

Appendix C

**FHWA and ADOT Environmental Commitments and Mitigation
Measures**

Table 3 Commitments and Mitigation Measures

Commitments and Mitigation Measures		Timing for Implementation
Land Use		
LNDU-1	ADOT and FHWA will coordinate with public land holding agencies (BLM and ASLD) managing affected public land and the various leaseholders to complete acquisition of parcels needed for the South Mountain Freeway.	R/W Acquisition
Social Conditions		
SOC-1	ADOT will consider methods of reducing the amount of R/W needed, providing alternative access to the local road network to satisfy emergency services access requirements, and using noise barriers, aesthetic treatments of structures, and landscaping to reduce neighborhood intrusions.	Final Design
SOC-2	ADOT will coordinate during the design phase to designate necessary utility corridors for relocations where appropriate.	Final Design
SOC-3	ADOT will coordinate with all local agencies and private facility owners to minimize, where possible, the effects of utility relocations and adjustments. Coordination will include, when possible, developing construction schedules to coincide with scheduled maintenance periods and off-peak loads.	Construction
SOC-4	ADOT will coordinate with appropriate City of Phoenix officials during the final design process to consider and identify, if appropriate, enhancements such as a pedestrian overpass to reduce possible pedestrian-related impacts. Such enhancements would be independent of this project and would not change this NEPA document.	Final Design
SOC-5	ADOT will coordinate with municipalities and affected communities to address and resolve impacts on internal road networks.	Final Design
SOC-6	ADOT will develop and implement a public involvement plan for the design and construction phases of the proposed action. Objectives of continued public involvement may include, but will not be limited to, a level of involvement in: <ul style="list-style-type: none"> • architectural design treatment of structures • measures to minimize harm to Section 4(f) resources • the acquisition and relocation process • modification to the local roadway network • construction activity monitoring 	Final Design, Construction
SOC-7	ADOT will coordinate with all appropriate emergency services, and efforts will be made to minimize effects on response routes and times for all service areas.	Construction
Displacements and Relocations		
DIS-1	An acquisition and relocation assistance program will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (49 C.F.R. Part 24), which identifies the process, procedures, and entitlements for R/W acquisition and relocation of affected residents or businesses.	R/W Acquisition
DIS-2	Relocation assistance will be available to all residential and business relocatees, without discrimination. All replacement housing will be decent, safe, and sanitary. Replacement housing is available in the general area; last-resort housing will, however, be provided if it were found that sufficient, comparable housing were not available within monetary limits of owners and tenants. If necessary, specific relocation plans will be developed to assist displacees, including residents of mobile homes, in finding new locations for their mobile homes. All acquisitions and relocations resulting from the proposed freeway will comply with Title VI of the Civil Rights Act of 1964 and with 49 C.F.R. Part 24.	R/W Acquisition
DIS-3	Private property owners will be compensated at market value for land and may be eligible for additional benefits. As for renters, HUD considers anything under a 6 percent rental vacancy rate as a “tight” rental market. The Rental Supplement is based on a calculation between the current rental plus utilities and the determined available comparable rental unit plus utilities times 42 months (if the amount of the benefit exceeds \$7,200 the benefit would fall under the Last Resort Provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended). This payment will be made available to assist with the difference in rent if the cost of replacement housing were to exceed the rental cost at that time (with conditions).	R/W Acquisition
DIS-4	ADOT will provide, where possible, alternative access to properties losing access to the local road network. In the event that alternative access could not be provided, ADOT will compensate affected property owners in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.	Final Design, R/W Acquisition
DIS-5	ADOT will coordinate with the local jurisdictions, MAG, and Valley Metro to identify opportunities to use excess R/W, whenever possible, for future park-and-ride lots and related public facilities.	Final Design, R/W Acquisition

Note: Abbreviations and acronyms are provided at the end of this table, on page 47.

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Table 3 Commitments and Mitigation Measures (continued)

Commitments and Mitigation Measures		Timing for Implementation
Economics		
ECON-1	During construction, ADOT will coordinate with local businesses to ensure reasonable access to businesses will be maintained during regular operating hours.	Construction
Air Quality		
AQ-1	<p>Mitigation measures will be followed in accordance with Maricopa County rules 310 and 310.01. Such measures could include, but are not limited to:</p> <p>Site preparation</p> <ul style="list-style-type: none"> • Minimize land disturbance. • Use watering trucks to minimize dust. • Stabilize the surface of dirt piles if not removed immediately. • Use windbreaks to prevent accidental dust pollution. • Limit vehicular paths and stabilize temporary roads. • To prevent dirt from tracking or washing onto paved roads, stabilized construction entrances will be placed adjacent to paved roads and fencing will be installed to direct vehicles to drive over the track pad immediately before entering a paved surface. 	Construction
AQ-2	<p>Construction</p> <ul style="list-style-type: none"> • Use dust suppressants on unpaved traveled paths. • Minimize unnecessary vehicular and machinery activities. • To prevent dirt from tracking or washing onto paved roads, stabilized construction entrances will be placed adjacent to paved roads and fencing will be installed to direct vehicles to drive through the entrance before entering a paved surface. • To the extent practicable, construction equipment that meets EPA’s Tier 4 emission standards shall be used. • Where feasible, construction equipment powered by alternative fuels (e.g., biodiesel, compressed natural gas, electricity) shall be used. • ADOT will require training in compliance with Maricopa County rule 310 for contractor’s personnel regarding air quality impacts from construction activities, potential health risks, and methods to reduce emissions. 	Construction
AQ-3	<p>Postconstruction</p> <ul style="list-style-type: none"> • Revegetate or use decomposed granite or rock mulch on all disturbed land. • Remove dirt piles and unused materials. • Revegetate all vehicular paths created during construction to avoid future off-road vehicular activities. • Include control of access fence to prevent vehicle traffic on unpaved surfaces. 	Construction
AQ-4	A Traffic Management Plan will be developed and implemented to help reduce impacts of traffic congestion and associated emissions during construction.	Preconstruction
AQ-5	An approved dust permit will be obtained prior to demolition and construction from the Maricopa County Air Quality Department for all phases of the proposed action. The permit will describe measures to control and regulate air pollutant emissions.	Preconstruction
Noise		
NOI-1	General locations of noise barriers have been identified, but these locations and general noise wall design will be reevaluated as design progresses. Where feasible, noise barriers will be constructed as early as possible in the construction phasing to shield adjacent properties from construction-related noise impacts.	Final Design, Construction
Water Resources		
WRE-1	The proposed freeway will have properly designed drainage channels to resist erosion, energy-dissipating structures at all culverts where discharge velocity may cause downstream erosion, and sediment-trapping basins strategically located to maximize sediment removal and to function as chemical-spill containment structures.	Final Design
WRE-2	Vegetative or mechanical means will be used to minimize erosion from cut and fill slopes.	Final Design

Note: Abbreviations and acronyms are provided at the end of this table, on page 47.

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Table 3 Commitments and Mitigation Measures (continued)

Commitments and Mitigation Measures		Timing for Implementation
WRE-3	Runoff discharge from the roadway to the irrigation district canals and conveyance ditches will be minimized by roadway design and the use of permanent BMPs.	Final Design
WRE-4	To reduce the potential impact of contaminants such as oil, grease, soil, and trash, settling basins will be used to collect water and allow materials to settle. The basins could also serve to contain chemical spills resulting from vehicle accidents. Each basin will be designed to contain an initial rainfall runoff volume before allowing discharge. If an accident occurs, and the basins are dry at the time of the accident, the spill volume, in most cases, will be accommodated.	Final Design
WRE-5	A construction AZPDES permit, for ground-disturbing activities exceeding 1 acre, will be obtained from ADEQ for the project in accordance with the provisions set forth in Section 402 of the CWA. The AZPDES permit must be consistent with discharge limitations and water quality standards established for the receiving water. The contractor shall coordinate with ADOT before filing a Notice of Intent and a Notice of Termination with ADEQ in accordance with Section 402 of the CWA and shall provide copies of the permit authorization to ADOT.	Preconstruction
WRE-6	A SWPPP shall be prepared by the contractor in accordance with the AZPDES construction general permit. Upon construction completion, all contaminated material (e.g., concrete wash water) will be removed and disposed of in accordance with local, regional, and federal regulations. The contractor will comply with ADOT's Post-Construction Best Management Practices Program.	Preconstruction, Construction, Postconstruction
WRE-7	ADOT will coordinate with appropriate governmental bodies such as flood control districts and the Community when designing drainage features for the proposed action.	Final Design
WRE-8	ADOT will replace water lost through well acquisitions. This will be done through full well replacement or well abandonment and compensation (if requested by the owner).	R/W Acquisition
WRE-9	An analysis will be performed during the design process to determine whether it is possible to keep the Foothills Community Association well in its current location, but move the well controls and associated piping to outside of the R/W.	R/W Acquisition
WRE-10	Existing irrigation canals affected by the freeway may be relocated to allow for conveyance of irrigation water (through installation of pipe, conduit, or extension) from one side of the freeway to the other.	Construction
WRE-11	A copy of the certificate authorizing permit coverage and a copy of the Notice of Termination acknowledgement letter will be sent to ADOT EPG, Glendale, Phoenix, Chandler, Goodyear, Tolleson, and Avondale, as appropriate, based on the location of project activities	Preconstruction
WRE-12	ADOT will comply with the State of Arizona Surface Water Quality Standard Rules (18 A.A.C. § 11).	R/W Acquisition, Final Design, Construction, Postconstruction
WRE-13	Water used for dust suppression will not contain contaminants that could violate ADEQ water quality standards for surface waters or aquifers and will not be discharged off site. ADOT will obtain the necessary permits for such activities.	Preconstruction, Postconstruction
Floodplains		
FLD-1	Bridge structures will be designed to cross floodplains in such a way that their support piers and abutments will not contribute to a rise in floodwater elevation of more than a foot.	Final Design
FLD-2	Floodplain impacts will be minimized by implementing transverse crossings of the floodplain and avoiding longitudinal encroachments.	Final Design
FLD-3	The Maricopa County Floodplain Manager and/or Floodplain Administrator will be given an opportunity to review and comment on the design plans.	Final Design
FLD-4	On-site drainage design shall be performed using the procedures in FHWA's <i>Urban Drainage Design Manual, Hydraulic Engineering Circular No. 22</i> (2009b, with revisions).	Final Design
FLD-5	The hydraulic design of culverts shall be performed using the procedures in FHWA's <i>Hydraulic Design Series No. 5, Hydraulic Design of Highway Culverts</i> (2012). Other criteria include: <ul style="list-style-type: none"> • Culverts will be sized, at a minimum, based on the design discharge of a 50-year storm. • With the 100-year storm, water levels should not significantly increase the flood damage potential on areas outside of the proposed R/W or as noted in accordance with ADOT's <i>Roadway Design Guidelines</i> (2012a), Section 611.3.C. • Reinforced concrete box culvert and reinforced concrete pipe will be provided with adequate cover. • Outflow discharges from detention basins shall not cause peak discharges downstream greater than peak discharges without the project. 	Final Design

Note: Abbreviations and acronyms are provided at the end of this table, on page 47.

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Table 3 Commitments and Mitigation Measures (continued)

Commitments and Mitigation Measures		Timing for Implementation
FLD-6	Comprehensive hydrologic, hydraulic, sediment transport, and erosion-related assessments regarding potential 100-year flood effects associated with ephemeral washes will be conducted on the Selected Alternative. Results will provide information necessary to make a determination regarding what mitigation measures will need to be implemented. Measures may include physical structures associated with the freeway such as culverts.	Final Design
Waters of the United States		
WUS-1	ADOT will prepare and submit an application to USACE for a CWA Section 404 permit as appropriate, dictated by impacts on jurisdictional waters. If necessary, ADOT will submit a CWA Section 401 application to ADEQ. The permit conditions will be developed according to the current Memorandum of Agreement between USACE, ADOT, and FHWA. No work will occur within jurisdictional waters until the appropriate CWA Section 401 certification and Section 404 permit is obtained.	Preconstruction
WUS-2	If more time is required to complete the South Mountain Freeway than authorized by the Section 404 of the CWA permit, ADOT will submit a request for a time extension to USACE and ADEQ at least 1 month prior to reaching the authorized date.	Construction
WUS-3	If previously unidentified cultural resources are encountered in or adjacent to waters of the United States during the construction of the freeway, ADOT will notify FHWA and USACE immediately to make arrangements for the proper treatment of those resources.	Construction
WUS-4	If ADOT sells the freeway, ADOT will obtain the signature of the new owner in the applicable space provided in the permit and will forward a copy of the permit to USACE to validate the transfer of the authorization.	Postconstruction
WUS-5	ADOT will provide a copy of the Section 401 water quality certification conditions to all appropriate contractors and subcontractors. ADOT will post a copy of these conditions in a water-resistant location at the construction site where it may be seen by workers.	Preconstruction
WUS-6	ADOT will maintain the project authorized by the permit in good condition and in conformance with the terms and conditions of the permit. ADOT will not be relieved of this condition even if ADOT abandons the project. Should ADOT cease to maintain the freeway or abandon the freeway without a good faith transfer, ADOT will obtain a modification of the CWA Section 404 permit from USACE.	Operation, Maintenance
WUS-7	If a substantive change/modification to the project is necessary, ADOT will provide notice and supporting information to FHWA, ADEQ, and USACE for review.	Final Design, Construction
WUS-8	When construction begins, ADOT will notify ADEQ and USACE prior to the start date. When notification is made, ADOT will provide the start date and the name and phone number of the primary contractor and a contact person. When the activities are completed, ADOT will notify ADEQ and USACE after project completion as required by the CWA Section 401 certification and CWA Section 404 permit.	Preconstruction
WUS-9	ADOT will comply with all conditions set forth in the CWA Section 404 permit, CWA Section 401 certification, and CWA Section 402 construction general permit made as part of the project.	Construction
WUS-10	Prior to initiating construction activities under the permit, ADOT will ensure that all appropriate contractors and subcontractors have been provided with a copy of the Section 404 authorization. This will be intended to confirm that the contractor(s) will comply with the terms and conditions of the Section 404 authorization and that a copy of the permit will be maintained on-site.	Preconstruction
WUS-11	After completion of the proposed project, the washes will be returned to a preconstruction elevation.	Construction, Postconstruction
WUS-12	Pollution from the operation of equipment in the floodplain shall be cleaned up and removed by the contractor before it can be washed into a watercourse. Spills will be promptly cleaned and properly disposed.	Construction
WUS-13	Temporary erosion and sediment control measures will be installed, at a minimum, according to ADOT's <i>Standard Specifications for Road and Bridge Construction (2008)</i> and <i>Erosion and Pollution Control Manual (2012b)</i> , prior to construction and will be maintained as necessary during construction and will not be installed in a manner that causes noncompliance with the Section 404 permit.	Preconstruction, Construction
WUS-14	If permanent erosion and sediment control measures are required, they will be installed as soon as practicable, preferably prior to construction activities, and will be maintained throughout the life of the project. Permanent erosion and sediment control measures will be located to protect downstream entities from construction impacts when there will be a flow in watercourses within the project boundary.	Preconstruction, Construction
WUS-15	Any soil contaminated as a result of contractors' operations shall be assessed and then disposed of in an appropriate, approved disposal facility.	Construction

Note: Abbreviations and acronyms are provided at the end of this table, on page 47.

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Table 3 Commitments and Mitigation Measures (continued)

Commitments and Mitigation Measures		Timing for Implementation
WUS-16	No excavation, fill, or leveling will be permitted in the watercourses outside the boundaries of the permitted work area.	Construction
WUS-17	No fill will be taken from any watercourse outside the boundaries of the permitted work area. Fill will come from an area outside the OHWM of any watercourses and will be free of any contaminants or pollutants.	Construction
WUS-18	Heavy equipment traffic shall be restricted from entering the watercourses outside the boundaries of the permitted work area. Appropriate barricades shall be installed to preclude this activity.	Construction
WUS-19	During construction, the work sites shall be maintained such that no construction debris or material spillover shall be allowed in the watercourses. Upon completion of the work, all construction debris and excess material shall be removed from the job sites and disposed of appropriately outside the USACE jurisdictional areas.	Construction, Postconstruction
WUS-20	During construction, appropriate measures shall be taken to accommodate flows within the watercourses, such that waters will not be diverted outside the OHWM.	Construction
WUS-21	ADOT will fence, stake, or flag the construction limits for work within waters of the United States.	Preconstruction
WUS-22	ADOT will mitigate for any permanent loss of waters of the United States, as required by USACE.	Preconstruction
Topography, Geology, and Soils		
GEO-1	The contractor shall be required to perform in-depth pre- and postconstruction surveys for all structures located within one-half mile in the event any blasting and/or heavy ripping is planned for construction purposes. This documentation shall include photographic and video documentation.	Preconstruction, Construction, Postconstruction
GEO-2	Geotechnical-related construction effects will be mitigated through use of appropriate design, including excavations and slopes in soil and rock with an accepted degree of safety, placement of fills with an accepted degree of safety, protection of excavation and fill slopes against erosion, and design of roadway subgrade and foundations in accordance with accepted practices.	Final Design, Construction
Biological Resources		
BIO-1	Protected native plants within the project limits will be affected by this project; therefore, ADOT will determine whether ADA notification will be needed. If notification is needed, ADOT will send the notification at least 60 calendar days prior to the start of construction.	Preconstruction
BIO-2	The freeway will be designed to protect and maintain opportunities for wildlife movement between the South Mountains, the Gila River, and the Sierra Estrella. These opportunities will be located in the region where the freeway will intersect the southwestern portion of the South Mountains. The project will include the five multiuse crossings (bridge structures) identified in Figure 16. Multiuse crossing 4 is aligned with the Maricopa County Regional Trail/Sun Circle Trail/National Trail (see Figure 5-5 on page 5-8 of the Final Environmental Impact Statement). Multiuse crossings 1, 2, 3, and 5 will facilitate wildlife movement and provide access by Community members to the South Mountains. These crossing structures and associated fences will be designed to reduce the incidence of vehicle-wildlife collisions and to reduce the impact of the proposed action on wildlife connectivity between the South Mountains, the Gila River, and the Sierra Estrella. ADOT will coordinate with USFWS, AGFD, and the Community's Department of Environmental Quality during the design phase regarding the location and design of wildlife-sensitive roadway structures.	Final Design
BIO-3	For drainage structures, such as culverts located in potential wildlife movement corridors, ADOT will coordinate with USFWS, AGFD, and the Community's Department of Environmental Quality during the design phase regarding the location and design of wildlife-sensitive roadway structures based on the results of species surveys.	Final Design
BIO-4	All disturbed soils not paved that will not be landscaped or otherwise permanently stabilized by construction will be seeded using species native to the project vicinity.	Construction
BIO-5	ADOT will coordinate with AGFD and the Community's Department of Environmental Quality regarding State and culturally sensitive species and ADOT will determine whether additional species-specific mitigation measures are appropriate.	Final Design
BIO-6	If new species or critical habitat are listed following completion of the ROD, or if the potential effects on species or critical habitat from the project have changed from those described in the Biological Evaluation, an update to the Biological Evaluation will be prepared and any required consultation with USFWS will be completed. ADOT will coordinate with USFWS, AGFD, and the Community's Department of Environmental Quality to determine whether any additional species-specific mitigation measures will be required.	Preconstruction, Construction
BIO-7	Prior to construction, ADOT will arrange for surveys to be completed for the Sonoran desert tortoise and other species as determined by ADOT to be necessary.	Preconstruction
BIO-8	ADOT will require the contractor's personnel to receive training as part of the overall project safety program regarding procedures for interactions with sensitive species that may be encountered during construction.	Preconstruction

Note: Abbreviations and acronyms are provided at the end of this table, on page 47.

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Table 3 Commitments and Mitigation Measures (continued)

Commitments and Mitigation Measures		Timing for Implementation
BIO-9	If vegetation clearing will occur during the migratory bird breeding season (March 1 to August 31), the contractor shall avoid any active bird nests. If the active nests cannot be avoided, the contractor shall notify the ADOT Engineer to evaluate the situation. During the non-breeding season (September 1 to February 28), vegetation removal is not subject to this restriction. If any active bird nests cannot be avoided by vegetation clearing or construction activities, the ADOT Engineer will contact the EPG Biologist (602-712-6819 or 602-712-7767) to evaluate the situation.	Construction
BIO-10	Invasive species surveys will be conducted during the design phase. If noxious or invasive species are found to be present in the project footprint during that survey, the contractor will develop and implement an invasive and noxious species control plan.	Final Design
BIO-11	To prevent the introduction of invasive species seeds, the contractor shall inspect all earthmoving and hauling equipment at the equipment storage facility and the equipment shall be washed prior to entering the construction site.	Construction
BIO-12	To prevent invasive species seeds from leaving the site, the contractor shall inspect all construction equipment and remove all attached plant/vegetation and soil/mud debris prior to leaving the construction site.	Construction
BIO-13	Habitat impacts shall be minimized by restricting construction activities to the minimum area necessary to perform the activities and by maintaining natural vegetation where possible.	Construction
BIO-14	If any Sonoran desert tortoises are encountered during construction, the contractor shall adhere to the most current guidelines regarding encounters with Sonoran desert tortoises.	Construction
BIO-15	The contractor shall develop procedures for encounters with sensitive species in the Environmental Management Plan. The procedures shall include allowing the animal to leave of its own accord or contacting a trained person if the animal needs to be removed from the work area.	Construction
BIO-16	A biologist will be employed to complete a preconstruction survey for burrowing owls 96 hours prior to construction in all suitable habitat that will be disturbed. The biologist shall possess a burrowing owl survey protocol training certificate issued by AGFD. Upon completion of surveys, the survey results will be reviewed with the ADOT biologist and a course of action will be identified.	Preconstruction
BIO-17	If any burrowing owls are located in the work area, the contractor shall immediately stop work at that location and notify the ADOT Engineer. The ADOT Engineer will contact the ADOT biologist to determine whether the owls could be avoided or must be relocated. The contractor shall not work within 100 feet of any active burrow until the situation had been evaluated by the ADOT biologist. If the ADOT biologist determined that the owl must be relocated, a biologist holding a rehabilitation permit from USFWS will relocate burrowing owls from the project area.	Construction
Cultural Resources		
CUL-1	ADOT, on behalf of FHWA and in conjunction with tribal and local authorities, Western, and BIA, developed a PA for the proposed action under Section 106 of the National Historic Preservation Act of 1966. No ground-disturbing activities will be conducted until ADOT EPG has notified the ADOT Engineer that the terms and stipulations of the PA have been fulfilled (see Appendix D of Volume III of the ROD).	Preconstruction
CUL-2	Strategies for prehistoric sites will include: <ul style="list-style-type: none"> • In accordance with the PA, a historic properties treatment plan will be developed and implemented for the sites by ADOT. ADOT will consult with SHPO and other consulting parties as required. Depending on the results of the testing program, follow-up data recovery excavations might also be required. • A burial agreement with the ASM and concerned Native American Tribes will be developed to outline procedures for proper removal, treatment, and reburial of any human remains and associated funerary objects that might be encountered. 	Preconstruction
CUL-3	Impacts on the Roosevelt Canal and historic Southern Pacific Railroad will be avoided through the use of bridges to span the resources.	Final Design
CUL-4	ADOT and FHWA will fund a TCP evaluation of the South Mountains TCP to be prepared by the Community. FHWA and ADOT will fund the development and implementation of a TCP enhancement and management plan to be prepared by the Community.	Post-Record of Decision
CUL-5	Consultation will continue throughout design and construction with SHPO, the Community, and other Tribes regarding other appropriate mitigation strategies; selected, limited disclosure of locations of cultural resources sites; and other cultural resources issues related to the freeway.	Final Design, Construction
CUL-6	Pedestrian access to TCPs will be modified by the freeway. Access will be maintained by multifunctional crossings under the freeway. The interested Native American Tribes will continue to be consulted on the multifunctional crossings in conjunction with the design of the freeway.	Final Design
CUL-7	Gaps in the cultural resources inventory are being investigated by ADOT and will continue during the design phase. All cultural resource inventories will be completed prior to any construction or any ground-disturbing activities. Additionally, all land acquired by ADOT that has not been previously surveyed will be surveyed and consultation will occur as appropriate.	Final Design, Preconstruction

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Table 3 Commitments and Mitigation Measures (continued)

Commitments and Mitigation Measures		Timing for Implementation
CUL-8	If previously unidentified cultural resources are encountered during activity related to the construction of the freeway, the contractor shall stop work immediately at that location and shall take all reasonable steps to secure the preservation of those resources and notify the ADOT Engineer. The ADOT Engineer will contact the ADOT EPG HPT immediately and make arrangements for the proper treatment of those resources. ADOT will, in turn, notify the appropriate agency(ies) to evaluate the significance of those resources.	Construction
CUL-9	The contractor shall contact the ADOT EPG HPT (602-712-8636 or 602-712-7767) at least 14 business days prior to the start of ground-disturbing activities to arrange for a qualified archaeologist to flag avoidance areas and arrange for a monitor. The contractor shall avoid all flagged and/or otherwise designated sensitive resource areas within or adjacent to the project area.	Preconstruction
CUL-10	If human remains or funerary objects are encountered during activity related to the construction of the freeway, the contractor shall stop work immediately within the area of the discovery, take steps to protect the discovery, and immediately notify the ADOT EPG HPT (602-712-8636 or 602-712-7767). ADOT EPG HPT shall notify and consult with appropriate Native American groups to determine the proper treatment and disposition measures in accordance with the implemented burial agreement. ADOT EPG HPT shall also inform the director of the ASM and SHPO of the discovery.	Construction
CUL-11	All key personnel and those people involved in field work or ground disturbing activities during the design, construction, and operation of the project will attend cultural sensitivity training conducted by the Community prior to any ground disturbing activities.	Final Design, Preconstruction
Prime and Unique Farmland		
PUF-1	During the design phase of the proposed action, ADOT will coordinate with affected property owners as part of the R/W acquisition process to provide access, if possible, for farm equipment between divided agricultural parcels or to purchase remaining farm parcels considered too small to be farmed either economically or functionally.	R/W Acquisition, Final Design, Construction
PUF-2	Provision will be made for access to farmland otherwise made functionally inaccessible by the project.	Final Design, Construction
Hazardous Materials		
HZM-1	A site-specific Phase I assessment will be performed prior to site acquisition for each property.	R/W Acquisition
HZM-2	ADOT will review the status of open regulatory cases relating to hazardous materials releases during the Phase I assessments. Responsible parties associated with any open regulatory cases will be determined at that time. ADOT will coordinate with responsible parties to determine the status of any required cleanup actions.	Final Design
HZM-3	ADOT will conduct asbestos and lead-paint inspections of structures to be demolished and will require abatement measures during demolition according to NESHAP regulations.	R/W Acquisition
HZM-4	ADOT will determine the need for additional site assessments with the final design submittal.	Final Design
HZM-5	Staging for construction activities near wells or dry wells will be located in areas where accidental releases of potential contaminants will be minimized and any accompanying threat to groundwater resources minimized.	Preconstruction
HZM-6	In cooperation with the contractor, ADOT will develop and coordinate emergency response plans with local fire authorities, local hospitals, and certified emergency responders for hazardous materials releases or chemical spills.	Preconstruction
HZM-7	If suspected hazardous materials are encountered during construction, work will cease at that location and ADOT will arrange for proper assessment, treatment, or disposal of those materials.	Construction
HZM-8	Asbestos- and lead-paint-containing materials identified in structures to be demolished will be properly removed and disposed of prior to demolition according to NESHAP and EPA/HUD regulations, respectively.	R/W Acquisition
HZM-9	Any existing aboveground storage tanks or underground storage tanks will be removed or relocated. The removal/relocation activities will be addressed in accordance with applicable laws and regulations of ADEQ.	R/W Acquisition
HZM-10	The contractor shall develop an on-site health and safety plan for construction activities.	Preconstruction
HZM-12	The contractor shall develop a hazardous waste management plan for the handling of hazardous materials during construction.	Construction
HZM-13	Use of asbestos-containing materials will be prohibited for construction.	Construction

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Table 3 Commitments and Mitigation Measures (continued)

Commitments and Mitigation Measures		Timing for Implementation
Visual Resources		
VIS-1	<p>During the design phase, ADOT will evaluate:</p> <ul style="list-style-type: none"> • leaving in place rock outcrops—if stable and not a hazard to the traveling public—not interfering with construction or looking out-of-place in the natural landscape • using vegetative buffers to screen views both of the road and from the road • transplanting saguaro, mature trees, and other cacti likely to survive the transplanting and setting-in period to visually sensitive or critical roadway areas • blending retention basins and their landscape treatments into their natural surroundings • placing landscape treatment on the periphery of R/W areas at overpass locations as well as at other areas adjacent to residential development • clustering or grouping plant material in an informal pattern to break up the linear form of the freeway • using strategic gaps in plantings to frame positive views from the road • using earth colors for overpasses, retaining and screen walls, and noise barriers • using natural-tone metals with a noncontrasting, nonglare finish for guardrails and handrails • using riprap that blends with the surrounding rocks and exposed soil color • using shotcrete that matches the color and texture of adjacent rocks • using bridges and overpass structural systems that help unify a visually complex landscape • minimizing structural sizes and/or recessing the face of structural members from the edge of the roadway to reduce real or apparent breadth of structures 	Final Design, Construction
VIS-2	<p>If a jurisdiction through which the freeway will pass were to request treatments other than ADOT’s South Mountain Freeway corridor standard palette of treatments to noise barriers, screen walls, piers, concrete barriers, retaining walls, or highly visible headwalls, such efforts may be negotiated with ADOT. (Treatments beyond the ADOT South Mountain Freeway corridor standard palette may be more expensive to construct and/or maintain. In such cases, a given jurisdiction must cover the additional expenses to secure the desired treatment.)</p>	Final Design
VIS-3	<p>Road cuts through the South Mountains will incorporate the newly exposed rock faces characteristic of the adjacent natural rock features, including scale, shape, slope, and fracturing to the extent that could be practicable and feasible as identified through geotechnical testing and constructibility reviews. ADOT will require the contractor to round and blend new slopes to mimic the existing contours to highlight natural formations. ADOT will evaluate having the contractor adjust and warp slopes at intersections of cuts and natural grades to flow into each other or transition with the natural ground surfaces without noticeable breaks.</p>	Final Design, Construction
VIS-4	<p>Freeway lighting will be provided along the median of the freeway and at interchanges to achieve desired lighting levels for safety reasons. Any freeway lighting will be designed to reduce illumination spillover onto sensitive light receptors (such as residential and natural areas).</p>	Final Design
Temporary Construction Impacts		
TMP-1	<p>A traffic control plan will be developed and implemented to help reduce impacts of traffic congestion and associated emissions during construction.</p>	Preconstruction
TMP-2	<p>An approved “Application for Earth Moving Permit, Demolition, and Dust Control Plan” will be obtained prior to construction from the Maricopa County Air Quality Department for all phases of the proposed action. The permit will describe measures to control and regulate air pollutant emissions during construction.</p>	Preconstruction
TMP-3	<p>The following measures will be implemented for the Selected Alternative:</p> <ul style="list-style-type: none"> • All equipment exhaust systems will be in good working order. Properly designed engine enclosures and intake silencers will be used. • Equipment will be maintained on a regular basis. New equipment will be subject to new product emission standards. • Stationary equipment will be located as far away from sensitive receivers as possible. • Construction-related noise generators will be shielded from noise receivers (e.g., use temporary enclosures to shield generators or crushers, take advantage of site conditions to provide topographic separation). • Construction alerts will be distributed to keep the public informed of construction activities, and a toll-free number for construction-related complaints will be provided. • During the design phase, hours of operation will be evaluated to minimize disruptions during construction. 	Construction

Note: Abbreviations and acronyms are provided at the end of this table, on page 47.

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Table 3 Commitments and Mitigation Measures (continued)

Commitments and Mitigation Measures		Timing for Implementation
TMP-4	Congestion from construction-related traffic will create temporary impacts in the project vicinity. The magnitude of these impacts will vary depending on the location of the sources of the fill material and of the disposition sites for surplus material, the land uses along the routes, the duration of hauling operations, staging locations, and the construction phasing. To identify acceptable routes and times of operation, ADOT, or its representative, will prepare an agreement with local agencies regarding hauling of construction materials on public streets.	Final Design, Preconstruction
TMP-5	Traffic will be managed by a detailed Transportation Management Plan, including coordination with potentially affected public services. Access will be maintained during construction, and construction activities that might substantially disrupt traffic will not be performed during peak travel periods. To minimize disruption, ADOT will coordinate with local jurisdictions regarding traffic control and construction activities during special events. Requirements for the use of construction notices and bulletins will be identified as needed. The effectiveness of the traffic control measures will be monitored during construction and any necessary adjustments will be made.	Final Design, Construction
TMP-6	ADOT will coordinate with the responsible local entities regarding the relocation of utilities, as appropriate. ADOT coordination with affected utilities will be ongoing and will continue through the design phase. Utilities with prior rights will be relocated at ADOT cost according to the requirements of the utility.	Final Design, Preconstruction
TMP-7	Disruptions to utility services, if necessary, will be restricted to being short-term and localized. ADOT and project contractors will continue to coordinate with utility providers during the design phase and project construction to identify potential problems and/or conflicts and to provide opportunities for their resolution prior to proposed actions. Replacement and/or relocation of utilities will be coordinated with ADOT construction activities and other projects in the area. Planning will include scheduling of disruptions and prior notification of adjacent property owners who will be affected by temporary service cut-offs. Emergency response procedures will be outlined by ADOT in consultation with local utility providers to ensure quick and effective repair of any inadvertent or accidental disruptions in service.	Final Design, Construction
TMP-8	Community access to the TCPs will be maintained during construction, but may temporarily involve detours. The TCPs will be flagged or fenced for avoidance during construction.	Preconstruction, Construction
Material Sources		
MAT-1	The contractor may use material sources from the ADOT <i>Contractor-Furnished Materials Sources List</i> . If the source that the contractor prefers to use is not on the ADOT list, then the contractor shall complete ADOT EPG's Material Source Environmental Analysis Application. Contractor-furnished material sources must go through a process to obtain environmental clearance for use on ADOT projects. The material source owner or operator must submit a Material Source Environmental Analysis Application, with cultural survey and reports, to ADOT EPG. After receiving the completed application, ADOT EPG will initiate a cultural consultation process. Upon successful completion of the environmental review, the material source will receive a tracking number and may be included on the ADOT <i>Contractor-Furnished Materials Sources List</i> .	Preconstruction
MAT-2	Materials excavated from the cuts through the South Mountains shall be used along the project only between 51st Avenue and 17th Avenue.	Construction
Section 4(f)		
S4F-1	Where the Selected Alternative will cross NRHP-eligible properties (specifically, the Grand Canal, Roosevelt Canal, and the historic Southern Pacific Railroad [Wellton-Phoenix-Eloy Main Line]), the freeway will be constructed as an elevated span to clear the properties.	Final Design, Construction
S4F-2	Because existing access to some of the NRHP-eligible properties afforded protection under Section 4(f) may be affected, alternative access will be provided. In those instances, access will not be restricted and utility of the resources will not be altered.	Final Design, Construction
S4F-3	Where the Selected Alternative will cross over trail segments (specifically, Segments Seven, Fifty-six, Sixty-eight, and Sixty-nine of the Maricopa County Regional Trails System, and Segment One of the Sun Circle Trail), the freeway will be constructed as an elevated span to clear the trail segments.	Final Design, Construction
S4F-4	ADOT will engage Maricopa County in the design phase to coordinate the design of the freeway with relevant segments of the County's trail system.	Final Design
S4F-5	During the design phase, ADOT will consult directly with the Phoenix City Manager's office in representing City of Phoenix interests and on behalf of the Sonoran Preserve Advisory Committee, Phoenix Mountains Preservation Council, Mountain Bike Association of America, Phoenix Parks and Recreation Board, and Arizona Horsemen's Association to identify and implement other design measures, when possible, to further reduce parkland needed for the freeway.	Final Design
S4F-6	During the design phase, ADOT will consult directly with the Phoenix City Manager's office in representing City of Phoenix interests to enter into an IGA to identify and purchase replacement land. Replacement land will not exceed a 1:1 ratio (minus previously purchased replacement land) unless ADOT and the City of Phoenix determine jointly that exceeding the 1:1 ratio will be in the best interests of both parties. Under provisions set forth in the IGA entered into by both ADOT and the City of Phoenix, the City will be responsible for identification of replacement land. Once agreed upon under the terms of the IGA, ADOT will issue payment to the City of Phoenix for the acquisition of replacement land. Provisions of the IGA will ensure commitment of the transaction will be solely for the purposes of timely acquisition of public parkland within Phoenix.	R/W Acquisition

Note: Abbreviations and acronyms are provided at the end of this table, on page 47.

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Table 3 Commitments and Mitigation Measures (continued)

Commitments and Mitigation Measures		Timing for Implementation
S4F-7	ADOT will undertake the acquisition process to obtain the land from SMPP for the Selected Alternative. Replacement land will be provided as a measure to minimize harm.	R/W Acquisition
S4F-8	Design measures will be implemented to blend the appearance of the cuts with the surrounding natural environment, as feasible. The degree of slope treatment will depend on the interaction of two primary factors: the angle of the cut slope and the receptivity of the cut rock to rock sculpting and rounding to mimic existing contours and allow for staining, revegetation, and other related measures to blend the slope with the South Mountains' natural setting.	Final Design, Construction
S4F-9	ADOT will undertake additional geotechnical investigations during the design phase to determine, in part, how receptive the proposed slope angles will be to slope treatments. During this period, ADOT will consult directly with the Phoenix City Manager's office in representing City of Phoenix interests and on behalf of the Sonoran Preserve Advisory Committee, Phoenix Parks and Recreation Board, and Phoenix Mountains Preservation Council in establishing a slope treatment plan for cut slopes through the ridgelines, with the clear intent to blend as well as will be possible the cut slopes with the South Mountains' natural setting.	Final Design, Construction
S4F-10	Barriers proposed to mitigate noise impacts on neighboring residential developments (near the Foothills Reserve residential development and the Dusty Lane residential area), while not specifically intended to mitigate noise intrusion into SMPP, will provide incidental noise mitigation.	Final Design
S4F-11	Where appropriate, visual intrusions will be reduced by a number of measures: <ul style="list-style-type: none"> • Vegetation buffers will be used to screen views of the freeway from SMPP. • Saguaros, mature trees, and other cacti likely to survive the transplanting and setting-in period will be transplanted in relatively natural areas near the proposed action to blend with the existing landscape. • Clustering or grouping plant material in an informal pattern to break up the linear form of the freeway will be utilized where appropriate to "naturalize" areas within the R/W. • Landscape treatments using native plants on the periphery of R/W areas at overpass locations and areas near residential developments will be installed where appropriate. • Aesthetic treatments and patterning will be applied to noise barriers, overpasses, abutments, retaining and screening walls. 	Final Design
S4F-12	To set clear parameters defining the scope of the mitigation measures to be implemented and for making environmental determinations, an IGA will be created between ADOT and the City of Phoenix. For the proposed action through SMPP, ADOT will consult directly with the Phoenix City Manager's office in representing City of Phoenix interests and on behalf of the Sonoran Preserve Advisory Committee, Phoenix Parks and Recreation Board, and the Phoenix Mountains Preservation Council and with Community representatives to develop the aesthetic treatment of landscaping and structures through the park/preserve.	Final Design
S4F-13	During the design phase, ADOT will consult directly with USFWS, AGFD, and the Community's Tribal Historic Preservation Officer and Department of Environmental Quality to finalize design features and locations of the crossings designed to provide access to SMPP.	Final Design
S4F-14	The Selected Alternative was designed to avoid two contributing elements to the South Mountains TCP, resulting in no direct use of the TCP elements. A R/W fence will restrict access to the sites by freeway users, but Community members will continue to gain access to the sites as they do currently. ADOT and FHWA will consult with the Community during final design of these features.	Final Design, Preconstruction, Construction
S4F-15	As a measure to minimize harm to the South Mountains TCP, ADOT and FHWA will provide funds for the Community to conduct the TCP evaluation.	Post-Record of Decision
S4F-16	ADOT will invite the Community to participate in direct consultation with the City of Phoenix in establishing a slope treatment plan for cut slopes through the ridgelines, with the clear intent to blend the cut slope with the South Mountains' natural setting.	Final Design, Construction
S4F-17	ADOT will invite the Community to participate in direct consultation with the City of Phoenix to develop the aesthetic treatment of landscaping and structures (e.g., noise barriers) through the South Mountains TCP.	Final Design, Construction
S4F-18	The multipurpose crossings constructed as a measure to minimize harm to SMPP will provide access from the Community to the mountains.	Final Design, Construction

A.A.C. - Arizona Administrative Code
 ADA - Arizona Department of Agriculture
 ADEQ - Arizona Department of Environmental Quality
 ADOT - Arizona Department of Transportation
 AGFD - Arizona Game and Fish Department
 ASLD - Arizona State Land Department
 ASM - Arizona State Museum

AZPDES - Arizona Pollutant Discharge Elimination System
 BIA - U.S. Bureau of Indian Affairs
 BLM - Bureau of Land Management
 BMPs - best management practices
 C.F.R. - Code of Federal Regulations
 Community - Gila River Indian Community
 CWA - Clean Water Act

EPA - U.S. Environmental Protection Agency
 EPG - ADOT Environmental Planning Group
 FHWA - Federal Highway Administration
 HPT - ADOT Historic Preservation Team
 HUD - U.S. Department of Housing and Urban Development
 IGA - intergovernmental agreement
 MAG - Maricopa Association of Governments

NEPA - National Environmental Policy Act
 NESHAP - National Emissions Standards for Hazardous Air Pollutants
 NRHP - National Register of Historic Places
 OHWM - ordinary high-water mark
 PA - programmatic agreement
 ROD - Record of Decision
 R/W - right-of-way

SHPO - State Historic Preservation Office
 SMPP - Phoenix South Mountain Park/Preserve
 SWPPP - Stormwater Pollution Prevention Plan
 TCP - traditional cultural property
 USACE - U.S. Army Corps of Engineers
 USFWS - U.S. Fish and Wildlife Service
 Western - Western Area Power Administration