

4 Indirect and Cumulative Impacts

This chapter identifies and assesses the potential indirect and cumulative impacts the action corridor alternatives would have on the surrounding human, built, and natural environments.

4.1 Regulatory Context

CEQ regulations require consideration of indirect and cumulative impacts in an EIS. The regulations define indirect impacts as effects “which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems” [40 CFR § 1508.8(b)].

CEQ regulations define cumulative impacts as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR § 1508.7).

4.2 Methodology

The evaluation presented in this chapter for indirect and cumulative impacts considered past, present, and reasonably foreseeable future actions. For this assessment, existing conditions in the study area reflect the collective impacts of all past actions, such as growth and development in the study area. Present impacts include those caused by current, ongoing construction of any public or private projects in the study area. Reasonably foreseeable future conditions include those caused by implementation of the proposed action, other planned and programmed transportation projects, and other planned development that is likely to occur in the study area.

The methodology used in the assessment of indirect and cumulative impacts is based on FHWA’s *Secondary and Cumulative Impact Assessment in the Highway Project Development Process* (1992) and the American Association of State Highway and Transportation Officials’ *Assessing Indirect and Cumulative Impacts Under NEPA* (2016), both adapted to a Tier 1 EIS level of analysis. Detail on the methodology used to identify and assess potential indirect and cumulative impacts associated with the action corridor alternatives is provided below.

4.2.1 Indirect Impacts

The assessment of indirect impacts broadly considered growth-inducing impacts that could result from the proposed action, including secondary development that could generate additional traffic, population and/or job growth, economic benefits, or other impacts. The growth assessment qualitatively identified the areas that may experience indirect effects (areas of influence) by reviewing land use plans. Other indirect effects of the proposed action for each resource area, as applicable, are presented in Chapter 3, *Affected Environment and Environmental Consequences*.

4.2.2 Cumulative Impacts

Cumulative impacts of the proposed action were qualitatively assessed by reviewing long-range transportation plans developed by ADOT, MAG, SCMPO, CAG, Pinal County, and Maricopa County.¹ In

¹ The regional transportation plans used in the analysis have horizon years of 2040; however, other plans such as Pinal County’s 2008 *Regionally Significant Routes for Safety and Mobility Final Report* and 2017 map update have no identified horizon year.

addition, through stakeholder outreach to support this Tier 1 FEIS and ROD, ADOT met with Pinal County and the cities and towns traversed by the action corridor alternatives to confirm the status of recent developments (past and present actions) and proposed and planned projects (foreseeable actions). As data were collected and mapped, the jurisdictions confirmed the information prior to the analyses in this Tier 1 FEIS and ROD. A qualitative assessment of cumulative impacts focused on trends for the environmental resources' health and viability and how the proposed action may or may not contribute to such trends.

4.3 Affected Environment

This section describes conditions in the study area relevant to indirect effects and cumulative impacts, including land use, population and employment, and transportation facilities.

4.3.1 Land Use

The study area has a mix of incorporated municipal and unincorporated county land, including land owned by ASLD. As discussed in Section 3.2, *Land Use*, the study area encompasses approximately 577,500 acres, and primary existing land uses in the study area consist of undeveloped (69 percent) and agricultural (19 percent) land uses. The remaining land uses are as follows: residential (8 percent), industrial (2 percent), commercial (1 percent), public/quasi-public (1 percent), and open space (1 percent). Most undeveloped and agricultural land in the study area is in Pinal County, and most Native American land in the study area (approximately 12,600 acres) is undeveloped.

4.3.2 Population and Employment

Based on 2015 population estimates from the Arizona Department of Administration Office of Employment and Population Statistics, the population and employment of Pinal County, in which most of the study area is located, are 406,463 residents and 68,364 jobs. In 2010, according to AZTDM2, the population and employment in the study area were 284,199 and 50,032, respectively. The concentrations of people and jobs in the study area are primarily near the Phoenix-Mesa Gateway Airport, Apache Junction, Queen Creek, San Tan Valley, Florence, Coolidge, and Eloy. In addition, jobs are located along UPRR rail lines and along freeways and highways such as US 60, SR 202L, SR 24, SR 79, SR 287, SR 87, and I-10.

4.3.3 Transportation Facilities

The road network in the Coolidge area has developed over time as a grid system that extends to Eloy. Through Florence and areas north, the grid system is interrupted by the Gila River, UPRR, Copper Basin Railway, Magma Arizona Railroad, CAP Canal, and other geographic constraints that have hindered the development of a robust transportation network. Currently, travelers heading north from Tucson 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 US 60 to head east. SR 79 provides access along the eastern edge of the study area north of Florence; south of Florence, SR 79 extends 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, operating as a local route through Florence with numerous access points and businesses along the route.

Roads that connect with the freeways and highways are: Hunt Highway, Ellsworth Road, Ironwood Drive/Gantzel Road, Bella Vista Road, Arizona Farms Road, Attaway Road, and Cactus Forest Road. Public transit service in Pinal County is limited. Current public transit options include the Central Arizona Regional Transit bus line that connects Florence, Coolidge, Central Arizona College, and Casa Grande, and the Cotton Express bus system that provides deviated fixed-route bus service and on-demand service throughout Coolidge.

UPRR has two lines in the study area—the Sunset Route and the Phoenix Subdivision. The Sunset Route crosses the entire state of Arizona east-to-west, passing through Cochise, Benson, Tucson, Picacho, Eloy, Casa Grande, Maricopa, Gila Bend, Wellton, and Yuma. Amtrak also provides passenger service on the Sunset Route, but does not currently have stops in the study area. The Phoenix Subdivision runs north from the Sunset Route along SR 87 into Coolidge, where it turns to the northwest toward the Phoenix metropolitan area. The Phoenix Subdivision connects the Sunset Route with Phoenix and intersects with the Copper Basin Railway at Magma Junction, the dormant Magma Arizona Railroad at Magma Junction, and BNSF Railway at Phoenix.

4.4 Environmental Consequences

The following sections discuss the potential indirect and cumulative impacts of the No-Action Alternative and the action corridor alternatives.

4.4.1 No-Action Alternative

Under the No-Action Alternative, the proposed action would not be built, and no new indirect or cumulative impacts are anticipated beyond those that could result from other projects. However, implementation of planned and programmed transportation projects would not adequately handle future land use development and population and employment growth in the study area. Planned land development projects and planned and programmed transportation projects that would occur with the No-Action Alternative are discussed in the following sections.

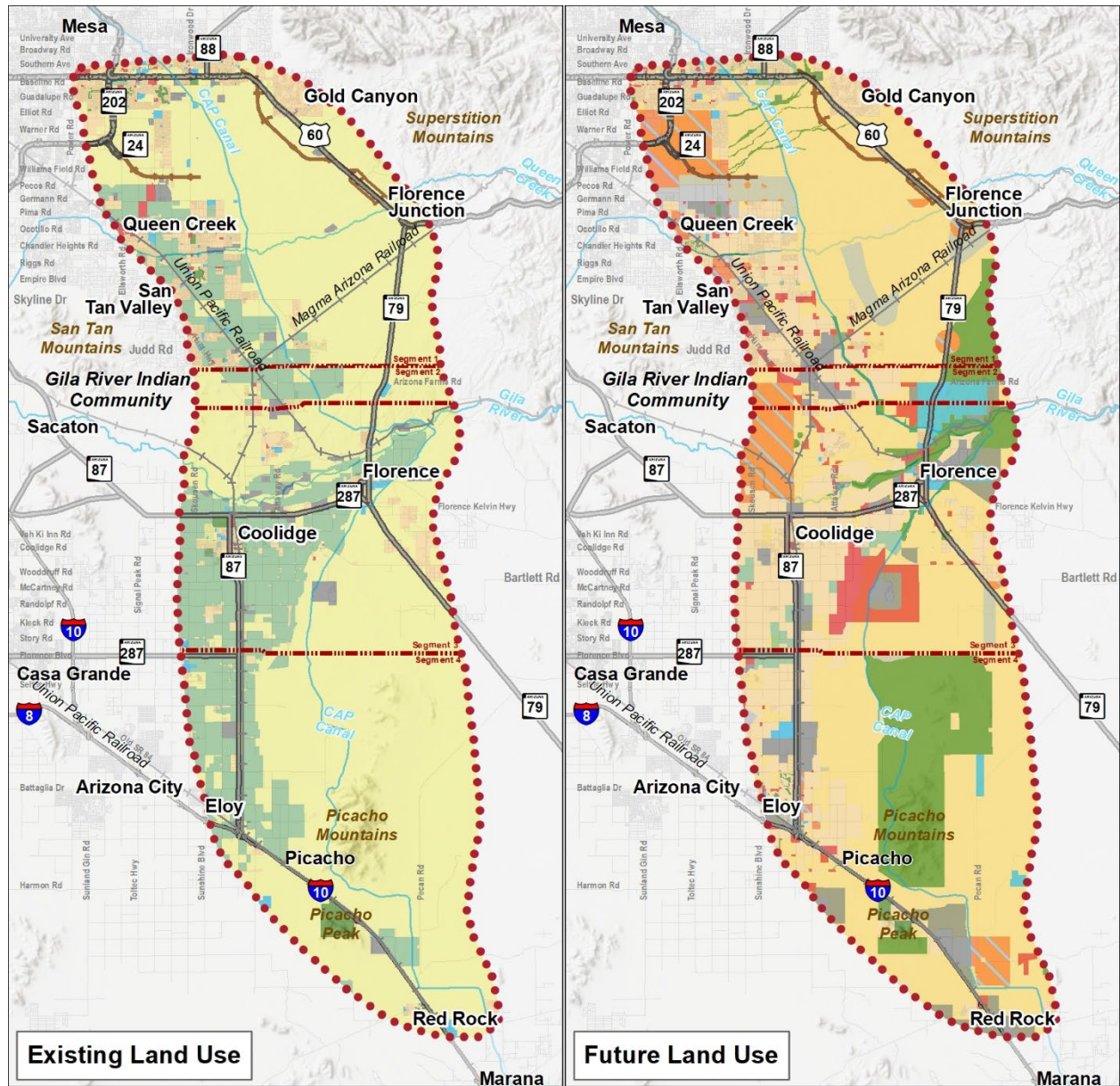
4.4.2 Future Land Uses

According to municipal and county land use plans, nearly 500,000 acres today classified as agricultural or undeveloped would be converted to residential and commercial development at build-out. According to these plans, future land uses would be 56 percent residential and 4 percent commercial—representing 60 percent of the study area. Over 100 planned or proposed residential developments (subdivisions or master-planned communities) and several economic activity centers that may be constructed by 2040 would be located throughout the study area. Much of the commercial development would be concentrated along Hunt Highway and in Coolidge where the Westcor Shopping Mall, a new regional shopping area, is planned. Table 4.4-1 describes some of the larger planned developments in the study area (these locations are shown in Figure 3.2-6). Figure 4.4-1 compares existing and future land uses in the study area, based on current land use plans. It is important to note that the actual time frames for the development identified in the map showing the future land uses are unknown at this time.

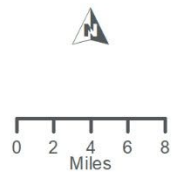
Table 4.4-1. Current and planned major land development projects

Project	Description	Status
Lost Dutchman Heights	The proposed project entails developing 7,700 acres of Arizona State Land Department land into 40,000 housing units, 6 to 8 million square feet of commercial space, and approximately 250 acres of light industrial business park. The proposed project is east and west of the Central Arizona Project Canal, extending from Meridian Road to Mountain View Road, and south of U.S. Route 60, from Baseline Road to Elliot Road.	The proposed project is incorporated in the Apache Junction <i>General Plan</i> (2010) and <i>Comprehensive Transportation Study</i> (2012).
Superstition Vistas	The proposed project entails developing 275 square miles of Arizona State Land Department land into a residential development with up to 1 million residents, and commercial and open space land uses. The proposed project extends from Apache Junction to Florence.	A comprehensive plan for the proposed project area was completed in 2012. Construction of the project is anticipated to take place over several decades.
Mesa Gateway Employment Center	The proposed project entails developing a regional employment center that would attract up to 100,000 jobs in the area surrounding the Phoenix-Mesa Gateway Airport.	The proposed project is included in a 2008 strategic plan.
Anthem at Merrill Ranch	The proposed project entails developing a large master-planned community (3,100 acres) of 8,500 housing units in the Florence portion of the study area.	At this time, approximately 2,500 single-family homes have been built.
Florence Copper	The proposed project entails developing an active 1,342-acre copper mining site into commercial production.	The site currently operates in-situ copper recovery production test facilities including injection, recovery, and monitoring wells; solution storage tanks; and a water impoundment.
Westcor Shopping Mall	The proposed project entails developing a large regional commercial center at the southwestern corner of Bartlett and Wheeler Roads, southeast of downtown Coolidge.	Not available
Inland Port Arizona and Pinal Logistics Park	The proposed project entails developing an inland port and industrial site on approximately 1,500 acres east of State Route 87 between Hanna and Houser Roads in Coolidge.	Not available

Figure 4.4-1. Existing and future land uses, 2015 and 2040



- | | | | |
|-----------------|---------------------|--------------|------------------------------------|
| Land Use | Business Park | Residential | North-South Corridor study area |
| Industrial | Public/Quasi-Public | Agricultural | Segment lines |
| Commercial | Mixed-use | Open Space | SR 24 and US 60 approved alignment |
| Neighborhood | Undeveloped | | |



DATA SOURCE: ADWR, Pinal County, Esri WorldElevation/Terrain

4.4.3 Future Population and Employment Growth

Population and employment in the study area are expected to grow substantially by 2040. Table 4.4-2 presents existing and projected population and employment in Maricopa, Pinal, and Pima Counties (including those areas outside the study area). Substantial population and employment growth is forecast, particularly in Pinal County, where the 2040 population is expected to double and employment is expected to increase more than 1.75 times.

Table 4.4-2. 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

Table 4.4-3 summarizes population and employment growth in the study area. For the study area, existing population and employment numbers are available only from the current MPO projection series that reports figures in 10-year increments. Population in the study area is projected to more than double and employment is expected to increase by almost 350 percent by 2040. Much of this growth will occur outside existing incorporated municipal limits but in identified MPAs.

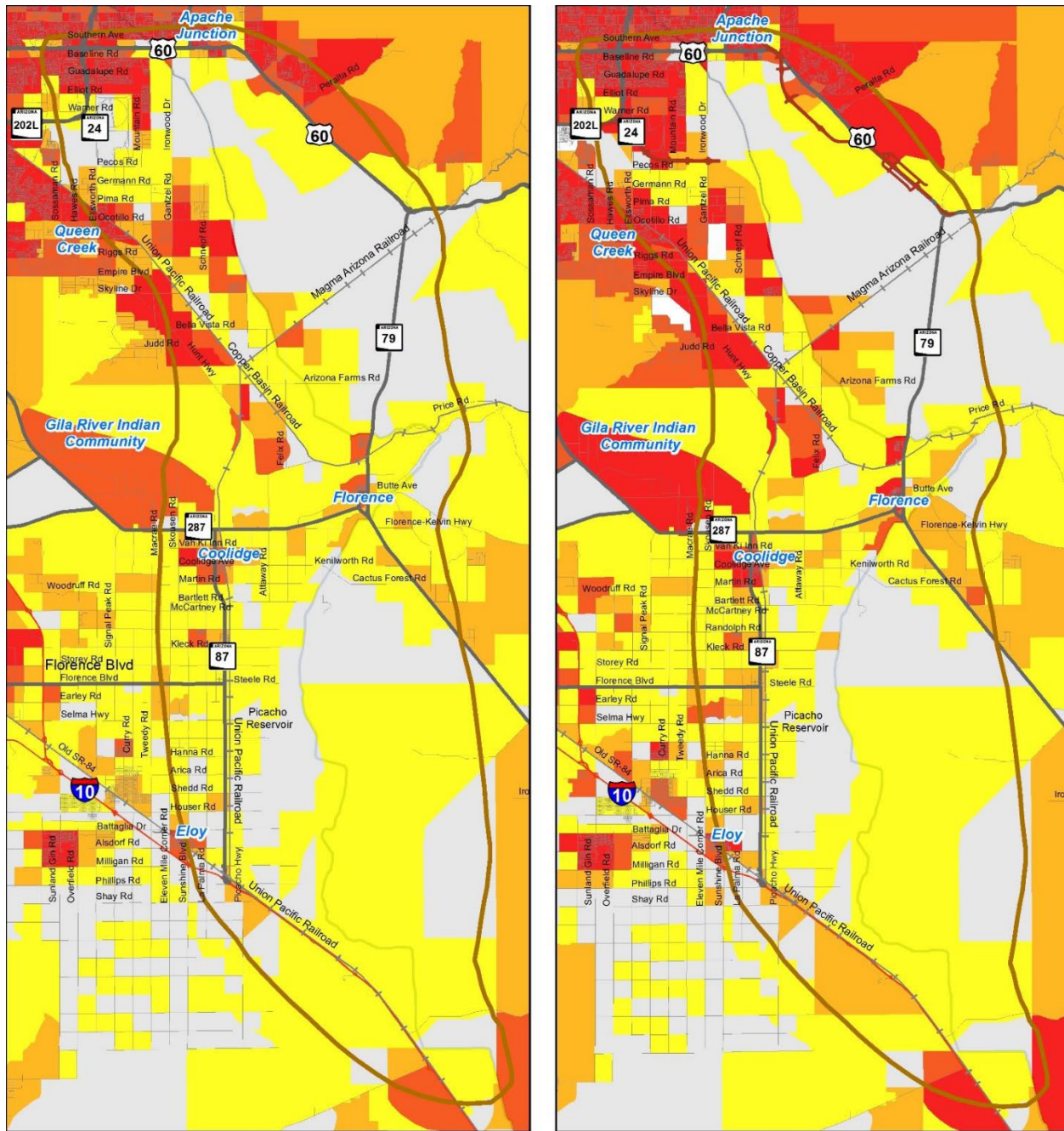
Table 4.4-3. Study area population and employment, 2015–2040

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

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

Figures 4.4-2 and 4.4-3 provide graphical comparisons of existing and future population and employment for the study area, respectively. In 2040, population and employment growth are projected to occur primarily near the Phoenix-Mesa Gateway Airport, Apache Junction, Queen Creek, and the Gila River Indian Community.

Figure 4.4-2. Existing and future population, 2015 and 2040



2015 Population

2040 Population

Legend

- | | |
|--------------------------------------|-------------------|
| —+—+— Railroads | Population |
| — Interstate Highway | 0 |
| — U.S. / State Highways and Freeways | 1 - 99 |
| — Local Roadway | 100 - 599 |
| ○ North-South Corridor Study Area | 601 - 1999 |
| — SR 24 and US 60 approved alignment | > 1999 |

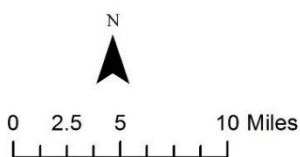
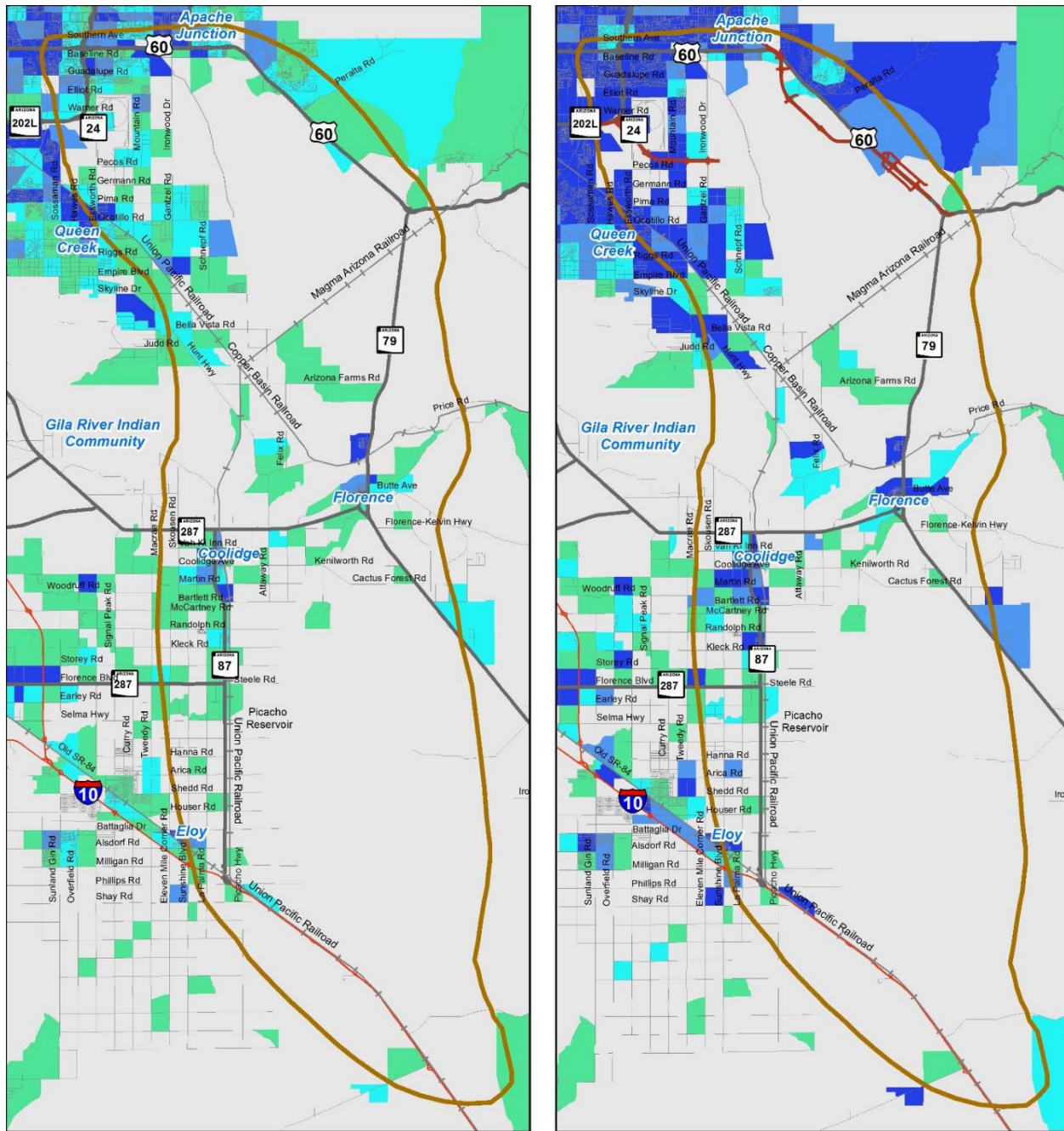


Figure 4.4-3. Existing and future employment, 2015 and 2040

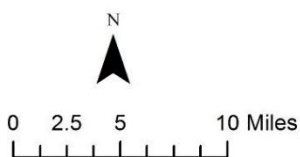


2015 Employment

2040 Employment

Legend

- | | |
|--------------------------------------|-------------------|
| —+— Railroads | Employment |
| — Interstate Highway | 0 |
| — U.S. / State Highways and Freeways | 1 - 50 |
| — Local Roadway | 51 - 200 |
| ○ North-South Corridor Study Area | 201 - 400 |
| — SR 24 and US 60 Approved Alignment | > 400 |



4.4.4 Planned and Programmed Transportation Projects

Adopted transportation improvement plans developed by ADOT, MAG, SCMPO, CAG, Pinal County, and Maricopa County were reviewed to identify other major transportation projects in and surrounding the action corridor alternatives that may involve capacity improvements. Table 4.4-4 lists the identified transportation projects that are programmed in the respective agency’s transportation improvement plan.

Table 4.4-4. Other programmed transportation projects

No.	Project	Description	Segment
1	Queen Creek Road widening ^a	Widen Queen Creek Road from Ellsworth to Meridian Roads	1
2	Crismon Road extension ^a	Crismon Road continuity from Guadalupe to Ocotillo Roads	1
3	Hawes Road widening ^a	Widen Hawes Road from Elliot to Baseline Roads	1
4	Hunt Highway widening ^a	Widen Hunt Highway from Gary Road to State Route 79	1, 2, 3
5	Meridian Road extension/ widening ^a	Widen and complete Meridian Road from U.S. Route 60 to Hunt Highway	1
6	Elliot Road widening ^a	Widen Elliot Road from Power to Meridian Roads	1
7	Germann Road extension/ widening ^a	Construct/widen Germann Road from Meridian Road to Ironwood Drive	1
8	Interstate 10 widening ^b	Widen Interstate 10 from Earley Road to Interstate 8	4
9	Interstate 10 widening ^b	Widen Interstate 10 from State Route 87 to Picacho	4
10	Kortsen/Kleck Road extension ^c	Extend Kortsen/Kleck Road from North-South Corridor alignment (approximately Wheeler Road) to Interstate 10	3
11	Ocotillo Road widening ^a	Widen Ocotillo Road from Gantzel to Kenworthy Roads	1
12	Pecos Road widening ^a	Widen Pecos Road from Ellsworth to Meridian Roads	1
13	Ray Road widening ^a	Extend Ray Road from Signal Butte to Meridian Roads	1
14	Selma Highway widening ^c	Widen Selma Highway from State Route 87 to Eleven Mile Corner Road	4
15	Signal Butte Road widening ^a	Widen Signal Butte Road from Elliot to Ray Roads	1
16	Riggs Road extension ^d	Construct new three-lane road from Ellsworth to Meridian Roads	1

Note: Projects noted are only through 2017, to reflect modeling and other planning assumptions made at that time. Additional projects may have been constructed or added to funded capital improvement plans.

^a Maricopa Association of Governments (2017) ^b Arizona Department of Transportation (2017c) ^c Pinal County (2017b)

^d Maricopa County Department of Transportation (2017)

4.4.5 Action Corridor Alternatives

4.4.5.1 Indirect Effects

With the proposed action, the future land use, population, and employment conditions described for the No-Action Alternative would occur; however, the North-South Freeway would be built and operate in the study area.

Growth Effects

Land development and population and employment growth are projected to occur in the study area by 2040, regardless of whether the proposed action is implemented. In their general plans, study area municipalities have identified how and to what extent land would be converted to support new development. These land use plans, with the exception of Apache Junction and Mesa, reference the

North-South Freeway. By acknowledging the proposed freeway in their land use plans, study area municipalities expect the proposed action to support and facilitate this development to some degree and are planning accordingly. Therefore, the proposed action has the potential to result in growth-inducing impacts—in particular, secondary development that could generate additional traffic, population and employment growth, economic benefits, or other impacts.

The traffic interchanges along the North-South Freeway would substantially improve access between the local communities and the larger region, which may spur additional or faster development at these locations. Residential communities near these traffic interchange locations would have better access to jobs, schools, shopping, and services, while commercial developments near the interchanges would have good access to suppliers and customers.

The types of indirect environmental impacts that could potentially result from induced development or changes are described below:

- Traffic and transportation – Increased traffic volumes and congestion may occur if secondary development were induced by the proposed action.
- Land use – Changes in land uses or land use patterns may arise if currently unanticipated secondary development occurs as a result of the proposed action, potentially causing increases in property values or greater intensity of land development.
- Population and employment – Secondary development resulting from the proposed action may potentially change socioeconomic conditions in the study area, such as increasing or changing population and employment, and may positively affect business sales and revenues.
- Minority and low-income populations and community facilities – Secondary development has the potential to affect communities and minority and low-income populations through changes in development patterns, traffic, or property values specific to their neighborhoods. Benefits to these communities may also result with improved access to housing, employment, and educational opportunities.
- Hydrology, floodplains, and water resources – Secondary development has the potential to affect surface waters, aquifers, floodplains, and wetlands, and may introduce runoff, segmentation, and changes in hydrology. The project may influence the design and construction of new structures, which may affect erosion and sedimentation. Secondary development will likely increase the amount of impervious surfaces within the watershed, which would increase surface flows entering Waters. Resulting stream flow and velocity changes during storms may result in increased flooding and stream degradation. In addition, these changes may affect the quality and quantity of water available for uses including recreation, habitat, drinking, or agricultural purposes.
- Biological resources – Secondary development has the potential to affect vegetation and wildlife habitat, resources, and corridors. Secondary development may cause or increase gradual changes in species composition, diversity, genetic makeup, and/or health because of impacts on habitat, habitat fragmentation, or genetic isolation. In addition, secondary development may introduce additional invasive species to the study area.
- Cultural resources – Secondary development may potentially affect historical or archaeological sites.
- Farmland – Secondary development has the potential to affect active farmland (including prime and unique farmland), which may include the loss, impairment, and subdivision of agricultural parcels.
- Air quality/noise/energy/climate change – Increased traffic from secondary development has the potential to increase localized noise levels and emissions of air pollutants. It may also affect energy use and climate change.

- Hazardous waste/materials – Secondary development has the potential to affect existing contaminated or hazardous material sites or result in the generation of hazardous waste or potential spills.

The areas with the greatest potential for growth effects are those that are currently the least developed in the study area. With the addition of a new freeway, particularly in areas where a service traffic interchange is proposed, the improved access to and from these locations could support its attractiveness for development. In all segments, the proposed action corridor alternatives are located in mostly undeveloped areas to avoid or minimize impacts on residents, businesses, community facilities, cultural resources, and other natural and built environment resources. In Segment 1, the Eastern Alternatives pass through areas south of US 60 that are predominantly undeveloped; therefore, the Eastern Alternatives may potentially result in unanticipated development or expedite planned development along the Corridor more so than the Western Alternatives.

The Segment 2 action corridor alternatives are located in largely undeveloped areas near one another. With the Arizona Farms Road crossing the center of Segment 2, a new freeway and traffic interchange may expedite development of this area.

In Segment 3, the action corridor alternatives are near existing and planned development, with the W3 Alternative closer to Coolidge and the E3a, E3b, E3c, and E3d Alternatives closer to Florence. Each action corridor alternative would be just as likely as another to result in unanticipated development or expedite planned development along the Corridor.

In Segment 4, the E4 Alternative generally follows a route that is predominantly undeveloped, although it is within 2 miles of the W4 Alternative, which is coincident with SR 87 in Eloy. SR 87 and the W4 Alternative cross a largely undeveloped portion of Eloy, and the nearness of the E4 Alternative to the W4 Alternative results in a negligible likelihood of either Segment 4 action corridor alternative promoting more growth than the other.

Other Potential Indirect Effects

The action corridor alternatives have the potential to result in indirect effects other than those spurred by additional growth in the study area. These potential effects are summarized below. Further evaluation of potential indirect effects would be conducted during Tier 2 studies when more details of the freeway design and operation are known.

- Economic effects – Improved access to employment, retail, and tourist attractions may promote business and tourism.
- Parks and recreational resources effects – Improved access to recreational features and facilities may increase their use and improve the population's health. Proximity of the proposed transportation facility may alter the visitor experience at recreational destinations.
- Cultural resources effects – Increased access to unknown culturally sensitive properties may degrade the sites.
- Hazardous/contaminated materials effects – Increased goods movement and other traffic through the study area may increase the potential for spills or releases to land not currently affected by hazardous materials.
- Biological resources effects – Introduction of contaminants, increased noise, and/or increased light may change the quantity and quality of habitat and the resources that species rely on for food, hunting/scavenging, and breeding. There is a potential for increased wildlife mortality attributable to wildlife-vehicle collisions on the new transportation facility.

4.4.5.2 Cumulative Impacts

The proposed action, combined with reasonably foreseeable planned or programmed transportation projects described for the No-Action Alternative, would result in a more efficient and enhanced transportation system, which would lead to better mobility, air quality, and safety. In addition, the proposed action would provide a regional connector that would meet existing and projected travel demand. In particular, the proposed action would enhance traffic circulation and provide access to planned growth areas.

Although implementation of the proposed action would result in some cumulative benefits, it may also result in cumulative adverse impacts. Implementing the proposed action, combined with reasonably foreseeable planned and programmed transportation projects, would convert more undeveloped and agricultural land to a transportation use. Converting undeveloped land to a transportation use may affect natural resources (for example, plant and wildlife species, habitats, and corridors) and cultural resources (for example, historical and archaeological sites). In addition, converting agricultural land may result in a greater loss of active farmland (including prime and unique farmland), impairment of agricultural productivity, and subdivision of agricultural parcels.

In Segment 1, all action corridor alternatives would go through large planned developments in the region—Superstition Vistas and Lost Dutchman Heights. Most impacts in Segment 1 would occur on ASLD land. With either the Eastern or Western Alternatives, ADOT would coordinate with developers as their projects advance through planning, design, and construction. Several existing roadways are planned for extension and/or widening, including Baseline Road, Guadalupe Road, Elliott Road, Bella Vista Road, Ironwood Drive, Ray Road, Pecos Road, Ocotillo Road, and Skyline Drive. These roadway improvements and the proposed US 60 bypass were considered in developing the action corridor alternatives and evaluating transportation mobility, as presented in Chapter 2, *Alternatives*.

In Segment 2, there are no large-scale developments that may result in cumulative impacts if constructed or operated at the same time as the proposed action.

In Segment 3, the E3b, E3d, and W3 Alternatives would be located on either side of the Anthem at Merrill Ranch development, which is planned for expansion. The E3a, E3b, E3c, and E3d Alternatives would be located east of the Florence Copper project, and all action corridor alternatives would be near the proposed Westcor Shopping Mall in Coolidge.

In Segment 4, the Inland Port Arizona and Pinal Logistics Park development is planned between the Eastern and Western Alternatives. As with the planned developments in Segment 1, ADOT would coordinate with the developers as their projects advance through planning, design, and construction. Roadways with planned extensions and widenings in Segments 3 and 4 include Hunt Highway, SR 287, McCartney Road, Selma Highway, Kortsen Road, Kleck Road, and I-10. These roadways were considered in evaluating transportation mobility, as presented in Chapter 2, *Alternatives*.

Potential cumulative impacts would be further evaluated during the Tier 2 phase when more details of the freeway design and operation are known. Specific cumulative environmental impacts related to construction activities would be assessed based on the timing of the anticipated construction of the North-South Freeway and the construction of other land development and/or transportation facility projects within a similar timeframe. Long-term effects of the North-South Freeway in conjunction with other improvements would be assessed based on the anticipated years of operation of related developments and/or transportation facilities.

4.4.6 Potential Avoidance, Minimization, and Mitigation Strategies

To avoid, minimize, or mitigate any potential indirect effects and cumulative impacts, ADOT would collaborate with local jurisdictions, resource agencies, and private stakeholders to participate in

discussions regarding development in the North-South Corridor. These efforts would coordinate local land use planning, local and regional connectivity, and context-sensitive design, while preserving and enhancing wildlife habitat and connectivity. Specific mitigation measures, to the extent required, would be identified as part of Tier 2 studies when more details of the freeway design and operation are known and project-specific indirect and cumulative impacts are identified. All mitigation strategies to address direct impacts on resources in the study area would also mitigate cumulative impacts.

Appendix D, *Summary of Avoidance, Minimization, and Mitigation Strategies*, contains a consolidated list of strategies to address environmental impacts.

4.4.7 Subsequent Tier 2 Analysis

As part of Tier 2 studies, indirect and cumulative impacts would be analyzed in more detail, focusing on a specific project area. The status of planned transportation projects in the study area, particularly those near the alignments developed in Tier 2 studies, would be reevaluated to assess cumulative impacts. In addition, up-to-date land use plans, zoning regulations, and development plans would be reviewed.

4.4.7.1 Conclusion

The purpose of this Tier 1-level indirect and cumulative impacts analysis was to evaluate the effect of the action corridor alternatives on community and environmental resources. Land development and population and employment growth are projected to continue to occur without the proposed action because the study area has readily available land and close proximity to the urbanized areas of metropolitan Phoenix. This close proximity is one of the reasons why the area has changed substantially, and will continue to change from agricultural uses to suburban development. However, the proposed action would have the potential to result in growth-inducing impacts from secondary development and in cumulative impacts from converting undeveloped land to a transportation use. As part of Tier 2 studies, indirect and cumulative impacts would be analyzed in more detail, focusing on a specific project area.

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