

# CHAPTER 4

## *Affected Environment, Environmental Consequences, and Mitigation*

### BACKGROUND INFORMATION

This chapter presents pertinent information regarding the existing social, economic, and environmental setting of the proposed action. It also presents findings relative to the evaluation of potential environmental consequences of three action alternatives in the Western Section, one action alternative in the Eastern Section, and the No-Action Alternative (see Chapter 3, *Alternatives*, for information regarding the alternatives' design features). Where applicable, measures to avoid, reduce, or otherwise mitigate environmental impacts are described.

In accordance with National Environmental Policy Act (NEPA) provisions, substantial discussion is given to those elements of the environment most affected by the proposed action. Other elements of the environment are discussed to a lesser degree in the context of the chapter. Table 4-1 provides a summary of topics, content, and intended benefits to the reader.

#### Can the Impacts Change and, If So, How?

Findings relative to impacts presented in this chapter could change. The reasons for future changes, which would be presented in the Final Environmental Impact Statement (FEIS) and record of decision (ROD), are based on, but not limited to:

- refinement in design features through the design process
- updated aerial photography as it relates to growth in the Western Section of the Study Area
- communications with the City of Phoenix, the Gila River Indian Community (Community), and other stakeholders regarding measures to minimize harm to resources of the South Mountains afforded protection under Section 4(f)
- potential permission provided by the Community to develop action alternatives on Community land
- responses to public input
- potential changes to traffic forecasts as updated regularly by the Maricopa Association of Governments (MAG)
- potential changes regarding updated census data
- potential regulatory changes by local, State, or federal agencies

As design would progress, refinements would be made. Cost estimates for construction, right-of-way (R/W)

acquisition, relocation, and mitigation would be updated on a regular basis.

Design enhancements would reduce impacts, enhance cost efficiencies, and/or accommodate other planning activities.

Even with these factors affecting findings, it is anticipated the effects would be roughly equivalent among the alternatives and, consequently, impacts would be comparatively the same. The assumption would be confirmed if and when such changes were to occur.

Consequently, mitigation measures presented in the chapter are considered by the Arizona Department of Transportation (ADOT) and Federal Highway Administration (FHWA) as possible future commitments to be implemented to avoid, reduce, or otherwise mitigate environmental impacts associated with the proposed action. The discussion of these mitigation measures in the Draft Environmental Impact Statement (DEIS) does not obligate ADOT to these specific measures. ADOT, along with FHWA, may choose to modify, delete, or add measures to mitigate impacts. If this were to occur, these modifications to the mitigation measures would be explained in detail in the FEIS or ROD, depending on when the modifications occur. Final commitment to mitigation measures would be made in the ROD.

**Review of technical reports, predecisional reports, and memorandums**

Technical reports, predecisional reports, and memorandums can be made available for review by appointment—with the exception of the cultural resources technical reports (because of the sensitive information they contain)—at ADOT Environmental Planning Group (EPG), 1611 W. Jackson St., Phoenix, AZ 85007. Special requests for portions of the cultural resources reports will be considered by ADOT on a case-by-case basis. These reports examine existing conditions and assess potential impacts on existing conditions.



**Table 4-1** Affected Environment, Environmental Consequences, and Mitigation Content Summary, Chapter 4

Topic	Page	Highlights	Reader Benefit
Background Information	4-1	<ul style="list-style-type: none"> <li>• Discussion of the changing nature of environmental assessments as the proposed action and No-Action alternatives progress through time and through the design process (if an action alternative were to become the Selected Alternative)</li> <li>• Reasons the environmental assessment could change over time and implications to the EIS<sup>a</sup> process</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding of how assessments of social, economic, and environmental impacts fit into the EIS process</li> <li>• Understanding of how mitigation measures do not become full ADOT<sup>b</sup> commitments until issuance of a record of decision</li> </ul>
Land Use Social Conditions Title VI and Environmental Justice Displacements and Relocations Economic Impacts Air Quality Noise Water Resources Floodplains Waters of the United States Topography, Geology, and Soils Biological Resources Cultural Resources Prime and Unique Farmlands Hazardous Materials Visual Resources Energy Temporary Construction Impacts Material Sources and Waste Material Irreversible and Irretrievable Commitment of Resources Relationship between Short-term Uses of the Environment and Long-term Productivity Secondary and Cumulative Impacts	4-3 4-20 4-29 4-39 4-46 4-58 4-80 4-93 4-102 4-108 4-113 4-117 4-128 4-149 4-152 4-155 4-160 4-161 4-164 4-165 4-166 4-167	<ul style="list-style-type: none"> <li>• Description of relevant aspects of the social, economic, and environmental context (“affected environment”) of the three action alternatives in the Western Section, one action alternative in the Eastern Section, and the No-Action Alternative</li> <li>• Evaluation of the magnitude and intensity of the various alternatives on the resources of concern (“environmental consequences”)</li> <li>• Description and explanation of appropriate measures that would be taken to avoid, reduce, or otherwise lessen the magnitude and intensity of the various alternatives’ impacts (“mitigation measures”)</li> <li>• A conclusion at the end of each section explains the relative context, intensity, and magnitude of the impacts on the resources of concern within the overall scope of the EIS analyses. Each conclusion is not intended to restate findings presented in each section but appropriately highlights noteworthy aspects of the information presented.</li> </ul>	<ul style="list-style-type: none"> <li>• Resource-by-resource understanding of the social, economic, and environmental impacts of the various action and No-Action alternatives</li> <li>• Resource-by-resource understanding of proposed mitigation measures</li> </ul>
Conclusions	4-178	<ul style="list-style-type: none"> <li>• Action alternatives differentiated by the impacts each would cause</li> <li>• Overall chapter conclusions do not summarize data already presented; rather, they highlight noteworthy observations and conclusions drawn from observations of the data.</li> </ul>	<ul style="list-style-type: none"> <li>• Integrated summary of the scientific and analytical basis for comparison of the social, economic, and environmental impacts associated with the various alternatives</li> </ul>

<sup>a</sup> environmental impact statement <sup>b</sup> Arizona Department of Transportation