects the E3a, E3b, E3c, and E3d Alternatives. The North Side Canal intersects the E3a, E3b, E3c, and E3d Alternatives. The Pima Lateral Canal intersects the E3a, E3b, E3c, E3d, and W3 Alternatives. The Kenilworth Elementary School, a historic property, extends 400 feet into the W3 Alternative.

Natural Environment

All alternatives in Segment 3 have a high risk of land subsidence or earth fissure impacts. Regarding biological resources, the impacts are mostly the same for all Segment 3 alternatives: a moderate risk of

impacts on wildlife, wildlife habitat, and protected native plants, and no risk of impacts on conservation and wildlife management land. The E3a, E3c, E3d, and W3 Alternatives would result in a moderate number of ephemeral drainage crossings, whereas the E3b Alternative would result in a low number of crossings. The E3a and E3c Alternatives have a high risk of floodplain encroachment, while the E3b and E3d Alternatives have a moderate risk and the W3 Alternative has a low risk.

Stakeholder Input

Of the eight agencies that provided preferences in Segment 3, the E3a Alternative was preferred by four agencies, the E3b Alternative was preferred by three agencies, the W3 and E3c Alternatives were each supported by two agencies, and the E3d Alternative was preferred by one agency (note that several agencies identified multiple preferred alternatives in the same segment). In Segment 3, the Four Southern Tribes preferred the W3 Alternative. The public input on the Segment 3 alternatives resulted in the E3a Alternative receiving the most support (23 positive comments), followed by E3c (17 positive comments). Opposition was consistent across all Segment 3 alternatives (3 negative comments for each).

Segment 4

Two action corridor alternatives (E4 and W4) are under consideration in Segment 4, and a summary of how the alternatives perform in comparison with each other is presented below.

Transportation and Traffic Operations

As modeled, average weekday traffic volumes on the Segment 4 alternatives are greatest with the W4 Alternative, the difference being a function of whether the Corridor is east or west in Segment 1 (the W1a Alternative would generate the most traffic in Segment 4, while the E1a and E1b Alternatives would generate the least traffic in Segment 4). The W4 Alternative is 11.7 miles long, while the E4 Alternative is 12.8 miles long. Where the W4 Alternative is coincident with SR 87, access would need to be provided to properties along the route.

Land Use Planning

The City of Coolidge has identified a preferred alternative in its *2025 General Plan* that is similar to the E4 Alternative. The Eloy *2010 General Plan Update* Circulation Element map shows the City's preferred alternative as the W4 Alternative.

In Segment 4, both alternatives are within 2 miles of moderate population and employment; however, the W4 Alternative is near more activity centers because it is closer to the developed parts of Eloy. The City of Coolidge anticipates the development of the Inland Port Arizona and Pinal Logistics Park east of SR 87 in its incorporated area.

Human Environment

Both Segment 4 alternatives would potentially adversely affect community facilities, but the W4 Alternative would also potentially adversely affect minority and low-income populations. The W4 Alternative would have a moderate risk of both residential and business displacements. The E4 Alternative would have a low risk of residential and business displacements. Both alternatives have a high risk of farmland impacts.

Built Environment

In Segment 4, both alternatives would have a moderate risk of impacts on existing and planned parks and recreational facilities. The W4 Alternative would have a moderate risk of noise impacts, whereas the E4 Alternative would have a minimal risk of noise impacts. Both alternatives would have a moderate risk of impacts on archaeological resources. However, the W4 Alternative would have a moderate risk of

impacts on known historic districts, buildings, or structures, while the E4 Alternative would have no risk. The Southern Pacific Railroad Main Line Sunset Route intersects the E4 and W4 Alternatives. The Southern Pacific Railroad Wellton-Phoenix-Eloy Line intersects the W4 Alternative. The Casa Grande Canal intersects the E4 and W4 Alternatives. The Florence-Casa Grande Canal Extension intersects the E4 and W4 Alternatives. The El Paso Natural Gas Pipeline No. 1007 intersects the E4 and W4 Alternatives.

Natural Environment

Both alternatives in Segment 4 would have a high risk of land subsidence or earth fissure impacts. The biological conditions are about the same, with both alternatives having a low risk of impacts on wildlife, wildlife habitat, conservation and wildlife management land, and protected plant species. Also, both Segment 4 alternatives would have a minimal number of ephemeral drainage crossings. The E4 Alternative would have a moderate risk of floodplain encroachment, while the W4 Alternative would have no risk of floodplain encroachment.

Stakeholder Input

Of the five agencies that provided preferences in Segment 4, the E4 Alternative was preferred by three agencies and the W4 Alternative was preferred by two agencies. The Four Southern Tribes did not identify a preferred alternative in Segment 4. In Segment 4, the greatest public preference and opposition was registered for the W4 Alternative (12 positive comments and 2 negative comments), compared with the E4 Alternative, which received 7 positive comments and 1 negative comment.

Evaluation of Alternatives

Overall, only a few objections to the concept of the North-South Corridor have been stated by agencies, tribes, and the public. Among the agencies that participated in the outreach efforts, several did not favor one action corridor alternative over another; several favored one or more of the action corridor alternatives over the others; and one (Bureau of Reclamation) did not support any action corridor alternative in Segment 1. The Four Southern Tribes preferred that improvements be made to existing roads in the study area.

Public comments were related to concerns about property impacts, connectivity, and traffic congestion, among other issues. Approximately 37 percent of the public respondents offered general support for the roadway infrastructure improvements, and 34 percent expressed an interest for one or more alternatives. A smaller number (26 percent) voiced opposition to one or more of the alternatives.

Preferred Alternative

This section describes how the study team identified a preferred action corridor alternative in each segment, and how the alternatives from each segment combine to create the preferred corridor alternative.

The identification of a preferred alternative was based on how well each action corridor alternative met the proposed action's purpose and need and to what degree other desirable outcomes would be achieved. To address transportation needs in the study area and the purpose of the proposed action (described in this Tier 1 DEIS in Section 1.5, *Purpose of the Proposed Action*), the preferred alternative should meet the following objectives:

- Enhance the transportation network to accommodate existing and future populations.
- Improve access to future activity centers.
- Improve regional mobility.

- Provide an alternative to avoid congestion on I-10.
- Improve north-to-south connectivity.
- Integrate the region's transportation network.

These objectives address the need for a continuous, unfragmented north-to-south transportation facility in the study area to facilitate regional mobility, to improve access to a growing population and activity centers, and to improve connectivity between Phoenix, southeastern Maricopa County, Pinal County, and Tucson. However, the benefits of a new transportation facility must be balanced with potential impacts on the environment and other likely effects. Other desired outcomes of the proposed action to balance likely effects (described in this Tier 1 DEIS in Section 1.6, *Other Desired Outcomes of the Proposed Action*) are as follows:

- Protect and enhance the natural environment along the Corridor.
- Support local and regional land use plans and preservation goals.
- Support equitable economic opportunities.
- Complement other planned transportation improvements along new and established corridors in the study area.

Finally, the identification of a preferred alternative was informed by a qualitative "least environmentally damaging practicable alternative" (LEDPA) consistency analysis performed for each segment, with regard to potential impacts on waters of the United States (Waters). At the Tier 2 phase, if an individual permit is needed, the U.S. Army Corps of Engineers requires that the preferred alternative be the LEDPA, in accordance with Section 404(b)(1) of the Clean Water Act (33 United States Code § 1344). Based on the risks identified in this qualitative LEDPA consistency analysis, a preliminary LEDPA determination was made for each segment. Future Tier 2 studies will provide the quantitative analysis necessary to support a final LEDPA determination.

Identification of Action Corridor Alternatives in Each Segment

The following sections compare the action corridor alternatives in each segment to identify which is the preferred alternative based on how well it meets the proposed action's objectives (purpose and need) and how it fared after the study team's evaluation, as presented in this Tier 1 DEIS in Section 6.2, *Comparison of Alternatives*. Additional discussion regarding the degree to which each action corridor alternative achieves the other desirable outcomes is also included.

Segment 1

Each of the action corridor alternatives would reduce regional congestion, although the W1a Alternative performed better in modeling because it is close to population and employment centers. All the alternatives would meet the purpose and need to improve regional mobility and provide improved connectivity; however, the E1b Alternative would best improve access to future activity centers and ASLD's planned development areas of Lost Dutchman Heights and Superstition Vistas.

In Segment 1, the E1b Alternative is the most compatible with land use planning in the area and would result in the lowest risk of impacts on the human environment. Considering the built environment in Segment 1, the E1a and E1b Alternatives would result in fewer impacts than the W1a and W1b Alternatives. Overall, the E1a Alternative would have the lowest potential for impacts on natural resources as a whole, considering all potential geological, hydrological, biological, and jurisdictional Waters impacts, although both the E1a and E1b Alternatives would result in a greater risk of impacts on wildlife.

In Segment 1, the risk of Section 4(f) impacts associated with the W1a and W1b Alternatives is greater than the risk of Section 4(f) impacts associated with the E1a and E1b Alternatives, which have either no impacts on Section 4(f) resources or impacts that may be avoided or minimized during Tier 2 studies.

In considering the other desirable outcomes of the proposed action, the W1a Alternative may better protect the natural environment, with mitigation, compared with the E1a, E1b, and W1b Alternatives. However, the E1a and E1b Alternatives better support regional land use plans and better complement other planned transportation improvements in the study area, with direct access to the US 60 bypass (also provided by the W1b Alternative) and the ability to expand the transportation network to the east as development occurs. All the alternatives support equitable economic opportunities with access to employment and activity centers.

Considering the proposed action's objectives, the analysis of potential impacts, the other desirable outcomes, and the preliminary LEDPA determination, the E1b Alternative is the preferred action corridor alternative in Segment 1.

Segment 2

In Segment 2, the E2a and E2b Alternatives would result in less risk of impacts on environmental resources than the W2a and W2b Alternatives; however, neither the E2a nor E2b Alternative would perform better than the other. As a result, the better-performing alternatives in Segments 1 and 3 and the preliminary LEDPA determination guided the selection of the E2a Alternative to connect the preferred action corridor alternatives in Segments 1 and 3.

Segment 3

Each of the action corridor alternatives in Segment 3 would reduce regional congestion; however, the W3 Alternative would perform better because it is close to population and activity centers, followed by the E3b and E3d Alternatives. All the alternatives would meet the proposed action's purpose and need to improve regional mobility, connectivity, and access to future activity centers.

The E3a Alternative is the most compatible with local land use planning, followed closely by the E3c Alternative. The E3b and E3d Alternatives would result in the least risk of impacts on the human environment, while the W3 Alternative would result in somewhat greater impacts. In addition, the risk of Section 4(f) impacts in Segment 3 with the W3 Alternative is higher than with any of the Eastern Alternatives. With regard to impacts on the built environment, each alternative would result in some impacts. Regarding the natural environment, the W3 Alternative would result in fewer impacts than the other alternatives. The adopted general plans of the local jurisdictions directly affected by the alternatives in Segment 3—the City of Coolidge and Town of Florence—support the E3a Alternative.

At the Tier 2 EIS phase, the U.S. Army Corps of Engineers requires that the preferred alternative be the LEDPA with regard to impacts on Waters, considering that the environmental impacts among all the alternatives is necessary. The E3b and E3d Alternatives would result in the fewest impacts on Waters, with a more direct crossing of the Gila River, and the E3b Alternative would have the fewest drainage crossings.

In considering the other desirable outcomes of the proposed action, all of the Segment 3 alternatives would result in comparable impacts on the natural environment. However, the Eastern Alternatives better support regional land use plans, with better access for planned developments and better support of equitable economic opportunities with access to employment and activity centers in Florence. The Eastern Alternatives complement other planned transportation improvements slightly better with the ability to expand the transportation network to the east as planned development occurs.

Considering the proposed action's objectives, the results of the analysis of potential impacts (including potential impacts on Waters), other desirable outcomes, and the preliminary LEDPA determination, the E3b Alternative is the preferred action corridor alternative in Segment 3.

Segment 4

Both alternatives in Segment 4 would meet the proposed action's purpose and need to improve regional mobility, connectivity, and access to future activity centers.

In Segment 4, the E4 Alternative would result in a lower risk of impacts on the human and built environments. Considering the natural environment, neither Segment 4 alternative outperforms the other across all performance measures. The risk of impacts on Section 4(f) properties is higher with the W4 Alternative than with the E4 Alternative.

In considering the other desirable outcomes of the proposed action, both alternatives would similarly protect the natural environment, support equitable economic opportunities, and complement other planned transportation improvements in the study area. However, the E4 Alternative would better support regional land use plans.

Considering the proposed action objectives, the results of the analysis of potential impacts showing the E4 Alternative resulting in fewer environmental impacts, other desirable outcomes, and the preliminary LEDPA determination, the E4 Alternative is the preferred action corridor alternative in Segment 4.

Identification of Full-length Action Corridor Alternatives

The preceding section provided a segment-by-segment evaluation of the action corridor alternatives, to facilitate an understanding of the environmental impacts of the action corridor alternatives at the segment level. Impacts of the eight full-length action corridor alternatives (and options) result from the combination of impacts described in the segment-by-segment evaluation.

For the eight full-length action corridor alternatives (and options), the following sections provide an end-to-end evaluation of transportation and traffic operations, land use planning, and the human, built, and natural environments. Stakeholder input is also described. The discussion compares the full-length action corridor alternatives to identify which is the preferred alternative based on how well it meets the proposed action's objectives (purpose and need) and how it fared after the study team's evaluation, as presented in Section 6.2, *Comparison of Alternatives*. Additional discussion regarding the degree to which each action corridor alternative achieves the other desirable outcomes is also included.

Transportation and Traffic Operations

All of the action corridor alternatives would meet the proposed action's purpose and need by improving transportation and traffic operations throughout the study area. The degree to which the action corridor alternatives address select evaluation criteria, however, varies by alternative. The quickest or most direct end-to-end route was a measured criterion; however, note that most trips in the Corridor are between destinations and are not through-trips. Access to activity centers, areas of existing and future population and employment, and regional connectivity were also considered when comparing the alternatives.

CORRIDOR LENGTH

A comparison of the action corridor alternatives' lengths is presented in this Tier 1 DEIS in Chapter 2, *Alternatives*. The full-length action corridor alternatives and their options result in a range of values. Because the Corridor is anticipated to operate at free-flow conditions (that is, LOS C or better), a shorter alternative results in a shorter travel time from one end of the Corridor to the other. Travel demand modeling of the alternatives shows that only a small number of trips are actually through-trips, with most trips originating in the study area. All of the action corridor alternatives (and options) would result in

reduced travel time through the Corridor, relative to 2040 conditions with the No-Action Alternative. Alternative 1 (with W1a) would be the shortest through Corridor trip (48.1 miles north-to-south). Alternative 3 (with W1b, E2b, and E3c) would be the longest through Corridor trip (54 miles north-to-south)—approximately 12 percent longer than Alternative 1 (with W1a).

AVERAGE WEEKDAY TRAFFIC VOLUMES

Average weekday traffic volumes would vary substantially along the extent of each of the full-length action corridor alternatives. In general, the Western Alternatives would draw more traffic, given the closer proximity to existing populations in Queen Creek, Mesa, the San Tan Valley area, and Coolidge. The projected traffic volumes through the Corridor would decrease from north to south, so that in the southern end of the Corridor at I-10, the volumes would be one-tenth the volumes at the northern end. This information is further discussed in Appendix B, *Traffic Information*.

REGIONAL TRAFFIC CONGESTION

As discussed in Section 2.5, *Transportation Performance of the Alternatives*, all of the full-length action corridor alternatives would improve regional congestion throughout the study area compared with the No-Action Alternative. The amount of regional congestion relief varies by the action corridor alternative (and options). The No-Action Alternative would result in congested conditions for 46 percent of the VMT. Alternative 1 (with W1a) would result in the greatest reduction in congested conditions, with 33 percent of the VMT in congested conditions—a 28 percent reduction of VMT in congested conditions compared with the No-Action Alternative. Similar reductions in congested conditions would result with Alternatives 2, 3, and 4 and their options, with a range of 34 to 35 percent of the VMT in congested conditions. Alternatives 7 and 8 (with options) would result in 39 percent of VMT in congested conditions—still an improvement of 15 percent compared with the VMT in congested conditions with the No-Action Alternative.

Land Use Planning

With the exception of Coolidge and Florence, all of the municipal planning areas (MPAs) affected by the full-length action corridor alternatives are contained within one segment of the study area. Jurisdictions in the northern portion of the study area have not identified a preferred alternative.³ The Town of Florence's *General Plan* is generally consistent with Alternatives 6 or 7 (with E3a) in Segment 3. The City of Coolidge's *General Plan* is generally consistent with Alternatives 3 or 7 (with E3a) in Segment 3. In the southern portion of the study area, the City of Eloy's *General Plan* is generally consistent with Alternatives 1, 2, 5, and 6.

Pinal County's *Comprehensive Plan* does not identify a preferred alternative; however, the plan recognizes the important role ASLD will play in development of the county as a result of Superstition Vistas, a 275-square-mile area entirely in Pinal County that is managed by ASLD on behalf of State Trust beneficiaries. At the northern end of Superstition Vistas is another large ASLD parcel, Lost Dutchman Heights, within the Apache Junction MPA. Alternatives 5 through 8 are generally consistent with the planning for the Lost Dutchman Heights area.

Human Environment

Impacts on the human environment for each of the end-to-end action corridor alternatives are discussed as a sum of the parts—meaning the segment-by-segment evaluation of environmental impacts.

³ Any additional input received by ADOT following the *Corridor Selection Report* and public review process in 2017 will be incorporated and considered following the public review of the DEIS and will be included in the Final EIS and ROD.

Alternative 7 would have the lowest risk of impacts on the human environment because it incorporates the Eastern Alternatives in Segments 1, 3, and 4, which have lower risks of impacts on the human environment. Alternative 1 would have the greatest risk of impacts on the human environment because of the inclusion of the Western Alternatives in Segments 1, 3, and 4.

Built Environment

As with impacts on the human environment, impacts on the built environment for each of the end-to-end action corridor alternatives are also discussed as a sum of the parts. Alternative 7 would have the lowest risk of impacts on the built environment because it incorporates the Eastern Alternatives in Segments 1, 3, and 4, which have lower risks of impacts on the built environment. Alternative 1 would have the greatest risk of impacts on the built environment because it includes the Western Alternatives in Segments 1, 3, and 4.

Natural Environment

For the natural environment, the types of impacts evaluated varied throughout the Corridor's length. Other than earth fissures, none of the impacts are clear differentiators among the alternatives. Earth fissures are present throughout the Corridor; however, Alternatives 5 to 8 would avoid the high risk of earth fissures posed by the alternatives that use the Western Alternative in Segment 1 (Alternatives 1 to 4). A high risk of floodplain encroachment exists with Alternatives 2, 3, 6, and 7 (with E3a and E3c); however, this risk is mitigated when these alternatives are combined with E3b or E3d.

Stakeholder Input

Public input did not provide a clear consensus regarding a full-length action corridor alternative preference. Cooperating and participating agencies were asked for their preferences as part of the public input process. The Four Southern Tribes identified their preferences during stakeholder outreach in May 2017. The jurisdictions provided responses consistent with their adopted land use plans, but in several instances provided additional information regarding their preferences, or stated preferences regarding alternatives outside of their MPAs (as summarized in Appendix C, *Alternatives Screening*, with the full comments of stakeholders in the appendix to the report). Table S-6 summarizes agency responses received as part of the outreach effort.

Table S-6. Cooperating and participating agency preferences for an action corridor alternative

Agency	Full-length action corridor alternative								Stated preferences
	1	2	3	4	5	6	7	8	
Arizona Game and Fish Department	X								W1a, W2a, W3, W4
Arizona State Land Department							X		E1b, E2a, E3b, E4
City of Apache Junction						X	X		E1b, E2a, E3a; no preference in Segment 4
City of Coolidge			X				X		No preference in Segments 1 and 2; E3a or E3b; E4
City of Eloy	X	X			X	X			No preference in Segments 1, 2, and 3; W4
City of Mesa	X	X	X	X					W1a; no preference in Segments 2, 3, and 4
Flood Control District of Maricopa County									—
Phoenix-Mesa Gateway Airport Authority	X	X	X	X					W1a or W1b; no preference in Segments 2, 3, and 4
Pinal County		X	X						W1b, E2b, E3a or E3c; no preference in Segment 4
Salt River Project						X	X		E1b, E2a, E3a or E3c; no preference in Segment 4
Town of Queen Creek	X	X	X	X					W1a; no preference in Segments 2, 3, and 4
Four Southern Tribes					X			X	E1b, W2b, W3; no preference in Segment 4 ^a
U.S. Army Corps of Engineers									—
U.S. Bureau of Land Management									—
U.S. Bureau of Reclamation			X						W1a or W1b; E2a, E2b, or W2a; E3b, E3d, or W3; E4
U.S. Environmental Protection Agency	X								W1a, W2a, W3, W4

Notes: "X" indicated stated preference.

In instances where an agency commented, but did not provide a preference, the cell is left blank.

When preference in Segment 2 was left blank, connecting segment was noted where preferences in Segments 1 and 3 were stated.

Any additional input received by the Arizona Department of Transportation following the *Corridor Selection Report* and public review process in 2017 will be incorporated and considered following the public review of the Draft Environmental Impact Statement and will be included in the Final Environmental Impact Statement and Record of Decision.

^a During a series of meetings in May 2017, the Four Southern Tribes noted that they preferred the No-Action Alternative; however, if an action corridor alternative is selected, their preference among the action corridor alternatives is noted. Refer to the *Corridor Selection Report, North-South Corridor Study* (in Appendix C, *Alternatives Screening*).

Preferred Corridor Alternative

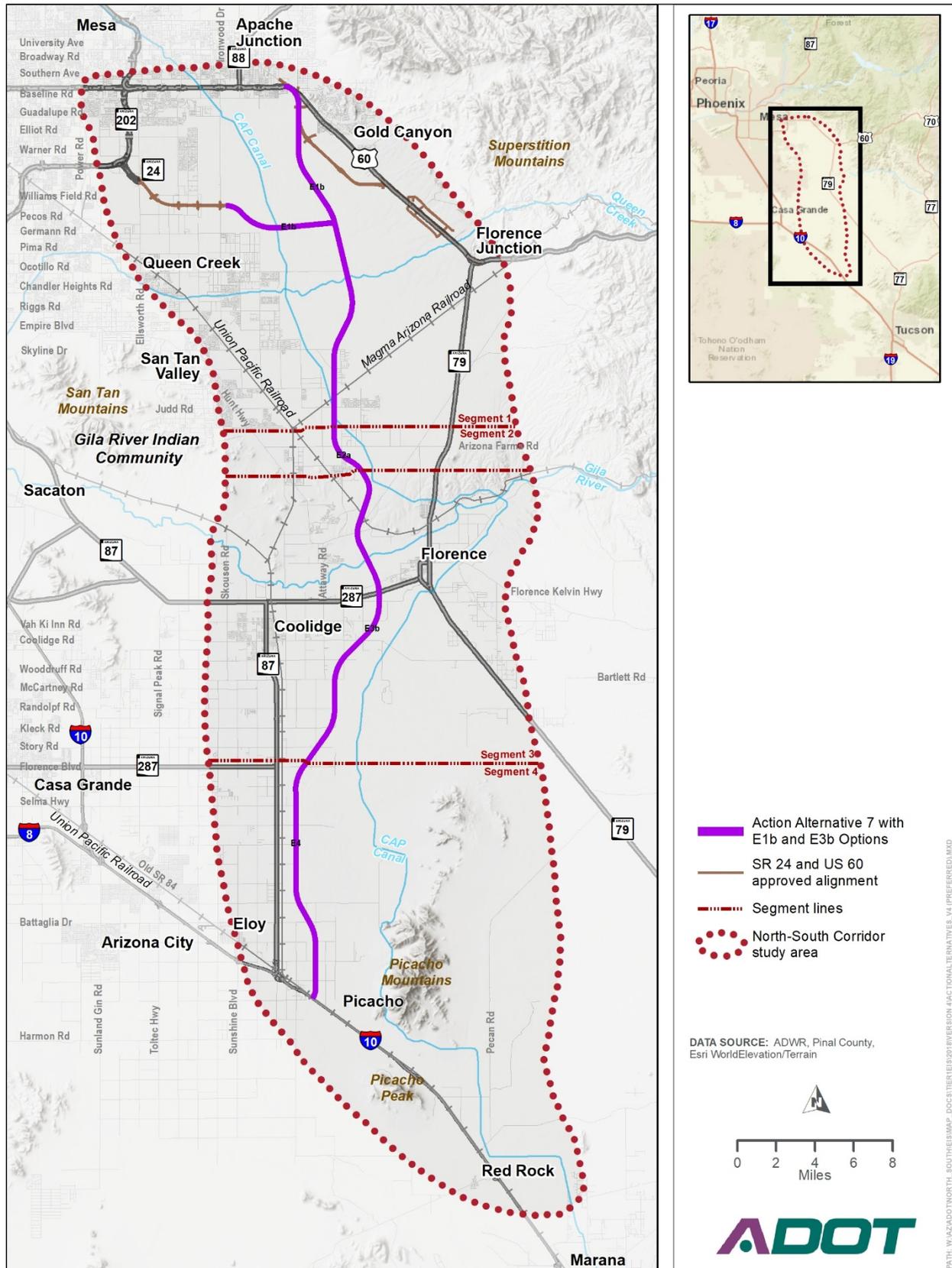
Based on the results of the analyses presented in this Tier 1 DEIS and summarized in Sections 6.2 (*Comparison of Alternatives*), 6.3.1 (*Identification of Action Corridor Alternatives in Each Segment*) by segment, and 6.3.2 (*Identification of Full-length Action Corridor Alternatives*) by full-length alternative, the following action corridor alternatives form the preferred corridor alternative:

- Segment 1 – E1b Alternative
- Segment 2 – E2a Alternative
- Segment 3 – E3b Alternative
- Segment 4 – E4 Alternative

This combination of action corridor alternatives creates Alternative 7, with the E1b and E3b options (as described in Section 2.3.2, *Full-length Action Corridor Alternatives*), and is recommended as the preferred corridor alternative (Figure S-6).

Alternative 7 best meets the proposed action's purpose and need while minimizing adverse effects on the human, built, and natural environments. During Tier 2 studies, when specific alignments are developed, evaluated, and advanced in the current 1,500-foot-wide preferred corridor, all efforts to avoid, minimize, or mitigate adverse impacts would be made.

Figure S-6. Preferred corridor: Alternative 7, with the E1b and E3b options



Coordination with Agencies, Stakeholders, and the Public

In accordance with requirements under the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) and the *North-South Corridor Study SAFETEA-LU Section 6002 Coordination Plan for Agency and Public Involvement* (ADOT 2017a), between 2010 and 2018, ADOT and FHWA held meetings with cooperating and participating agencies, study stakeholders, and members of the public. The outcome of these meetings indicated support by most attendees for the construction and operation of the proposed action.

ADOT has provided opportunities for agency and public involvement throughout the course of the study. Approximately 100 public stakeholder and 90 agency meetings were held between 2009 and 2018, and interested parties had opportunities to provide input through the study telephone hotline, website, email, traditional mail, and other means. Specific opportunities to provide input included:

- agency and public scoping meetings
- presentations at city council/local agency meetings
- presentations at industry association meetings
- individual agency and stakeholder coordination meetings
- feedback on newsletters
- public information workshops and meetings
- stakeholder agency progress meetings
- workshop and meetings with Native American tribes
- public comment period for action corridor alternatives

ADOT and the study team implemented an extensive public involvement program, meeting with numerous agencies, tribes, special interest groups, civic organizations, and businesses to discuss the study and to answer questions about the Corridor and the Tier 1 EIS environmental review process.

Throughout the study process, news releases, social media, newsletters, brochures, questionnaires, a study website, an online webmap (with features allowing people to make comments), and public meetings were used to disseminate information about the NSCS and to gather input from the public and other interested parties.

Next Steps

After ADOT publishes the Tier 1 DEIS and the public hearings and comment period are completed, ADOT will prepare a combined Tier 1 Final EIS (FEIS) and ROD, which will identify an action corridor alternative or the No-Action Alternative as the Selected Alternative. Should an action corridor alternative be selected and funding for further study become available, ADOT will then evaluate potential alignment configurations within the Selected Alternative in the Tier 2 NEPA process, continuing in its role as the lead agency under a Memorandum of Understanding for the Surface Transportation Project Delivery Program (23 United States Code § 327).

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