South Mountain Transportation Corridor Study

Citizens Advisory Team
Draft Technical Report Summary

Cultural Resources

What are cultural resources?

Cultural resources are the prehistoric and historic sites, structures, places, landscapes and objects important to a culture or community for historic, scientific, traditional, religious or other reasons. They are a nonrenewable resource that links us with our past and defines our heritage and social identity at local, state and national levels. Examples of cultural resources identified in the South Mountain Transportation Corridor include prehistoric archaeological sites, historic houses and farms, railroads and irrigation canals.

Cultural resources also include traditional cultural properties (TCPs). TCPs are places considered important for their association with cultural practices or beliefs of a living community that are rooted in that community's history and are important in maintaining the cultural identity of a community. Often, TCPs are culturally important places, but may not be distinguished by physical manifestations resulting from human activity. For example, TCPs could include a location associated with the traditional beliefs of a community regarding its origins or its cultural history, or a location where a particular community has historically gone—and is known to go today—to perform traditional cultural practices.

Why study cultural resources in the Environmental Impact Statement (EIS)?

Cultural resources hold an intrinsic value in that they provide a direct link to the past and help people define and understand their own heritage as well as that of others. Cultural resources provide opportunities for studying and learning how and why our cultures and societies have developed over time. Both the federal government and the State of Arizona acknowledge the importance of Arizona's cultural heritage to its citizens and recognize that physical links to our past should be preserved for future generations. Where preservation is not possible, mitigation of the effects of human activities on these resources is warranted.

The South Mountain Transportation Corridor study is a federal undertaking requiring regulatory compliance with the National Historic Preservation Act (NHPA). Section 106 of the NHPA requires federal agencies to take into account the effects of their activities and programs on cultural resources eligible for listing in the National Register of Historic Places (NRHP). Regulations for Protection of Historic Properties, which primarily implement Section 106, were most recently amended in 2004. These regulations define a process for responsible federal agencies to consult with the state or tribal Historic Preservation Officers, Native American groups, other interested parties and, when necessary, the Advisory Council on Historic Preservation in Washington, D.C. to ensure cultural resources are duly considered as federal projects are planned and implemented.

Cultural Resources

To be determined eligible for listing in the NRHP, properties must be important in American history, architecture, archaeology, engineering or culture and meet at least one of the following criteria:

- Criterion A. are associated with events that have made a significant contribution to the broad patterns of our history
- Criterion B. are associated with the lives of persons significant in our past
- Criterion C. embody the distinctive characteristics of a type, period or method of construction or that represent the work of a master, or that possess high artistic values or that represent a significant distinguishable entity whose components may lack individual distinction
- Criterion D. have yielded, or may be likely to yield, information important in prehistory or history

They also must possess integrity of location, design, settings, materials, workmanship, feeling and/or association. Properties may be of local, state or national importance. Typically, historic properties are at least 50 years old, but younger properties may be considered for listing if they are of exceptional importance.

What kind of impacts could occur from construction?

Direct impacts on cultural resources from construction could result in their partial or total loss. By law, adverse impacts on cultural resources determined eligible for listing in the NRHP must be mitigated. The degree of mitigation required is directly related to the historic designation as described by Section 106.

Direct impacts from construction on cultural resources determined to be of religious or traditional cultural importance by Native American groups or others could result in desecration of a sacred place. A potential indirect impact might be a community's loss of access to a culturally important place as a result of construction restrictions.

How do the alternative alignments differ in construction-related impacts?

As shown in the tables, all action alternatives would adversely affect prehistoric and historic cultural resources. The prehistoric sites that have been determined eligible for listing in the NRHP would require mitigation if they were to be affected by construction. The greatest number of prehistoric sites would be impacted by the E1 Alternative, but each is typically small and represents a limited set of activities, such as rock art and resource collecting areas. In contrast, while the Western Section alternatives would affect fewer sites, they include the remains of large prehistoric villages with archaeological deposits, some measuring over a half-mile in diameter. While all alternatives would affect historic sites, most of such sites are not eligible for the NRHP.

Archaeological Resources Affected, Action Alternatives

Action Alternatives	Number of Sites Affected	Site Type	NRHP Eligibility Criterion	Mitigation Required
Western Section				
W55	6	1 village site; 5 habitation sites	D	Yes
W71	4	2 village sites; 2 habitation sites		
W101 Western Option	3	2 village sites; 1 habitation site		
W101 Central Option	2	2 village sites		
W101 Eastern Option	2	2 village sites		
Eastern Section				
E1	8	1 artifact scatter (limited activity site); 2 lithic quarries; 1 petroglyph site; 4 trail sites	D	Yes

NRHP-Eligible Historic Properties Affected, Action Alternatives

Action Alternatives	Site Affected	NRHP Eligibility Criterion	Mitigation Required
Western Section			
W55	Roosevelt Canal	A	No
	Historic Southern Pacific Railroad		No
W71	Roosevelt Canal		No
	Historic Southern Pacific Railroad		No
W101 Western Option	Historic Southern Pacific Railroad		No
W101 Central Option			
W101 Eastern Option			
Eastern Section			
E1	Phoenix South Mountain Park/Preserve	A, B, C, D	No

All Western Section action alternatives would cross the historic Southern Pacific Railroad (now Union Pacific Railroad), which is NRHP-eligible. Similarly, all Western Section action alternatives would intersect the Roosevelt Canal. The segments of the Roosevelt Canal that would be crossed by the W55 and W71 Alternatives represent the original construction of the canal and contribute to the canal's eligibility. The W101 Alternative and Options would cross canal segments that do not contribute to the canal's eligibility for listing in the NRHP because they are modern realignments.

What kind of freeway operational impacts (postconstruction) could occur?

Continued operation of the freeway could directly impact the availability of access to cultural resources. As a potential cumulative effect, planned growth adjacent to the freeway could impact cultural resources.

What if the project were not constructed?

While freeway construction would have negative impacts to cultural resources, stopping freeway construction would not eliminate the continual loss of cultural properties due to urban development. Unlike certain private sector developers, FHWA and ADOT are required by law to minimize cultural resource impacts through the development of coordinated transportation infrastructure that improves the quality of life while sustaining core cultural and historical values of local communities and constituencies.

Are there any specific and/or unique impacts from implementation of the action alternatives?

Archaeological sites and places considered culturally important by Native American groups would be affected by any of the build alternatives. The Gila River Indian Community (GRIC) and the Salt River Pima-Maricopa Indian Community have both passed Tribal Resolutions designating the South Mountains as a TCP and the Colorado River Indian tribes have said that they also consider the South Mountains a TCP. The Federal Highway Administration (FHWA) and the Arizona Department of Transportation (ADOT) recognize the South Mountains as a TCP, and Section 106 consultations regarding the South Mountains TCP are ongoing.

Further, SMPP is also NRHP-eligible 1) as a historic property for its National Park Service master plan design that set a precedent in planning natural parks and 2) for its associations with Civilian Conservation Corps programs in Phoenix during the Great Depression.

What could be done to reduce or avoid impacts?

Much has already been undertaken to avoid direct impacts on cultural resource sites throughout the Study Area. For example, adjustments to the W55, W71 and W101 Alternatives have been made to avoid such resources. However, it appears that not all cultural sites could be avoided by the action alternatives. ADOT could use a range of activities to mitigate adverse impacts during construction and operation of the freeway (see answers to next question, below).

Cultural Resources

The degree and number of adverse impacts on cultural resources could be reduced by minimizing the construction footprint to the greatest extent possible. Impacts on historic buildings could be reduced through relocation of the structures. For cultural resources in the construction footprint that could not be relocated, adverse impacts could be reduced through implementation of mitigation measures, such as archaeological excavations and architectural/engineering documentation prior to construction.

If cultural resources could not be avoided, what is the process for mitigating the adverse impacts?

Specific mitigation strategies would vary depending on the type of cultural resource being treated. For prehistoric sites, work plans and research designs would be developed that identify and describe research questions, methods and excavation strategy to be used for site excavation. In addition, a burial agreement with the Arizona State Museum and concerned Native American tribes would be developed that outlines the procedures for proper and respectful removal, treatment and reburial of any human remains and associated funerary objects that might be encountered.

Mitigation field work is typically performed in two phases. The first phase would involve conducting test excavations of a sample of a site to assess the type, condition and distribution of features present below the ground surface, and in turn, to determine whether a more extensive program of data recovery excavations would be needed. In the Phoenix area, this is typically accomplished by excavating a series of backhoe trenches, sometimes coupled with some limited hand-excavated units (see photo 1). If warranted, a second phase would involve data recovery where large excavation units would be opened over targeted features (see photo 2). Sediments overlaying features may initially be stripped away mechanically. Features would then be hand-excavated in strata.

Mitigation strategies for historic cultural resources can be varied. For historic artifact deposits, such as an historic trash dump, where the cultural material is belowground, a phased mitigation strategy may be used similar to that employed for prehistoric sites. Mitigation for adversely affected historic buildings would typically involve a combination of architectural assessments, historical research and archival-quality photographic documentation. Mitigation for historic structures, such as canals and bridges, involves a similar approach, usually with the preparation of a Historic American Engineering Record which follows the Secretary of the Interior's Standards and Guidelines for Architectural and Engineering Documentation.

Photo courtesy of Archaeological Consulting Services Ltd.

Photo 1: Example of Phase I archaeological testing

Photo copyright: Adriel Heisey

Photo 2: Example of Phase II Data Recovery Excavation

Cultural Resources

Are the conclusions presented in this summary final?

The conclusions in this summary are not final. Consultation with Native American communities and the State Historic Preservation Office regarding the evaluation of TCPs in the Study Area is ongoing. In addition, what would be rights-of-way along alignments of the Western Section action alternatives were in alfalfa fields when field-investigated, preventing inspection of the ground surface for cultural resources. Future surveys of these parcels could result in the identification of additional cultural resources sites.

In situations such as this, where comprehensive evaluation of effects of a proposed project on cultural resources could not be fully determined prior to a decision being made on the , project's environmental acceptability, a programmatic agreement (PA) is prepared that specifies steps and procedures that would be undertaken to address any effects as they were to become known. A PA for the South Mountain Freeway study has been developed and executed. To date, this document has been signed by FHWA, the Arizona State Historic Preservation Office, ADOT, Salt River Project, the Maricopa County Department of Transportation, the Flood Control District of Maricopa County, the City of Phoenix, the Arizona State Museum, the Fort McDowell Yavapai Nation, the Tonto Apache Tribe and the Yavapai-Apache Nation.

As a member of the Citizens Advisory Team, how can you review the entire technical report?

The cultural resources technical reports are confidential because of the cultural importance and sensitivity of their content. In accordance with state and federal law, these reports are not available for public review.

Section 4(f) and 6(f) Resources

Why study Section 4(f) and 6(f) resources in the Environmental Impact Statement (EIS)?

In the 1960s, the federal government recognized that a national policy focus regarding development of the nation's transportation infrastructure needed to be created to protect the natural beauty of the countryside, public parks and recreation lands, wildlife and waterfowl refuges and historic properties. In response, the Secretary of Transportation was directed to consult and cooperate with other federal agencies and with states to develop transportation plans and programs that include measures to maintain or enhance the natural beauty of lands traversed by federally funded freeways. The policy targeted protections for:

- parks and recreation areas
- wildlife and waterfowl refuges
- historic properties

From this policy direction, the U.S. Department of Transportation (USDOT) Act of 1966 (as amended) included a special provision to carry out this effort, which is called Section 4(f). Section 4(f) states that the Secretary of Transportation "may approve a transportation program or project . . . requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, area, refuge, or site) only if—(1) there is no prudent and feasible alternative to using that land; and (2) the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use" (49 U.S.C.§ 303).

Indirectly related to Section 4(f) is Section 6(f) of the Land and Water Conservation Fund Act (LWCFA). Section 6(f) is administered by the Department of the Interior's National Park Service (NPS) and pertains to projects that would cause impacts on or the permanent conversion of outdoor recreational property acquired with LWCFA assistance. Section 6(f) prohibits the conversion of property acquired or developed with these grants to a nonrecreational purpose without approval from the Interagency Committee for Outdoor Recreation (IAC) and the NPS. The NPS must ensure replacement lands of equal value, location and usefulness are provided as conditions of approval for land conversions. Section 4(f) is applicable only to USDOT actions, while Section 6(f) is applicable to any transportation project.

Section 4(f) and Section 6(f) are often discussed in the same context because it is not uncommon for recreational resources to receive LWCFA funding, making Section 6(f) at times integral to the Section 4(f) process, which is typically considered a more stringent requirement to uphold. The study team analyzed potential impacts on these protected resources since the construction and operation of a freeway, like the proposed South Mountain Freeway, could reduce the number of these protected resources or alter their integrity.

Section 4(f) and 6(f) Resources

What kind of impacts could occur from construction?

The types of impacts on resources afforded protection under Section 4(f) and 6(f) that could occur as a result of implementing a project like the proposed South Mountain Freeway include:

- direct conversion of resources afforded protection under Section 4(f) and 6(f) to a transportation use
- severe proximity impacts that substantially impair attributes qualifying a resource for protection under Section 4(f) (for a freeway project, such impacts could occur from increased noise levels, changes to important viewsheds contributing to the resource being protected under Section 4(f) or substantial obstruction of access to the resource)

How do the action alternatives differ in construction-related impacts?

Through an iterative process, the alignments of all the action alternatives in the Western Section of the Study Area have been adjusted to avoid direct use of Section 4(f) and 6(f) resources (although properties could still be discovered that are afforded such protection). Some action alternatives are located close to the protected resources. However, it has been determined the impacts from such proximity would not substantially impair the use of the resources. Therefore, implementation of any of the Western Section action alternatives would have similar potential, but minor, “non-use” impacts on Section 4(f) resources.

In the Eastern Section of the Study Area, implementation of the E1 Alternative would directly and adversely affect Section 4(f) resources. The E1 Alternative would acquire a small portion of the South Mountains, which is afforded protection because it is a significant publicly owned park (Phoenix South Mountain Park/Preserve [SMPP]), a historic property, and a traditional cultural properties (TCP) (recognized by several Native American groups as sacred). The E1 Alternative would also cross the planned Sun Circle/Maricopa Trail near the mountains. To reduce the impacts to the trail, the freeway would be constructed to span it.

None of the action alternatives would have Section 6(f) impacts.

What kinds of freeway operational impacts (postconstruction) would occur?

Freeway traffic-related noise would be introduced to adjacent lands where such noise doesn’t currently exist. Modeled noise levels above the Arizona Department of Transportation’s (ADOT) noise standards would be mitigated prior to opening the freeway.

The proposed freeway would be the dominant feature in the area (except near Interstate 10, Papago and Maricopa Freeways). Any of the action alternatives would impact the visual setting of the surroundings. Visual impacts could be reduced by blending the color and form of appropriate freeway features (noise walls, bridges, slopes) with the surrounding environment.

The location of access to some Section 4(f) properties could be modified.

What if the project were not constructed?

No project-specific impacts would be experienced. However, selection of the No Action Alternative would not prevent implementation of other transportation infrastructure improvements in the Study Area. Such improvements, along with projected increases in traffic volumes, could cause adverse impacts on some Section 4(f) resources in the Study Area because of the number of resources in the Study Area.

Would any specific and/or unique impacts arise with implementation of any of the action alternatives?

The South Mountains are a unique and well-recognized feature in metropolitan Phoenix. They are eligible for the National Register of Historic Places (NRHP) because they are considered a TCP by some Native American communities in the state. Within the SMPP boundaries, they represent one of the largest urban parks in the nation at approximately 16,500 acres.

As currently proposed, the E1 Alternative would result in the acquisition of approximately 32 acres of SMPP. This is approximately 0.2 percent of the total area of the park. This is also 8.5 acres less than what was proposed to be needed when planning for this proposed freeway began in the late 1980s.

Could design of any of the action alternatives help avoid impacts to SMPP?

Design options were considered for construction of the E1 Alternative through the South Mountains' ridges. They included cuts, tunnels and bridges and the different profile options associated with each. All of the options would result in use-related impacts to the resources protected by Section 4(f). For the reasons described in the Technical Memorandum Summary, *Profile Options at the South Mountains' Ridges*, ADOT (February 2008), the bridge and tunnel options were determined to not be prudent and feasible and were, therefore, eliminated from further consideration.

Currently, it appears the only option for avoiding direct impacts on the Section 4(f) resources associated with the South Mountains would be to study alignments south of the mountains on Gila River Indian Community (GRIC) land. Although coordination with the GRIC is ongoing, no permission has been given to ADOT to study such alternatives.

What could be done to further reduce impacts?

ADOT could undertake a range of activities during construction to reduce impacts on the resources. ADOT and FHWA are working with the City of Phoenix, GRIC and other stakeholders to explore what could be done to minimize harm to the South Mountains. Coordination is ongoing and would likely continue through construction, should an action alternative be selected. The types of measures that could be undertaken include:

- constructing barriers to reduce noise levels
- blending the freeway with the surrounding environment as much as practicable to minimize visual impacts of the section of freeway adjacent to Section 4(f) resources; for

instance, clustering or grouping plant material in an informal pattern to break up the linear form of the freeway and/or using earthen colors for noise barriers and lighting elements to blend with the surrounding environment

- screening views of the freeway and sound walls using vegetation buffers
- providing multiuse grade separations (bridges or large culverts) for access to the South Mountains
- setting aside areas for parking and access to trailheads
- acquiring additional lands to replace those used for the freeway

Are the conclusions presented in this summary final?

Quantitative findings relative to impacts could change. Potential changes would be based on outcomes related to the following issues and will be presented to the public as part of publication of the Draft EIS, Final EIS and, if an action alternative were selected, in the final design process. The issues include:

- refinement in design features through the design process
- updated aerial photography as it relates to rapid growth in the Western Section of the Study Area
- ongoing communications with the City of Phoenix, GRIC, and other stakeholders to finalize measures to minimize harm to the South Mountains
- ongoing communications with the GRIC regarding granting permission to study action alternatives on GRIC land
- ongoing consideration of public comments
- potential updates to traffic forecasts as regularly revised by the Maricopa Association of Governments
- potential changes regarding updated census data
- regularly updated cost estimates for construction, right-of-way acquisition, relocation and mitigation

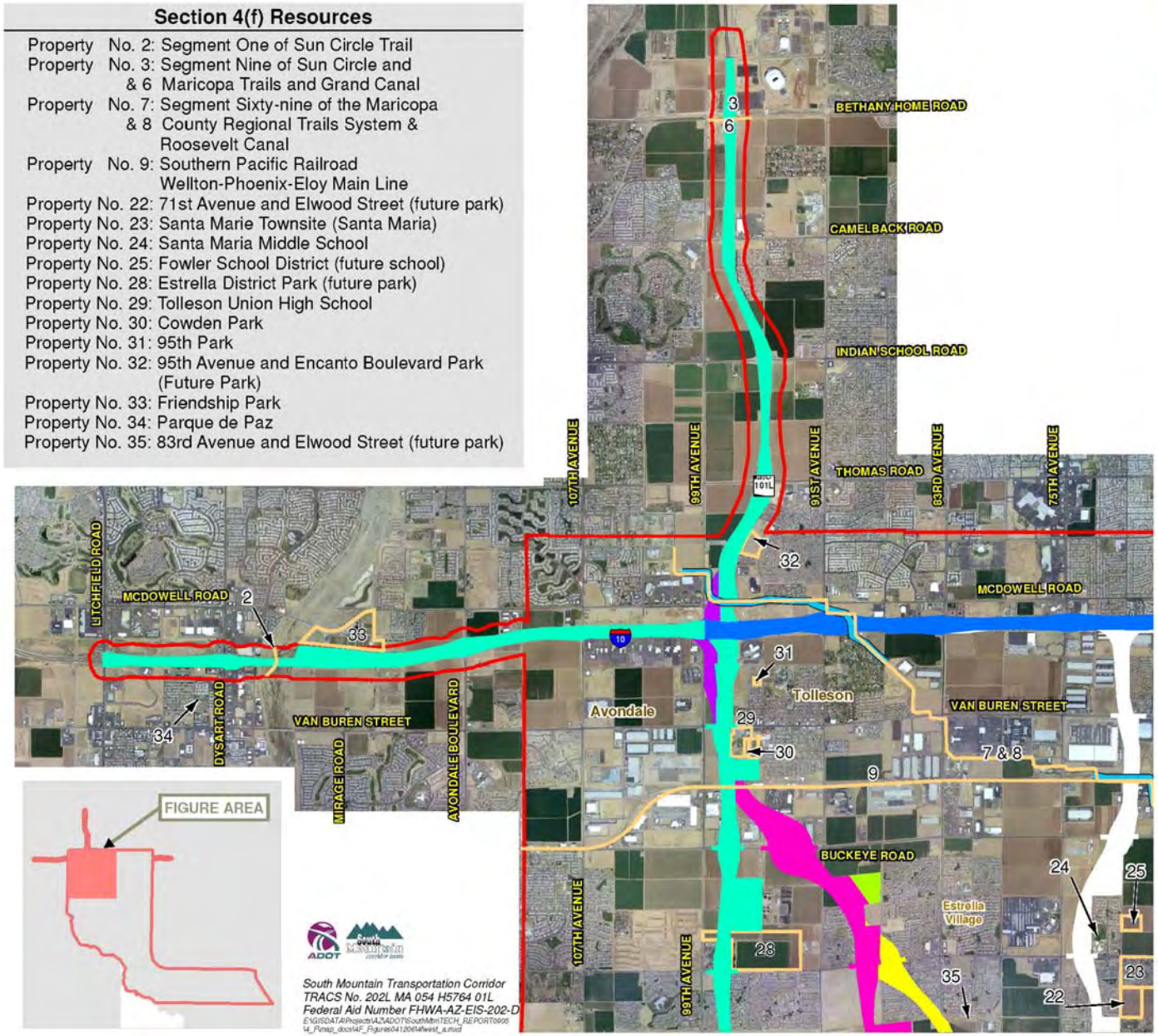
Even with these factors possibly affecting findings, the study team anticipates effects would be equal among the alternatives and, consequently, impacts would be roughly comparable. This assumption would be confirmed if, and when, such changes were to occur.

As a member of the Citizens Advisory Team, how can you review the entire technical report?

The complete technical report is available for review by making an appointment with Mike Bruder at 602-712-6836 or Mark Hollowell at 602-712-6819.

Section 4(f) Resources

Property No. 2: Segment One of Sun Circle Trail
Property No. 3: Segment Nine of Sun Circle and
& 6 Maricopa Trails and Grand Canal
Property No. 7: Segment Sixty-nine of the Maricopa
& 8 County Regional Trails System &
Roosevelt Canal
Property No. 9: Southern Pacific Railroad
Wellton-Phoenix-Eloy Main Line
Property No. 22: 71st Avenue and Elwood Street (future park)
Property No. 23: Santa Marie Townsite (Santa Maria)
Property No. 24: Santa Maria Middle School
Property No. 25: Fowler School District (future school)
Property No. 28: Estrella District Park (future park)
Property No. 29: Tolleson Union High School
Property No. 30: Cowden Park
Property No. 31: 95th Park
Property No. 32: 95th Avenue and Encanto Boulevard Park
(Future Park)
Property No. 33: Friendship Park
Property No. 34: Parque de Paz
Property No. 35: 83rd Avenue and Elwood Street (future park)



Legend

4(f) Property
Study Area
Property Number

Western Section Alternatives
W55
W71
W101WPR
W101WFR
W101CPR
W101CFR
W101EPR
W101EFR

Eastern Section Alternative
E1

0 6,000 12,000 Feet
N

Section 4(f) and 6(f) Report

Section 4(f) and 6(f) Resources- Northwestern Section of the Western Section (1 of 4)

South Mountain Freeway
Transportation Corridor Study

Aerial Photography Date: April 2006

Section 4(f) Resources

Property No. 4: Segment Fifty-six of the Maricopa County Regional Trails System
Property No. 5: Segment Sixty-eight of Sun Circle
Property No. 18: Laveen Farms (Future School)
Property No. 19: City of Phoenix (Future Park)
Property No. 22: 71st Avenue and Elwood Street (Future park)
Property No. 23: Santa Marie Historic District
Property No. 27: Sachs-Webster Farmhouse
Property No. 28: Estrella District Park Master Plan
Property No. 35: 83rd Ave & Elwood Street (Future Park)

Legend

- GRIC Boundary
- Study Area
- 4(f) Property
- # Property Number

Western Section Alternatives

- W71
- W101WPR
- W101WFR
- W101CPR
- W101CFR
- W101EPR
- W101EFR

0 2,000 4,000 Feet

N

South Mountain Transportation Corridor
TRACS No. 202L MA 054 H5764 01L
Federal Aid Number FHWA-AZ-EIS-202-D

Section 4(f) and 6(f) Report

Section 4(f) and 6(f) Resources- Southwestern Section of the Western Section 2 of 4

South Mountain Freeway
Transportation Corridor Study

Aerial Photography Date: April 2006

Section 4(f) Resources

Property No. 4: Segment Fifty-six of the Maricopa County Regional Trails System
Property No. 7: Segment Sixty-nine of the Maricopa County (& 8) Regional Trails System & Roosevelt Canal
Property No. 9: Southern Pacific Railroad Wellton-Phoenix-Eloy Main Line
Property No. 15: Falcon Park
Property No. 16: Sunridge Park
Property No. 17: Sunridge Elementary
Property No. 23: Santa Maria Townsite (Santa Maria)
Property No. 26: Fowler Elementary School

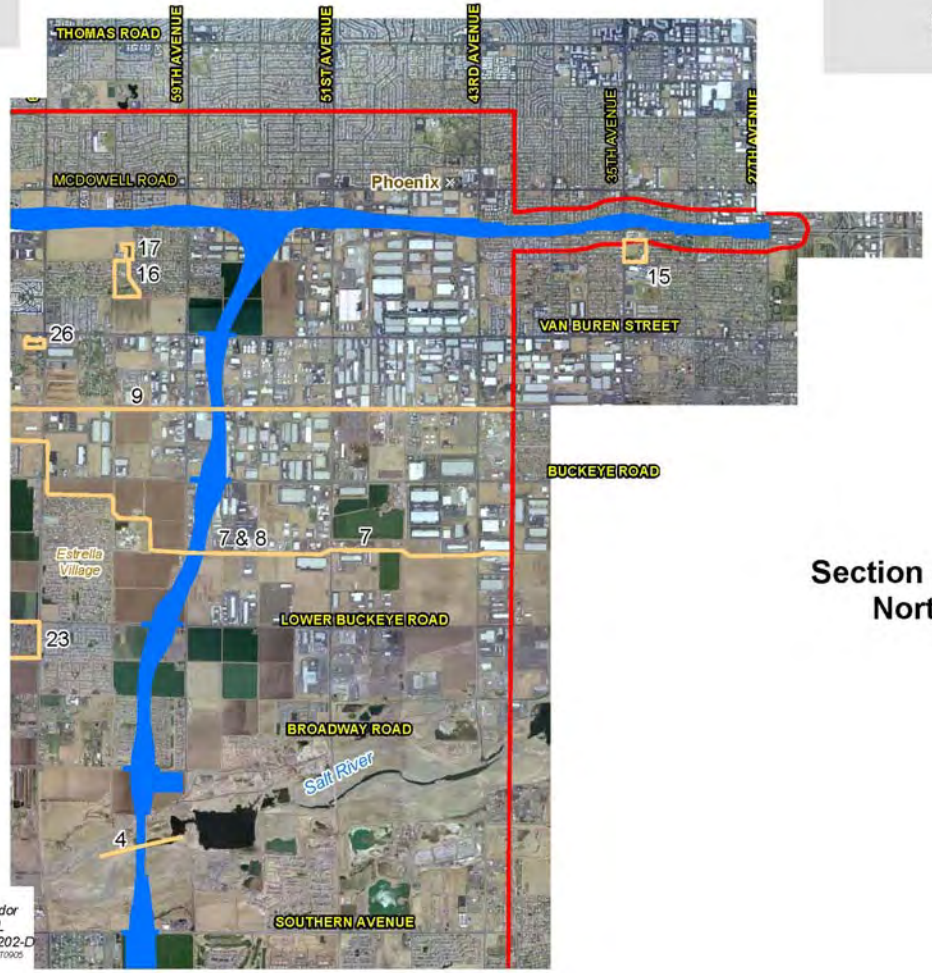
Legend

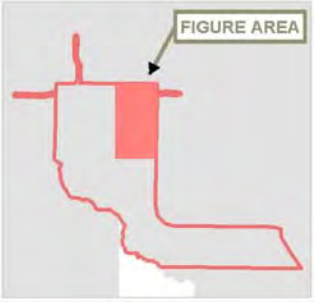
4(f) Property
Study Area
Property Number

Western Section Alternatives
W55

0 2,000 4,000 Feet

N





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Section 4(f) and 6(f) Report

Section 4(f) and 6(f) Resources- Northeastern Section of the Western Section 3 of 4

South Mountain Freeway
Transportation Corridor Study

Aerial Photography Date: April 2006

Section 4(f) Resources

Property No. 4: Segment Fifty-six of the Maricopa County Regional Trails System
Property No. 7 & 8: Segment Sixty-nine of the Maricopa County Regional Trails System & Roosevelt Canal
Property No. 9: Southern Pacific Railroad Wellton-Phoenix-Eloy Main Line
Property No. 11: Hudson Farm
Property No. 13: Colvin-Tyson Farmstead/Barnes Dairy
Property No. 14: Comprehensive High School
Property No. 16: Sunridge Park
Property No. 18: Laveen Farms Future School
Property No. 19: City of Phoenix Future Park
Property No. 20: Laveen Commons (future park)
Property No. 21: Laveen Meadows Future School
Property No. 22: 71st Avenue and Elwood Street (future park)
Property No. 23: Santa Maria Historic District
Property No. 24: Santa Maria Middle School
Property No. 25: Fowler Elementary School District (future school)
Property No. 26: Fowler Elementary School
Property No. 27: Sacks Webster Farmhouse
Property No. 38: South Mountain Traditional Cultural Property

Legend

- GRIC Boundary
- 4(f) Property
- Study Area
- # Property Number

Western Section Alternatives

- W55
- W71
- W101

0 6,000 12,000 Feet

N

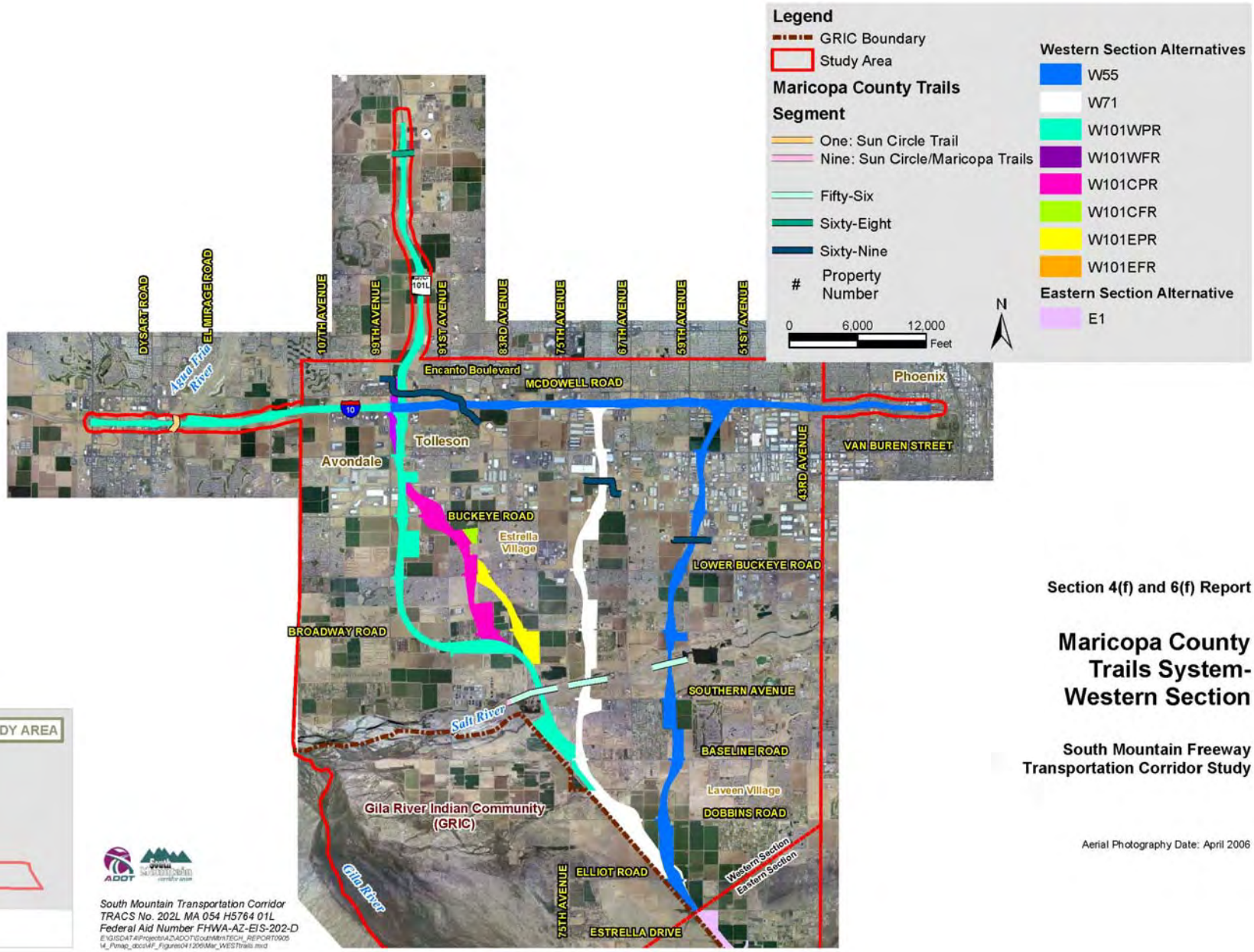
South Mountain Transportation Corridor
TRACS No. 202L MA 054 H5764 01L
Federal Aid Number FHWA-AZ-EIS-202-D

Section 4(f) and 6(f) Report

Section 4(f) and 6(f) Resources- Southeastern Section of the Western Section 4 of 4

South Mountain Freeway
Transportation Corridor Study

Aerial Photography Date: April 2006

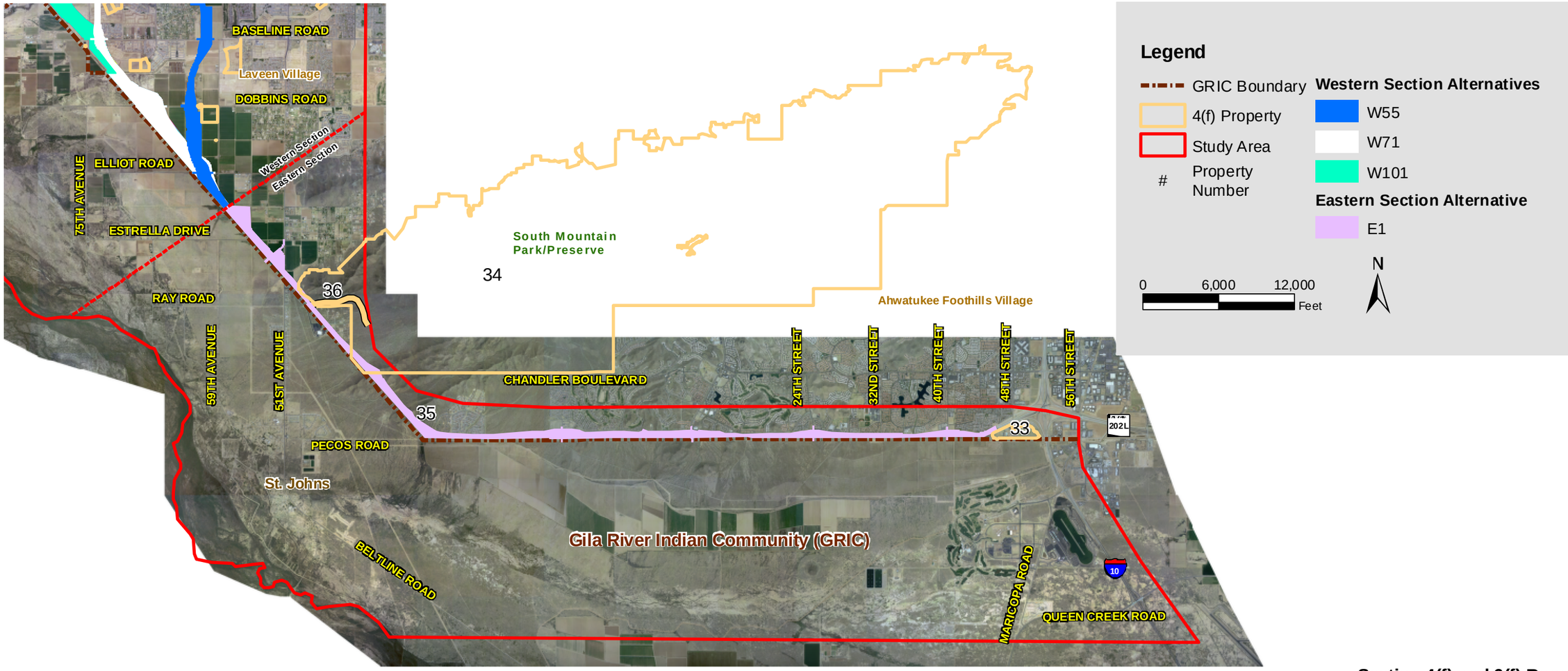


Section 4(f) and 6(f) Report

Maricopa County Trails System-Western Section

South Mountain Freeway Transportation Corridor Study

Aerial Photography Date: April 2006



Section 4(f) and 6(f) Report

Section 4(f) and 6(f) Resources- Eastern Section

Section 4(f) Resources
Property No. 33: Pecos Park
Property No. 34: South Mountain Park/Preserve
Property No. 35: South Mountain Traditional Cultural Property (boundary not defined and not shown)
Property No. 36: Segment Seven of Sun Circle and Maricopa Trails

South Mountain Freeway Transportation Corridor Study

Aerial Photography Date: April 2006

South Mountain Transportation Corridor
TRACS No. 202L MA 054 H5764 01L
Federal Aid Number FHWA-AZ-EIS-202-D
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