



Prime and Unique Farmland Report

In support of the
Environmental Impact Statement

South Mountain Transportation Corridor in Maricopa County, Arizona

Arizona Department of Transportation
Federal Highway Administration
in cooperation with
U.S. Army Corps of Engineers
U.S. Bureau of Indian Affairs
Western Area Power Administration



November 2012

Federal-aid Project Number: NH-202-D(ADY)
ADOT Project Number: 202L MA 054 H5764 01L



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Abstract: This document assesses and describes the effects on prime and unique farmland that would occur as a result of the construction and operation of the proposed South Mountain Freeway, as adopted in the 2003 *Regional Transportation Plan*. Contents of this document will be presented in Chapter 4 of the South Mountain Transportation Corridor Environmental Impact Statement.

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List of Acronyms and Abbreviations

ADOT	Arizona Department of Transportation
C	Central
C.F.R.	Code of Federal Regulations
E	Eastern
E1	E1 Alternative
EIS	environmental impact statement
FHWA	Federal Highway Administration
FPPA	Farmland Protection Policy Act
FR	Full Reconstruction
I-10	Interstate 10
LESA	Land Evaluation and Site Assessment
MAG	Maricopa Association of Governments
NRCS	Natural Resources Conservation Service
PR	Partial Reconstruction
R/W	right-of-way
SMTTC	South Mountain Transportation Corridor
SR	State Route
TI	traffic interchange
UA	urbanized area
USDA	U.S. Department of Agriculture
W	Western
W101CFR	W101 Alternative, Central Option, Full Reconstruction
W101CPR	W101 Alternative, Central Option, Partial Reconstruction
W101EFR	W101 Alternative, Eastern Option, Full Reconstruction
W101EPR	W101 Alternative, Eastern Option, Partial Reconstruction
W101WFR	W101 Alternative, Western Option, Full Reconstruction
W101WPR	W101 Alternative, Western Option, Partial Reconstruction
W59	W59 Alternative
W71	W71 Alternative

Glossary

affected environment	Those elements of the Study Area that might be changed by the proposed alternatives. These changes might be positive or negative in nature.
Arizona Department of Transportation (ADOT)	The State agency responsible for State roads and highways.
capacity	The maximum number of vehicles that a given section of road or traffic lane can accommodate.
cumulative impact	The impact on the environment that 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 nonfederal) 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 Code of Federal Regulations § 1508.7)
direct impact	A change caused by the action that occurs at the same time and same place as the action.
Eastern Section	The portion of the Study Area located east of 59th Avenue.
environmental impact statement (EIS)	The project documentation prepared in accordance with the National Environment Policy Act when a project is anticipated to have a significant impact on the environment.
Federal Highway Administration (FHWA)	A branch of the U.S. Department of Transportation responsible for administering the Federal-aid Program. The program provides financial resources and technical assistance for constructing, preserving, and improving the National Highway system along with other urban and rural roads.
Land Evaluation and Site Assessment (LESA)	A point-based approach for rating the relative importance of agricultural land resources based upon specific measurable features.
mitigation	An action taken to reduce or eliminate an adverse impact stemming from construction, operation, or maintenance of a proposed action alternative. Mitigation could reduce the magnitude and extent of an impact from a level of significance to a level of insignificance. Mitigation includes <i>avoiding</i> the impact altogether by not taking a certain action or parts of an action; <i>minimizing</i> impacts by limiting the degree of magnitude of the action and its implementation; <i>rectifying</i> the impact by repairing, rehabilitating, or restoring the affected environment; <i>reducing or eliminating</i> the impact over time by preservation and maintenance operations during the life of the action; and <i>compensating</i> for the impact by replacing or providing substitute resources or environments. (40 Code of Federal Regulations § 1508.20)
prime farmland	Land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion. [7 United States Code § 4201(c)(1)(A)]

secondary impact	A change that is caused by the action and is later in time or farther removed in distance, but is still reasonably foreseeable. Secondary impacts 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, water, and other natural systems, including ecosystems.
Study Area	The geographic area within which action alternative solutions to a problem are developed.
unique farmland	Land other than prime farmland that is used for the production of specific high-value food and fiber crops such as citrus, tree nuts, olives, cranberries, fruits, and vegetables. [7 United States Code § 4201(c)(1)(B)]
Western Section	The portion of the Study Area located west of 59th Avenue.
wetlands	According to the U.S. Army Corps of Engineers, wetlands are areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, under normal conditions, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, and similar areas, and are subject to protection under Executive Order 11990 and Section 404 of the Clean Water Act, as amended.

1. Project Description and Purpose and Need

Project Description

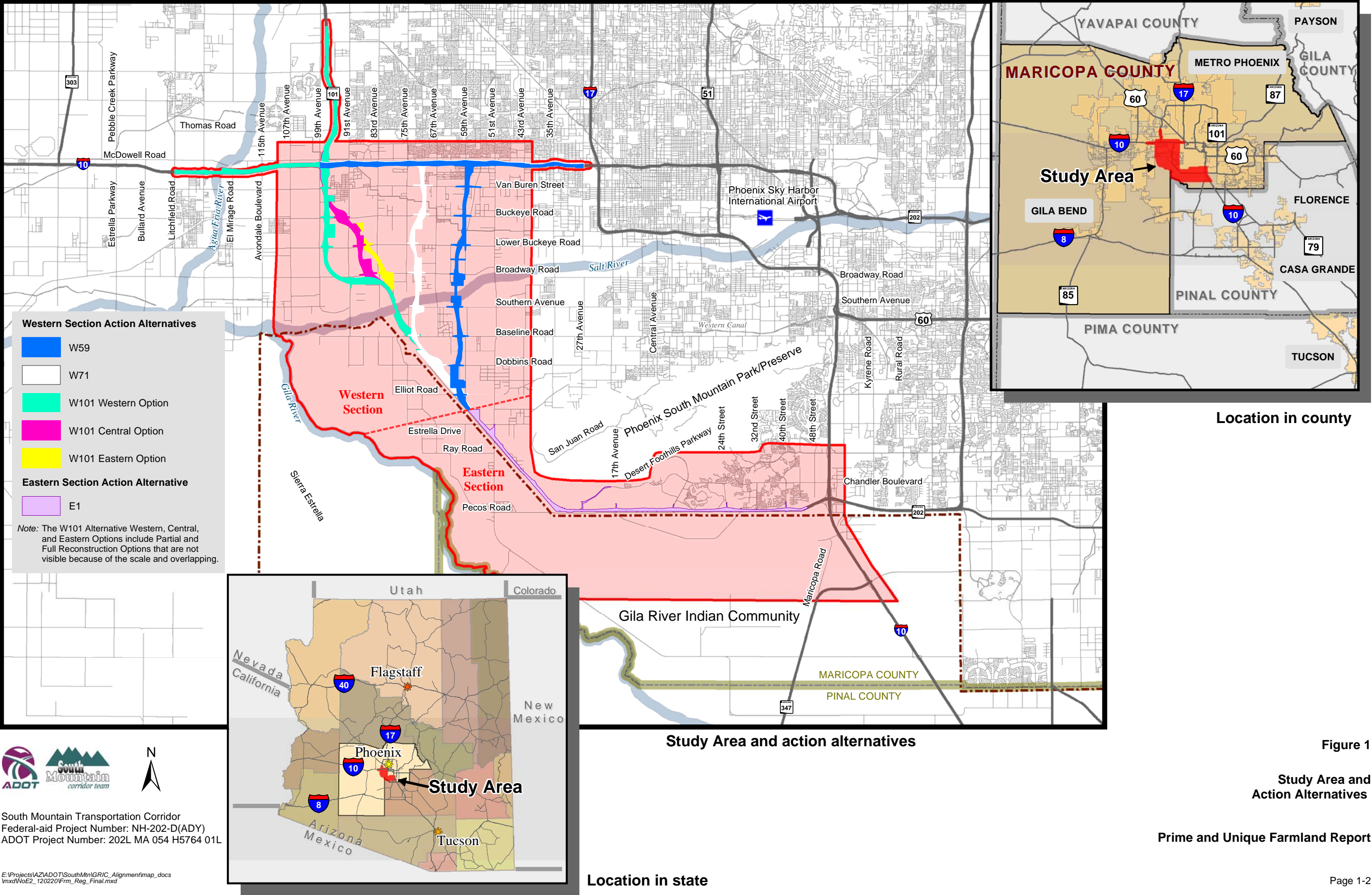
The Arizona Department of Transportation (ADOT) is studying the South Mountain Transportation Corridor (SMTC) in southern Phoenix, Maricopa County, Arizona. The South Mountain Freeway corridor was adopted into the Maricopa Association of Governments (MAG) regional freeway system in 1985 as part of the *MAG Freeway/Expressway Plan* (MAG 1985), at which time it was placed on the state highway system by the State Transportation Board. In 1988, ADOT prepared a design concept report and a state-level environmental assessment for the project, identified at that time as the South Mountain Parkway (ADOT 1988a, 1988b). As presented then, the project would connect Interstate 10 (I-10) (Maricopa Freeway) south of Phoenix with I-10 (Papago Freeway) west of the city, following an east-to-west alignment along Pecos Road through the western tip of the Phoenix South Mountain Park/Preserve, then north to I-10 between 59th and 99th avenues. Because of the time elapsed since those documents were approved and to secure eligibility for federal funding for a proposed project within this corridor, ADOT and the Federal Highway Administration (FHWA) are now preparing an environmental impact statement (EIS) in accordance with the National Environmental Policy Act. In November 2004, the MAG *Regional Transportation Plan* (2003) was placed before Maricopa County voters, who approved the sales tax funding the plan. The South Mountain Freeway was included in this plan.

Alternatives considered for the SMTC included past freeway proposals as well as transportation system management, transportation demand management, transit improvements, arterial street network improvements, and land use controls. A freeway facility was determined to best address the project purpose and need. Therefore, this report discusses the potential impacts of a proposed freeway in the SMTC.

The Study Area for the EIS encompasses more than 156 square miles and is divided into a Western Section and an Eastern Section at a location common to all action alternatives (Figure 1). The division between sections occurs just east of 59th Avenue and south of Elliot Road.

Within the Western Section, three action alternatives are being considered for detailed study. These are the W59, W71, and W101 Alternatives. The W59 Alternative would connect to I-10 at 59th Avenue, while the W71 Alternative would connect at 71st Avenue. The W101 Alternative would connect to I-10 at the existing State Route (SR) 101L (Agua Fria Freeway)/I-10 system traffic interchange (TI) and has six associated options. The W101 Alternative options vary geographically among the Western (W), Central (C), and Eastern (E) Options and would vary geometrically based on a Partial Reconstruction (PR) or a Full Reconstruction (FR) of the system TI.

Improvements to I-10 (Papago Freeway) would occur for each Western Section action alternative (W59, W71, and W101). Improvements to SR 101L would occur for each option associated with the W101 Alternative.



Project Description and Purpose and Need

Within the Eastern Section of the Study Area, one action alternative is being considered. The E1 Alternative would begin near Elliot Road and 59th Avenue and proceed to the southeast to Pecos Road, which it would follow to the east until connecting to I-10 (Maricopa Freeway) at the Pecos Road/I-10/SR 202L (Santan Freeway) system TI. The action alternatives and options are summarized in Table 1.

Table 1. Action Alternatives and Options

Section	Interstate 10 Connection	Action Alternative	Option – Broadway Road to Buckeye Road	Option – State Route 101L/ Interstate 10 Connection Reconstruction	Option Name
Western	59th Avenue	W59	— ^a	—	—
	71st Avenue	W71	—	—	—
	State Route 101L	W101	Western	Partial Reconstruction	W101WPR
				Full Reconstruction	W101WFR
			Central	Partial Reconstruction	W101CPR
				Full Reconstruction	W101CFR
			Eastern	Partial Reconstruction	W101EPR
				Full Reconstruction	W101EFR
Eastern	Pecos Road	E1	—	—	—

^a not applicable

The No-Action Alternative is being considered for the entire Study Area.

Purpose and Need

An analysis of population trends, land use plans, and travel demand shows that a considerable traffic problem in the Phoenix metropolitan area is projected for the future, resulting in the need for a new freeway in the SMTTC. This traffic problem is likely to worsen if plans are not made to accommodate the regional travel anticipated. The purpose of a freeway within the SMTTC is to support a solution to traffic congestion. Between the early 1950s and the mid-1990s, the metropolitan area grew by over 500 percent, compared with approximately 70 percent for the United States as a whole (MAG 2001). From 1980 to 2005, the Maricopa County population more than doubled, from 1.5 million to 3.7 million. The MAG region has been one of the fastest-growing metropolitan areas in the United States; Phoenix is now the fifth-largest city in the country, and the region ranks as the 12th-largest metropolitan area in the country.

Travel demand and vehicle miles driven in the metropolitan area are expected to increase at a faster rate than the population. MAG projections (conducted in collaboration with the Arizona Department of Economic Security) indicate Maricopa County's population will increase from 3.7 million in 2005 to 6.5 million in 2035 (MAG 2009). It is projected that in the next 25 years, daily vehicle miles traveled will increase from 101 million to 185 million.

Project Description and Purpose and Need

Even with anticipated improvements in light rail service, bus service, trip reduction programs, and existing roads and freeways, vehicle traffic volumes are expected to exceed the capacity of Phoenix metropolitan area streets and highways by as much as 11 percent in 2035. A freeway within the SMTTC would accommodate approximately 6 percentage points of the 11 percent of the unmet travel demand and would be part of an overall traffic solution.

2. Affected Environment

The Farmland Protection Policy Act (FPPA) (7 Code of Federal Regulations [C.F.R.] § 658) states that “the purpose of the Act is to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses.” In addition, the FPPA states that federal programs shall be administered in a manner that, as practicable, would be compatible with state and local government and private programs and policies to protect farmland.

The FPPA requires identification of proposed actions that would affect any land classified as prime or unique farmland before federal agency approval of any activity that would convert farmland. The Natural Resources Conservation Service (NRCS), part of the U.S. Department of Agriculture (USDA), administers the FPPA as it relates to protection of farmland. Responsible federal agencies are required to consider alternative actions and ensure that their programs are compatible with state and local government programs.

Prime and Unique Farmland Defined

The term “farmland” includes land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion. *Prime* farmland includes land that possesses the above characteristics, but is being used to produce livestock and timber. It does not include land already in or committed to urban development or water storage.

Unique farmland is land other than prime farmland that is used for production of specific high-value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high-quality or high yields of specific crops when treated and managed according to acceptable farming methods. Examples of such crops include citrus, tree nuts, olives, cranberries, fruits, and vegetables.

It is important to note that prime and unique farmland and agricultural land (as identified in the *Land Use Report*) are not defined the same. The agricultural land use designation is a product of local community planning efforts, while the prime and unique farmland designation is specific to NRCS criteria (i.e., irrigation conveyance and soil type) according to the FPPA. The difference between the agricultural land use designation and the prime and unique farmland designation results in different acreage estimates.

The FPPA, as revised in 1994,¹ excludes land that is already in or is committed to urban development. Urban development is defined (FPPA § 523.52 Exhibit C – Glossary) as land with a density of 30 structures per 40-acre area. Farmland in urban development includes land identified as “urbanized areas” on U.S. Census Bureau maps, as urban area mapped with a “tint overprint” on the U.S. Geological Survey topographical maps, or identified as “urban built-up” on USDA Important Farmland Maps. In the

¹ *Federal Register*, June 7, 1994

FPPA regulations (7 C.F.R. §§ 658.2–658.3), a description of land not subject to (not protected by) provisions of the FPPA is provided:

- ▶ land that receives a combined score of less than 160 points from the Land Evaluation and Site Assessment (LESA) criteria, land identified as “urbanized area” (UA) on U.S. Census Bureau maps, or land designated as an urban area and shown as a “tint overprint” on U.S. Geological Survey topographical maps
- ▶ areas shown as white (not farmland) on USDA Important Farmland Maps
- ▶ areas shown as “urban-built-up” on USDA Important Farmland Maps (consistent with the guidance of the National Resources Inventory for mapping urban-built-up areas [areas 10 acres or larger without structures are not considered urban-built-up and are subject to the FPPA])
- ▶ land that is used for national defense purposes
- ▶ private land where no federal funds or technical assistance are applied

“Farmland” does not include land already in or committed to urban development or water storage if identified in a plan prior to August 4, 1984 (see FPPA exemption discussion below). Farmland “already in” urban development or water storage includes all such land with a density of at least 30 structures per 40-acre area.

Projects exempt from the FPPA (7 C.F.R. § 658.2) include those construction or improvement projects considered to be “beyond the planning stage and in either the active design or construction state on August 4, 1984.” A project is considered to be “beyond the planning stage and in either the active design or construction state on August 4, 1984” if, on or before that date, actual construction of the project had begun. FPPA exemptions also apply if any of the following had occurred:

- ▶ acquisition of land or easements for the project had occurred or all required federal agency planning documents and steps were completed and accepted, endorsed, or approved by the appropriate agency
- ▶ a final environmental impact statement was filed with the U.S. Environmental Protection Agency or an environmental assessment had been completed and a finding of no significant impact was executed by the appropriate agency official
- ▶ the engineering or architectural design had begun or such services had been secured by contract

The proposed freeway does not qualify for exemption from the FPPA under the above-listed criteria.

Criteria for Determining Farmland

The Secretary of Agriculture is required under the FPPA to set criteria to identify and account for the adverse effects of activities relating to the preservation of farmland. Agencies may determine whether a site contains farmland without input from the NRCS. The criteria as defined in 7 C.F.R. § 658.5 are in two parts: 1) the land evaluation and relative score, for which NRCS would provide the rating or score,

and 2) the site assessment criteria for which each federal agency must develop its own ratings or scores. The “Corridor-type Site Assessment Criteria” are the specific criteria to be used for the subject project.

The prime and unique farmland for the Study Area was determined using the most current soil survey data (USDA 1977) and the associated soil types that are identified on the prime and unique farmland list (USDA 2007). A second criterion associated with prime and unique farmland is that water delivery irrigation systems be associated with the identified farmland in the Study Area.

The general plans and updates for Avondale (City of Avondale 2002), Phoenix (City of Phoenix 2001), and Tolleson (City of Tolleson 2005), have designated existing agricultural land as UA for the future. All three general plans were completed after 1994; therefore, the former exemption from FPPA requirements is no longer applicable because of the change in FPPA regulations (§ 658).²

The Farmland Conservation Impact Rating is used to determine the relative impact of projects on land regulated by the FPPA. Land that receives a combined score of 160 points or more is protected by the FPPA. The USDA recommends that sites receiving scores totaling 160 or more be given increasingly higher levels of consideration for protection (7 C.F.R. § 658.4). If the LESA score is less than 160 points, the corridor land is considered “lands already committed to urban development,” and is not considered “farmland” as defined by the FPPA. The LESA score for corridor alternatives is determined by completing the NRCS-CPA-106 form, “Farmland Conversion Impact Rating for Corridor Type Projects.” The completed NRCS-CPA-106 form for the proposed action is found in Appendix A.

The LESA scoring system is a two-component, numerical rating system that measures the quality of farmland based on land evaluation and corridor assessment criteria. The land evaluation criterion (Part V of the NRCS-CPA-106 form) completed by NRCS, is used to assign a score between 0 and 100 to groups of soil types based on their productivity and capability of supporting most crop types. The corridor assessment criteria (Part VI of the NRCS-CPA-106 form) is used to assign a score of between 0 and 160 to farmland within the corridor based on multiple criteria that assess the suitability of each alternative for protection as farmland (7 C.F.R. § 658.5). Parts I, III, and VI of form NRCS-CPA-106 (Farmland Conversion Impact Rating) have been completed by ADOT, and parts II, IV, and V of form have been completed by NRCS for the Western and Eastern Section action alternatives. The instructions that accompany the NRCS-CPA-106 form and 7 C.F.R. § 658.5(c) were used for guidance in completing the corridor assessment portion, Part VI. Where the LESA score (determined by combining results from Parts V and VI) is 160 points or greater, alternatives to avoid farmland impacts would be discussed with NRCS and, if avoidance would not be possible, measures to minimize or reduce the impacts would be evaluated.

² *Federal Register*, June 17 1994; this was confirmed with the NRCS Phoenix office (J. Schmidt, pers. comm., March 7, 2005)

Existing Prime and Unique Farmland

Farmland is a dominant land use in the Western Section of the Study Area (Figures 2 and 3). The Eastern Section of the Study Area contains prime and unique farmland acreage near 51st Avenue and Carver Road, but the total acreage is much less than such farmland acreage in the Western Section of the Study Area (see Figure 2).

Most prime and unique farmland in the Study Area does not meet the FPPA exemption criteria. Land that is shown as UA on U.S. Census Bureau maps is exempt (not prime or unique farmland). This UA-designated land was not included in the direct acreage impact calculation for each alternative.

A geographic information system was used to calculate the total acreage affected by each action alternative and option. The Study Area includes 267,295 acres of farmable land in government jurisdiction. The proposed action alternatives and options would not pose concerns related to the impact of wetlands associated with agriculture.³

Where the LESA score (from the NRCS-CPA-106 form) is 160 points or greater, alternatives to avoid farmland impacts would be discussed with NRCS. If avoidance of farmland impacts would not be possible, measures to minimize or reduce the impacts would be evaluated.

³ June 14, 2002 letter from NRCS

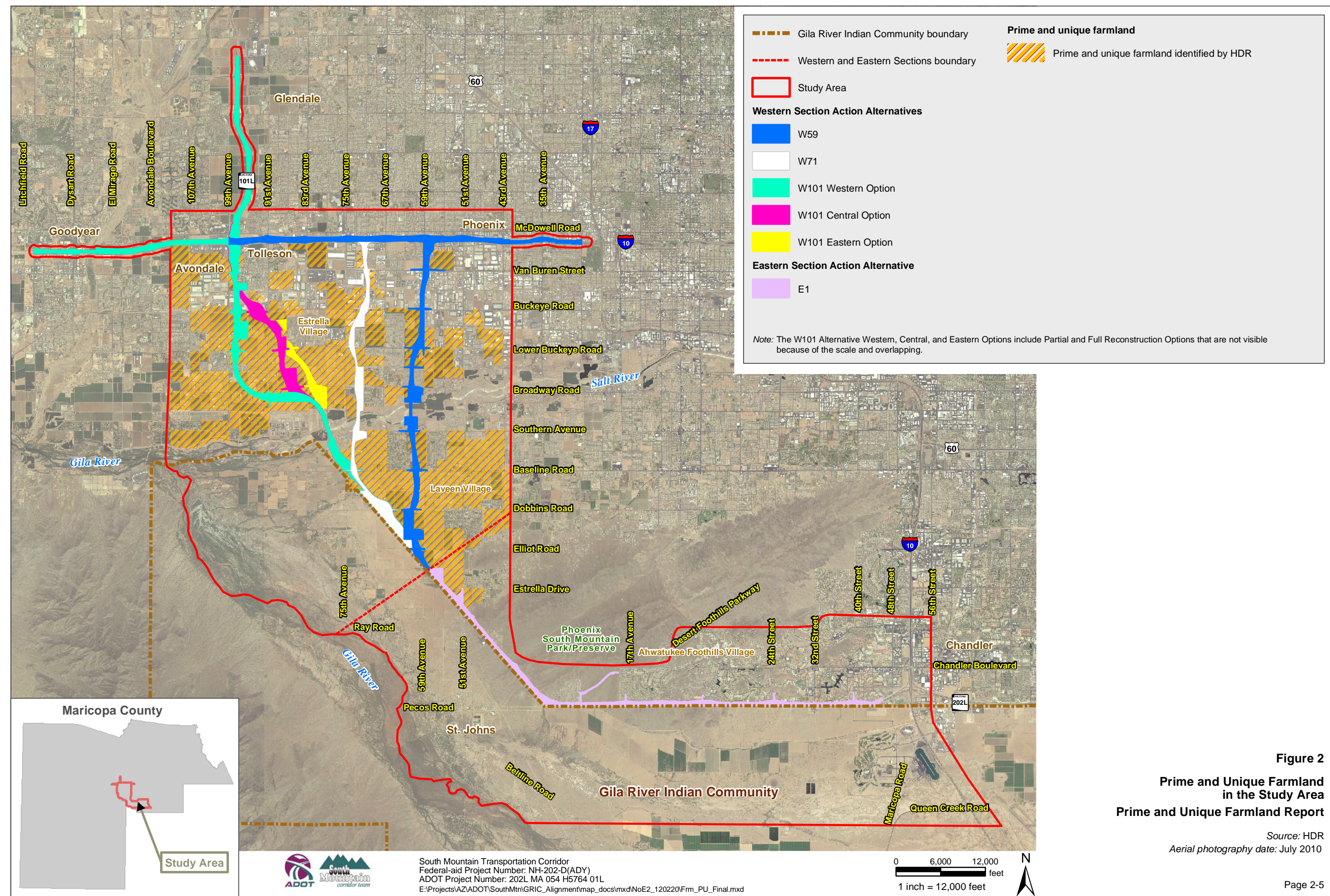


Figure 2
Prime and Unique Farmland
in the Study Area
Prime and Unique Farmland Report



View of farmland along proposed W101CPR Alternative, from 91st Avenue



View of farmland along proposed W71 Alternative, from 71st Avenue

**Prime and Unique
Farmland Report**

**Typical
Prime Farmland**

3. Environmental Consequences

The types of environmental impacts that are expected as a result of the proposed action are:

- ▶ **direct conversion:** Actions or projects that result in making land nonfarmable; action (building or construction) on a specific area results in a direct impact (FPPA Part 523.52, Exhibit C – Glossary)
- ▶ **cumulative:** May include isolation of remnant parcels (agricultural land that is bisected by a project such as a highway rendering two now-isolated parcels)
- ▶ **secondary:** Taking land adjacent to a specific impact area out of agricultural production (FPPA Part 523.52, Exhibit C – Glossary)

Impacts Associated with All Action Alternatives and Options

Farmland in the Study Area that meets the characteristics of prime and unique farmland is protected by the FPPA because of the soil types and water delivery irrigation systems. Figure 2 illustrates the extent of prime and unique farmland in the Study Area.

Through conversion to a transportation use, all action alternatives and options would directly affect prime and unique farmland. All action alternatives and options would bisect existing farmland, and farm equipment may have to be transported using the existing road network to gain access to agricultural land on opposite sides of the freeway. The action alternatives and options might also create remnants of farmland too small to farm.

The alternatives do not pose concerns related to possible impact on wetlands associated with agriculture.⁴

Farmland Conservation Impact Ratings were conducted for each action alternative in the Western and Eastern Sections of the Study Area. Parts I, III, and VI of form NRCS-CPA-106 have been completed by ADOT (using the NRCS-CPA-106 form criteria assessment guidance), and parts II, IV, and V of the form have been completed by NRCS for the action alternatives (Appendix A). If an action alternative were selected, the NRCS-CPA-106 form should be resubmitted to NRCS for final evaluation and signature. Table 2 summarizes the results (from the NRCS-CPA-106 form, total points) of the impact rating analysis for each action alternative and option in the Study Area.

No state or local programs protect farmland. Therefore, for sites scoring 160 or more points, the FPPA requires only that efforts to minimize impacts to farmland be evaluated. ADOT would discuss the results through consultation with NRCS. The consultation would include alternatives to avoid farmland impacts, and if avoidance would not be possible, measures to minimize or reduce the impacts would be evaluated.

⁴ June 14, 2002, letter from NRCS

Table 2. Prime Farmland Impact Rating Analysis

Alternative/Alignment Option	Impact Rating Total Points
Western Section	
W59	160
W71	160
W101WPR	160
W101WFR	161
W101CPR	156
W101CFR	158
W101EPR	162
W101EFR	162
Eastern Section	
E1	105

Western Section Action Alternatives

The Western Section of the Study Area has experienced rapid development, and the freeway location might affect where future development would take place. All Western Section action alternatives and options would convert agricultural land to a transportation use (Figure 2). Table 3 provides the farmland conversion acreages (NRCS-CPA-106 form, Part III, Total Acreage to be Converted Directly) that were calculated for each action alternative based on the proposed right-of-way (R/W).

Table 3. Farmland Conversion Acreage for Western Section Alternatives

Western Section Alternative/Alignment Option	Total Acreage to be Converted Directly (Part III of the NRCS-CPA-106 Form)
W59	588
W71	583
W101WPR	851
W101WFR	827
W101CPR	841
W101CFR	817
W101EPR	863
W101EFR	839

The W59 and W71 Alternatives would have less acreage impacts because they are located near a more urbanized setting and are shorter in total length than the other action alternatives. The combined LESA scores (Parts V and VI) for some of the action alternatives in the Western Section are greater than 160 points; therefore, technical assistance would be requested from NRCS for the action alternatives in the Western Section.

Eastern Section Action Alternative

The E1 Alternative would convert agricultural land to a transportation use (Figure 2). The LESA scores (Parts V and VI) for the E1 Alternative total fewer than 160 points. Table 4 provides the farmland conversion acreage (NRCS-CPA-106 form, Part III, Total Acreage to be Converted Directly) that was calculated for the E1 Alternative based on the proposed R/W footprint.

Table 4. Farmland Conversion Acreage for Eastern Section Alternative

Eastern Section Alternative/Alignment Option	Total Acreage to be Converted Directly (Part III of the NRCS-CPA-106 Form)
E1	154

The E1 Alternative received an impact rating analysis score of fewer than 160 (as shown previously in Table 2). Alternatives with scores fewer than 160 are not required to be discussed with NRCS for options to minimize farmland impact.

Secondary and Cumulative Impacts

Secondary impacts are defined by the Council on Environmental Quality as effects that are “caused by an action and are later in time or farther removed in distance but are still reasonably foreseeable” (40 C.F.R. § 1508.8). Secondary impacts have a causal link to the proposed action. For example, changes in land use that might or might not have occurred if the freeway were or were not built represent a potential secondary impact. Agricultural land acreage has decreased in the Study Area from 1997 to 2007, while urban land has increased. These data suggest that development is primarily occurring on former agricultural land (USDA 2009).

Cumulative impacts are defined 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 ...” (40 C.F.R. § 1508.7). For example, if a project were to have a direct impact on a particular environmental resource, the project would contribute to a cumulative impact on that resource.

Development of land in and around the Study Area is regulated by Maricopa County, the Gila River Indian Community, and the Cities of Phoenix, Tolleson, and Avondale. Historical aerial photographs showing land use changes over several decades in the Phoenix metropolitan area suggest that low-density land use has a high potential to redevelop into higher-density development. Cumulative impacts on prime and unique farmland include the conversion and development of such farmland by other transportation

projects and by other nontransportation projects/developments as approved by local jurisdictions. Such approvals would add to the amount of prime and unique farmland converted as a direct result of the proposed action. Other projects might include commercial and residential development that are not directly related to the proposed freeway, but would result in additional prime and unique farmland conversion (in 1999, 2,500 to 5,000 acres were converted).

A related cumulative impact might include the establishment of isolated agricultural islands. Depending on farm ownership and plot size, farmland not directly affected by the proposed R/W acquisition could become too small for continued economic use and be eliminated from further use as farmland. An agricultural parcel that would be crossed by the proposed project and would become independent islands (remnant parcels) is an example of farmland that would be too small for continued economic use.

No-Action Alternative

Development occurring throughout the Study Area places increasing demand on the street network. The Salt and Gila rivers interrupt the street network in the Study Area, creating a discontinuous grid that limits east–west and north–south mobility. According to U.S. Census Bureau estimates, Maricopa County increased in population from 2003 to 2004 more than any other county in the nation (U.S. Census Bureau 2005). Without the proposed project, the conversion of land from agricultural uses to residential, commercial, and industrial uses would likely continue, placing a greater demand on the street network. Because of the urban growth of the Phoenix metropolitan area, it is likely that farmland in the Study Area would continue to be lost by conversion to urban uses.

4. Mitigation

The following sections describe potential mitigation measures and commitments that would be implemented as part of the project to avoid, reduce, or otherwise mitigate environmental impacts associated with the project. The discussion of these measures in this report does not obligate ADOT to these specific measures. ADOT, along with FHWA, may choose to modify, delete, or add measures to mitigate impacts. Results will be made available in the Draft EIS.

ADOT Design Responsibilities

The potential to avoid any prime and unique farmland conversion with any alternative or option is minimal. Prime and unique farmland (based on soil types) is extensive throughout the Study Area.

ADOT Right-of-Way Responsibilities

During final design of the project, the ADOT Right-of-Way Group would coordinate with affected property owners as part of the technical study R/W acquisition process to provide access for farm equipment between divided agricultural parcels or to purchase remaining farm parcels considered too small to farm either economically or functionally. During final design, the ADOT Right-of-Way Group would implement a R/W acquisition program in accordance with the Uniform Relocation Assistance and Real Property Acquisition Act of 1970 (Public Law 91:646) and the Uniform Relocation Act Amendments of 1987 (Public Law 100-17).

ADOT District Construction Responsibilities

ADOT would consider measures to reduce impacts, but the FPPA does not require mitigation because of the lack of state or local programs that protect farmland. Mitigation opportunities would be considered, and some farmland mitigation examples include the following (FPPA Part 523.52 Exhibit C – Glossary):

- ▶ implementation of restrictions on sewer and water infrastructure projects that would permit the conversion of important farmland
- ▶ provision for access to farmland that would otherwise be made nearly inaccessible by implementation of the proposed project
- ▶ restoration of land to original productivity where underground utilities would be installed
- ▶ inclusion of agricultural production as a compatible use on farmland placed in perpetual easements
- ▶ provision for protection, replacement, or substitution of important farmland acreage

Contractor Responsibilities

No measures have been identified as contractor responsibilities.

5. Bibliography/References

- Arizona Department of Transportation (ADOT). 1988a. *Southwest Loop Highway (SR 218) Design Concept Report*. Phoenix.
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Appendix A

Farmland Conversion Impact Rating for Corridor Type Projects (NRCS-CPA-106)

**FARMLAND CONVERSION IMPACT RATING
FOR CORRIDOR TYPE PROJECTS**

PART I (To be completed by Federal Agency)		3. Date of Land Evaluation Request 8/3/12		4. Sheet 1 of <u> 3 </u>	
1. Name of Project South Mountain Transportation Corridor		5. Federal Agency Involved Federal Highway Administration			
2. Type of Project EIS/LDCR		6. County and State Maricopa County, Arizona			
PART II (To be completed by NRCS)		1. Date Request Received by NRCS 8/7/12		2. Person Completing Form Leslie Glover	
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		4. Acres Irrigated 267,295		Average Farm Size 302	
5. Major Crop(s) alfalfa, cotton, grains	6. Farmable Land in Government Jurisdiction Acres: 267,295 % 3.2		7. Amount of Farmland As Defined in FPPA Acres: 190,182 % 3.2		
8. Name Of Land Evaluation System Used N/A	9. Name of Local Site Assessment System N/A		10. Date Land Evaluation Returned by NRCS 8/10/12		

PART III (To be completed by Federal Agency)	Alternative Corridor For Segment - Western Section			
	W59	W71	W101WFR	W101CPR
A. Total Acres To Be Converted Directly	588	583	827	841
B. Total Acres To Be Converted Indirectly, Or To Receive Services				
C. Total Acres In Corridor	588	583	827	841
PART IV (To be completed by NRCS) Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	45	583	827	841
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0	0	0	0
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	25	25	25	22
PART V (To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)	86	86	87	82
PART VI (To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))	Maximum Points			
1. Area in Nonurban Use	15	10	10	10
2. Perimeter in Nonurban Use	10	7	7	7
3. Percent Of Corridor Being Farmed	20	12	12	12
4. Protection Provided By State And Local Government	20	0	0	0
5. Size of Present Farm Unit Compared To Average	10	5	5	5
6. Creation Of Nonfarmable Farmland	25	10	10	10
7. Availability Of Farm Support Services	5	3	3	3
8. On-Farm Investments	20	15	15	15
9. Effects Of Conversion On Farm Support Services	25	8	8	8
10. Compatibility With Existing Agricultural Use	10	4	4	4
TOTAL CORRIDOR ASSESSMENT POINTS	160	74	74	74
PART VII (To be completed by Federal Agency)				
Relative Value Of Farmland (From Part V)	100	86	86	87
Total Corridor Assessment (From Part VI above or a local site assessment)	160	74	74	74
TOTAL POINTS (Total of above 2 lines)	260	160	160	156

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES <input type="checkbox"/> NO <input type="checkbox"/>
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5. Reason For Selection:

Signature of Person Completing this Part:

DATE

NOTE: Complete a form for each segment with more than one Alternate Corridor

**FARMLAND CONVERSION IMPACT RATING
FOR CORRIDOR TYPE PROJECTS**

PART I (To be completed by Federal Agency)		3. Date of Land Evaluation Request 4/15/11		4. Sheet 2 of <u>3</u>	
1. Name of Project South Mountain Transportation Corridor		5. Federal Agency Involved Federal Highway Administration			
2. Type of Project EIS/LDCR		6. County and State Maricopa County, Arizona			
PART II (To be completed by NRCS)		1. Date Request Received by NRCS		2. Person Completing Form Leslie Glover II	
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		4. Acres Irrigated		Average Farm Size 302	
5. Major Crop(s) alfalfa, cotton, grains	6. Farmable Land in Government Jurisdiction Acres: 267,295 % 3.2		7. Amount of Farmland As Defined in FPPA Acres: 190,182 % 3.2		
8. Name Of Land Evaluation System Used N/A	9. Name of Local Site Assessment System N/A		10. Date Land Evaluation Returned by NRCS 4/28/11		
PART III (To be completed by Federal Agency)		Alternative Corridor For Segment - Western Section			
		W101EPR	W101WPR		W101CFR
A. Total Acres To Be Converted Directly		863	851		817
B. Total Acres To Be Converted Indirectly, Or To Receive Services					
C. Total Acres In Corridor		863	851		817
PART IV (To be completed by NRCS) Land Evaluation Information					
A. Total Acres Prime And Unique Farmland		863	851		817
B. Total Acres Statewide And Local Important Farmland					
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted		0	0		0
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value		22	25		25
PART V (To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)		88	86		84
PART VI (To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))		Maximum Points			
1. Area in Nonurban Use	15	10	10		10
2. Perimeter in Nonurban Use	10	7	7		7
3. Percent Of Corridor Being Farmed	20	12	12		12
4. Protection Provided By State And Local Government	20	0	0		0
5. Size of Present Farm Unit Compared To Average	10	5	5		5
6. Creation Of Nonfarmable Farmland	25	10	10		10
7. Availability Of Farm Support Services	5	3	3		3
8. On-Farm Investments	20	15	15		15
9. Effects Of Conversion On Farm Support Services	25	8	8		8
10. Compatibility With Existing Agricultural Use	10	4	4		4
TOTAL CORRIDOR ASSESSMENT POINTS		160	74	74	74
PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)		100	88	86	84
Total Corridor Assessment (From Part VI above or a local site assessment)		160	74	74	74
TOTAL POINTS (Total of above 2 lines)		260	162	160	158
1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES <input type="checkbox"/> NO <input type="checkbox"/>		

5. Reason For Selection:

Signature of Person Completing this Part:

DATE

NOTE: Complete a form for each segment with more than one Alternate Corridor

**FARMLAND CONVERSION IMPACT RATING
FOR CORRIDOR TYPE PROJECTS**

PART I (To be completed by Federal Agency)		3. Date of Land Evaluation Request 4/15/11	4. Sheet 3 of <u>3</u>
1. Name of Project South Mountain Transportation Corridor		5. Federal Agency Involved Federal Highway Administration	
2. Type of Project EIS/LDCR		6. County and State Maricopa County, Arizona	
PART II (To be completed by NRCS)		1. Date Request Received by NRCS	2. Person Completing Form Leslie Glover II
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES <input checked="" type="checkbox"/> NO <input checked="" type="checkbox"/>		4. Acres Irrigated Average Farm Size 302	
5. Major Crop(s) alfalfa, cotton, grains	6. Farmable Land in Government Jurisdiction Acres: 267,295 % 3.2		7. Amount of Farmland As Defined in FPPA Acres: 190,182 % 3.2
8. Name Of Land Evaluation System Used N/A	9. Name of Local Site Assessment System N/A		10. Date Land Evaluation Returned by NRCS 4/28/11

PART III (To be completed by Federal Agency)	Alternative Corridor For Western & Eastern Sections			
	W101EFR	E1		
A. Total Acres To Be Converted Directly	839	154		0
B. Total Acres To Be Converted Indirectly, Or To Receive Services				
C. Total Acres In Corridor	839	154	0	0

PART IV (To be completed by NRCS) Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	839	154		
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0	0		
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	22	22		

PART V (To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)	88	89		
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PART VI (To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))	Maximum Points				
1. Area in Nonurban Use	15	10	7		
2. Perimeter in Nonurban Use	10	7	5		
3. Percent Of Corridor Being Farmed	20	12	0		
4. Protection Provided By State And Local Government	20	0	0		
5. Size of Present Farm Unit Compared To Average	10	5	0		
6. Creation Of Nonfarmable Farmland	25	10	0		
7. Availability Of Farm Support Services	5	3	0		
8. On-Farm Investments	20	15	0		
9. Effects Of Conversion On Farm Support Services	25	8	0		
10. Compatibility With Existing Agricultural Use	10	4	4		
TOTAL CORRIDOR ASSESSMENT POINTS	160	74	16	0	0

PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)	100	88	89		
Total Corridor Assessment (From Part VI above or a local site assessment)	160	74	16	0	0
TOTAL POINTS (Total of above 2 lines)	260	162	105		

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES <input type="checkbox"/> NO <input type="checkbox"/>
5. Reason For Selection:			

Signature of Person Completing this Part: _____ DATE _____

NOTE: Complete a form for each segment with more than one Alternate Corridor

CORRIDOR - TYPE SITE ASSESSMENT CRITERIA

The following criteria are to be used for projects that have a linear or corridor - type site configuration connecting two distant points, and crossing several different tracts of land. These include utility lines, highways, railroads, stream improvements, and flood control systems. Federal agencies are to assess the suitability of each corridor - type site or design alternative for protection as farmland along with the land evaluation information.

- (1) How much land is in nonurban use within a radius of 1.0 mile from where the project is intended?

More than 90 percent - 15 points
90 to 20 percent - 14 to 1 point(s)
Less than 20 percent - 0 points

- (2) How much of the perimeter of the site borders on land in nonurban use?

More than 90 percent - 10 points
90 to 20 percent - 9 to 1 point(s)
Less than 20 percent - 0 points

- (3) How much of the site has been farmed (managed for a scheduled harvest or timber activity) more than five of the last 10 years?

More than 90 percent - 20 points
90 to 20 percent - 19 to 1 point(s)
Less than 20 percent - 0 points

- (4) Is the site subject to state or unit of local government policies or programs to protect farmland or covered by private programs to protect farmland?

Site is protected - 20 points
Site is not protected - 0 points

- (5) Is the farm unit(s) containing the site (before the project) as large as the average - size farming unit in the County ?

(Average farm sizes in each county are available from the NRCS field offices in each state. Data are from the latest available Census of Agriculture, Acreage or Farm Units in Operation with \$1,000 or more in sales.)
As large or larger - 10 points
Below average - deduct 1 point for each 5 percent below the average, down to 0 points if 50 percent or more below average - 9 to 0 points

- (6) If the site is chosen for the project, how much of the remaining land on the farm will become non-farmable because of interference with land patterns?

Acreage equal to more than 25 percent of acres directly converted by the project - 25 points
Acreage equal to between 25 and 5 percent of the acres directly converted by the project - 1 to 24 point(s)
Acreage equal to less than 5 percent of the acres directly converted by the project - 0 points

- (7) Does the site have available adequate supply of farm support services and markets, i.e., farm suppliers, equipment dealers, processing and storage facilities and farmer's markets?

All required services are available - 5 points
Some required services are available - 4 to 1 point(s)
No required services are available - 0 points

- (8) Does the site have substantial and well-maintained on-farm investments such as barns, other storage building, fruit trees and vines, field terraces, drainage, irrigation, waterways, or other soil and water conservation measures?

High amount of on-farm investment - 20 points
Moderate amount of on-farm investment - 19 to 1 point(s)
No on-farm investment - 0 points

- (9) Would the project at this site, by converting farmland to nonagricultural use, reduce the demand for farm support services so as to jeopardize the continued existence of these support services and thus, the viability of the farms remaining in the area?

Substantial reduction in demand for support services if the site is converted - 25 points
Some reduction in demand for support services if the site is converted - 1 to 24 point(s)
No significant reduction in demand for support services if the site is converted - 0 points

- (10) Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of surrounding farmland to nonagricultural use?

Proposed project is incompatible to existing agricultural use of surrounding farmland - 10 points
Proposed project is tolerable to existing agricultural use of surrounding farmland - 9 to 1 point(s)
Proposed project is fully compatible with existing agricultural use of surrounding farmland - 0 points
