

**U.S. Department of the Interior
Bureau of Land Management**

Cottonwood Canyon Road Right-of-Way

ENVIRONMENTAL ASSESSMENT

**BLM Case File No. AZA 35539
BLM EA No. AZ-G020-2011-0017**

U.S. Department of the Interior
Bureau of Land Management
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BLM



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1 INTRODUCTION

1.1 Project Background

AK Mineral Mountain, Limited Liability Company (LLC), NL Mineral Mountain, LLC, POG Mineral Mountain, LLC, SMT Mineral Mountain, LLC, and Welch Mineral Mountain, LLC (Owners/Developers) and Pinal County propose to improve a portion of the existing Cottonwood Canyon Road and a portion of the existing Sandman Road to accommodate heavy truck traffic to and from the proposed Silver Bar Mine Regional Landfill (SBMRLF) located on private land. Cottonwood Canyon Road and Sandman Road are located on lands administered by the Bureau of Land Management (BLM) with a portion of Cottonwood Canyon Road also located on land owned by the Arizona State Land Department (ASLD). The project area is located approximately five miles southeast of Florence Junction in Township 3 South, Ranges 10-11 East, Gila and Salt River Baseline and Meridian, Sections 1-3 and 6-12 in Pinal County (Figure 1. State Location and Vicinity Map).

The Proposed Action includes improving a total of approximately six miles of Cottonwood Canyon Road from State Route (SR) 79 east to Sandman Road, including approximately 0.4 miles on BLM-administered land and approximately five miles on Arizona State Trust land, and approximately 0.6 mile of Sandman Road on BLM-administered land from its intersection with Cottonwood Canyon Road to the south (Figure 2. Project Area Map). These sections of roadway are herein collectively referred to as the “access road.” The portion of Cottonwood Canyon Road on BLM-administered land and Sandman Road are herein referred to as the “project area” for the purpose of this environmental assessment (EA).

The Owners/Developers have submitted a BLM right-of-way (ROW) and Temporary Use Permit (TUP) applications to obtain legal access to the private property and authorization of the roadway improvements. The Owners/Developers have also applied and received a ROW grant and two temporary construction easements (TCEs) on Arizona State Trust land from ASLD effective 28 June 2013. The TCEs on State Trust land are designated for construction equipment storage. Additionally, the Owners/Developers have applied for an ingress/egress permit from the Arizona Department of Transportation (ADOT) for proposed improvements at the intersection of Cottonwood Canyon Road and SR 79. The Pinal County Planning and Development Services Department issued an Industrial Use Permit for development of the proposed SBMRLF on the approximately 449 acres of private property immediately east of Sandman Road on 21 December 2007.

1.2 Purpose and Need for the Proposed Action

The purpose of the Proposed Action is to provide the Owners/Developers of the proposed SBMRLF with legal access across public land administered by BLM for roadway improvements, including two TUPs. The proposed ROW easement for the access road includes sections of Cottonwood Canyon Road and Sandman Road. These roadways currently provide access to BLM-administered public lands, State Trust lands, and private lands for multiple use activities, including mining, ranching, and recreation. Existing parking areas along Cottonwood Canyon Road on State Trust land receive heavy public use for camping and staging activities by small

and large off-highway vehicle (OHV) user groups. Cottonwood Canyon and Sandman roads also provide access to private land and State Trust land beyond the proposed improvements. The need for the action is established by BLM's responsibility under Federal Land Policy and Management Act (FLPMA) of 1976 to respond to requests for ROW grants on BLM-administered land. A ROW authorization is required pursuant to public land regulations (43 Code of Federal Regulations [CFR] 2800) to obtain legal access through public land and to authorize the proposed road improvements. There is no ROW of record for the affected roads.

The applicants are requesting the authorization of a ROW grant to obtain access to the adjoining private property via Cottonwood Canyon Road and Sandman Road and to improve portions of these existing roads to accommodate heavy truck traffic in order to construct and operate the proposed SBMRLF. In addition to the ROW grant, the Owners/Developers are also requesting two TUPs on BLM-administered land for construction of two culverts as part of the proposed roadway improvements. The SBMRLF would provide a Municipal Solid Waste (MSW) disposal option for the population of northern Pinal County. The SBMRLF would be a private landfill, fully permitted by the Arizona Department of Environmental Quality (ADEQ), and would be designed, constructed, and operated to provide MSW disposal for Pinal County today and in the future.

Decision to be made: The BLM would decide whether or not to grant the ROW and TUPS, and if so, under what terms and conditions.

1.3 Conformance with Land Use Plan

The Proposed Action is in conformance with the Phoenix Resource Management Plan (RMP), approved in 1989, and the Middle Gila Canyons Transportation and Travel Management Plan (TMP), approved in 2010. The RMP established designations pursuant to 43 CFR 8340, which limits all motorized vehicle use on BLM-administered lands to existing roads and trails. The RMP provides for issuance of ROWs on a case by case basis, in accordance with policies and procedures at 43 CFR 2800. The TMP identifies the system of existing roads and trails available for motor vehicle access for public use and administrative purposes related to multiple uses, including the public land access routes from the local highway system. It also identifies existing and planned access in motorized and non-motorized areas and it identifies needed improvements and maintenance to those routes and areas. The proposed road improvements are located on sections of existing roads (e.g., Cottonwood Canyon Road and Sandman Road) that conform to the RMP OHV designations and the Middle Gila Canyon TMP.

This Proposed Action has been reviewed and determined to be in conformance with the Land Use Plan terms and conditions required by 43 CFR 1610.5, BLM MS 1617.3.

1.4 Relationship to Statutes, Regulations, or Other Plans or Policies

This EA has been prepared in compliance with federal guidelines including National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA outlined in 40 CFR parts 1500–1508, U.S. Department of the Interior requirements and guidelines listed in the BLM Manual Handbook H-1790-I (BLM 2008). This

EA was tiered off the 2010 Middle Gila Canyons Transportation and TMP EA, which established the transportation designations and TMP for public land administered by the BLM (BLM 2010). The Proposed Action is consistent with the requirements of 43 CFR 2800 and Title V of FLPMA, as amended.

The BLM (Tucson Field Office) is the lead federal agency for this EA. According to FLPMA, the BLM must manage public lands following the principle of multiple use, managing the various resources to best meet the needs of the public and society.

This EA documents the affected environment and potential environmental consequences of the Proposed Action. Furthermore, the BLM has determined that the Proposed Action would trigger a connected action (i.e., the development of the SBMRLF and ADOT permit), and therefore, the development of the SBMRLF is also analyzed within this EA as a connected action. Actions are said to be connected when they are closely related enough to be discussed in the same NEPA analysis. Actions are connected if they cannot or would not proceed unless other actions are taken either before them or simultaneously (§ 1508.25[a][1]).

The Proposed Action is consistent with the *Pinal County Comprehensive Plan, 2009* (Plan), which encompasses the project area. The access road traverses Arizona State Trust land and is designated as restricted use open space. The land use of the project area is designated as Restricted Use Open Space and General Public Facilities/Services. The Pinal County Open Space and Trail Plan, approved 2009, identifies an OHV trail (the Great Western Trail) crossing the project area. Furthermore, the Pinal County Planning and Development Services Department issued an Industrial Use Permit for development of the proposed SBMRLF on the approximately 449 acres of private property immediately east of Sandman Road on 21 December 2007.

The State of Arizona is obligated by both the Arizona Enabling Act and the Arizona Constitution to act as a trustee in managing trust lands. The ASLD is the state agency responsible by law for the management of these lands. The State Trust land beneficiaries along the access road are the Common Schools and Penitentiary.

Table 1.0 documents all federal, state, and local agency environmental approvals, reviews, and permitting required for implementation of the Proposed Action.

Table 1. Permits Required for Proposed Facilities	
Regulatory Agency	Permit
U.S. Bureau of Land Management	ROW Grant, Temporary Use Permit
U.S. Army Corps of Engineers	Clean Water Act Section 404 Permit
Arizona Department of Transportation	Ingress/egress Permit
Arizona Department of Environmental Quality	Municipal Solid Waste Landfill Master Facility Plan Approval (MFPA)
Arizona Department of Environmental Quality	A Stormwater Pollution Prevention Plan (SWPPP)
Arizona Department of Environmental Quality	Section 401 State Water Quality Certification
Arizona State Land Department	ROW Grant

Table 1. Permits Required for Proposed Facilities	
Regulatory Agency	Permit
Pinal County Air Quality	Air Quality Operating Source Unified Permit for road construction and landfill operations
Pinal County Public Works Department	County road permit
Pinal County Planning and Development	Special Use Permit

Federal agencies are required to evaluate and consider the effects and impacts to cultural resources under Section 106 of the National Historic Preservation Act (NHPA). A formal Section 106 consultation was initiated by BLM following the completion of the cultural resource surveys, which identified six sites that were recommended eligible for listing on the National Register of Historic Places (NRHP). An adverse effect was identified for all six sites as a result of the proposed improvements and a treatment plan was subsequently prepared for the data recovery and monitoring efforts.

1.5 Scoping and Issues

A primary principle in the NEPA process is a full public disclosure and open public participation in the decision-making process. To support preparation of this EA, the Owners/Developers solicited input from the public to help identify issues and concerns that should be addressed in the document. Information and comments were solicited from the public at public open houses in 2007 (see Appendix G- meeting minutes from Middle Gila Conservation Partnership and Citizens Participation Report).

A public meeting is planned for Fall 2014 in the Town of Florence to discuss the Proposed Action and the impacts of the road improvements on the resources in the area and the findings of the Environmental Assessment. Comments will be analyzed and assimilated in the revised Environmental Assessment.

In 2007, the communities of Queen Creek, Apache Junction, Florence, and Superior were consulted as well as Pinal County, the Middle Gila Conservation Partnership, Arizona Off Highway Vehicle Coalition, Arizona State Association of 4 Wheel Drive Clubs, Arizona State Land Department, and Dos Verdes Volandos as part of the approval of a MSW landfill application by Pinal County.

An internal scoping meeting was held by the Tucson Office BLM staff on 14 May 2011 and discussion of the project and identification of possible issues were generated. The table below shows the issues that were identified and the rationale for the determination.

Table 2. Preliminary Scoping Impacts	
Resource Impacts	Rationale for Determination
Air Quality	The Proposed Action would result in increased truck traffic and may increase fugitive dust on the road.
Cultural Resources	The Proposed Action may impact cultural sites identified within the project area.
Floodplain	A portion of the access road is located in a floodplain and the access road traverses several washes. The proposed road improvements need to be designed to accommodate flood events.
Native American Resources	The project area contains areas that Native Americans may consider to be religious.
Biological Resources	There is one endangered species that could occur in the project vicinity and three candidate species that could occur within the project area.
Waste: Hazardous and Solid	The operation of the landfill may lead to hazardous materials incidents.
Water Quality	The road construction may have an impact on water quality. The landfill may affect the Middle Gila Watershed.
Invasive and Non-Native Weed	Materials used to cover the landfill may increase incident of invasive and non-native weeds.
Rangeland Health Standards	The road improvements may negatively impact vegetative rangeland adjacent to the existing roads.
Migratory Birds	The road widening and landfill operations may remove nesting material and locations, and the landfills may attract birds.
Recreation	Changes to the existing roads may impact recreational access in the project vicinity.
Wildlife	Local bighorn sheep and Sonoran Desert Tortoise occur in the area and need to be evaluated for impacts.
Land Use	The Proposed Action is to determine if a ROW grant should be issued to allow legal access across BLM-administered land to the Owners/Developers of the proposed landfill.
Access and Transportation	Additional truck traffic would be generated by the landfill operation and may impact SR 79 and the access road.
Visual (Key Observation Point Locations)	The proposed improvements to the access road may make it more visible.
Mineral	Changes to the existing roads may impact minerals in the project vicinity.
Vegetation	Removal of vegetation may have impacts on wildlife and grazing
Grazing (LEN allotment)	The Proposed Action may effect access to grazing areas and provide unsafe conditions for cattle.

2 THE PROPOSED ACTION AND ALTERNATIVES

This chapter presents the Proposed Action Alternative and the No Action Alternative. No additional alternatives for this project were evaluated in this EA since the other alternatives identified by BLM, including relocating Cottonwood Canyon Road and constructing an entirely new access road, would result in impacts far greater than improving the existing roads and thus these alternatives were deemed nonviable and eliminated from further evaluation at the onset of analysis.

2.1 Proposed Action

The Proposed Action is issuance of a ROW grant from the BLM, which would allow legal access through public land to the adjoining private property along with approval of the proposed road improvements to the existing Cottonwood Canyon Road and Sandman Road, and issuance of two TUPs for construction of two new culverts. The proposed ROW alignment of the proposed access road, totaling approximately six miles, begins on Cottonwood Canyon Road at SR 79 and traverses eastwardly for an approximate five miles on State Trust land; continues along Cottonwood Canyon Road in an easterly direction across approximately 0.6 miles of BLM-administered land to the Sandman Road intersection; continues approximately 0.4 miles to the south-southeast along Sandman Road; and terminates on the adjoining private property immediately to the east of Sandman Road. The Owners/Developers have applied and received a ROW grant across Arizona State Trust land and two additional TUPs from ASLD. The Plan of Development (POD) for the proposed road improvements is included in this EA as Appendix A and the key design elements are summarized in this section of the EA (NL Mineral Mountain, LLC, et al. 2011).

Currently, the widths of Cottonwood Canyon Road and Sandman Road vary from 26 feet (ft) to 50 ft wide with average widths of approximately 30 ft. Under the Proposed Action, roughly one mile of existing dirt road on BLM-administered land would be improved. The improved road would accommodate two-way heavy truck traffic. The Owners/Developers would additionally improve approximately five miles of Cottonwood Canyon Road on State Trust land and improve the intersection of Cottonwood Canyon Road and SR 79. On State Trust land, the access road would be widened to 60 ft, including a 44 ft wide aggregate base course (ABC) road with 8 ft wide shoulders on each side where drainage ditches would be located. On BLM-administered land, the access road would be widened to 44 ft, as needed, to include a 28 ft wide ABC road and 8 ft wide shoulders (Figure 3. Typical Road Section for State Trust and BLM-Administered Lands). The road improvements would result in additional 13.3 acres of permanent disturbance on State Trust land and 1.9 acres on BLM-administered land.

The proposed project would require two TUPs on BLM-administered land and two TCEs on State Trust land. The TUPs on BLM-administered land that are required for the construction of two culverts are approximately 275 ft by 425 ft and approximately 217 ft by 265 ft, respectively. The two TCEs on State Trust land are located 1.19 and 3.03 miles east of SR 79 on the south side of Cottonwood Canyon Road and each consist of approximately 2 acres of previously disturbed lands.

Construction activities would be conducted within the 44 foot ROW width with the exception of two TCEs on State Trust land for construction equipment storage and two TUPs on BLM-administered land for construction of two culverts. Both the TCE and TUP areas would revert back to the ASLD and BLM accordingly after construction is completed.

In order to implement the proposed road improvements, it is anticipated that two graders, four scrapers, eight dump trucks, one front end loader, one skip loader, four rollers, two bull dozers, four water trucks, three pickup trucks, four laborers, up to 32 personnel, one crane, and concrete delivery trucks as needed, would be needed during construction..

When complete, Cottonwood Canyon Road and Sandman Road would continue to accommodate public use and provide legal ingress and egress to the landfill for at least 50 years during the operational life of the SBMRLF and for at least another 30 years of post-closure care and monitoring. The access road would be used year-round. There would be no other ingress or egress to the landfill.

2.1.1 Project Design Elements

The proposed road improvements consists of widening the existing roads to accommodate two-way heavy truck traffic, construction of drainage ditches and structures (i.e., reinforced concrete box culverts [RCBCs] and corrugated metal pipe [CMP] culverts), run-out ditches, low water crossings, cattle guards, and ROW fencing. The Owners/Developers, the County, contractors, and subcontractors would adhere to established federal and state road design and construction standards. To ensure public safety and the protection of surface resources, construction would be accomplished to the national and regional standards (e.g., American Association of State Highway and Transportation Officials [AASHTO], ADOT, and Pinal County). Road design elements would include the following:

- The access road would be constructed per the Pinal County approved plans. See Appendix E of the POD (NL Mineral Mountain, LLC, et al. 2011) for these design drawings. The access road alignment would not be excavated and no topsoil would be removed. The road would be constructed of 10 inches of ABC over engineered fill.
- Widening of the existing roadways would be needed north and east of Cottonwood Canyon Road and Sandman Road, respectively, to accommodate a turning lane for northbound traffic on Sandman Road continuing east on Cottonwood Canyon Road.
- A three-way intersection with stop signs would be constructed at the intersection of the Cottonwood Canyon Road and Sandman Road to meet BLM requirements.
- Additional improvements, including turn lanes and drainage improvements, would be made to the intersection at SR 79 and Cottonwood Canyon Road in accordance with ADOT ingress/egress permit. The project would meet Pinal County standards (*The Pinal County Uniform Standards Details and Specifications for Non-Subdivision Highways and Roads*).
- The roadside graded ditch channels would have trapezoidal sections with a bottom width of 4 ft and a side slope of four horizontal to one vertical.
- The roadway subgrade and surface would be crowned with a 1 percent slope towards the sides.

- The drainage crossings would have slopes and widths to accommodate surface and road flows as well as the water that crosses the access road at the wash crossings and would meet Pinal County standards (*The Pinal County Uniform Standards Details and Specifications for Non-Subdivision Highways and Roads*). At the crossings, there would be concrete walls down to scour depth at both the upstream and downstream edges to control erosion and scour from flowing water; rip-rap or rock would armor the outlet ends of the culvert to prevent soil erosion (Figure 4. Cross Section of Wash Crossings).
- Six low water crossings or “dips” would be installed on State Trust land.
- RCBCs would be installed in two wash crossings on BLM-administered land (Figures 5 and 6 Wash Crossing Structures). The two RCBCs are designed to accommodate a 100-year 24-hour storm event. The larger structure, located on BLM land at the larger wash, would have five RCBC cells that would each be 6 ft by 10 ft. The smaller structure located east of Sandman Road would have three RCP cells each of which would be 48 inches.. The two wash crossing structures would be installed in accordance with BLM standards and the Clean Water Act (CWA) Nationwide Permit 14. The ROW at the culvert installations would be 140 ft to include the extension of concrete apron and rip-rap or rock at the outlet ends of the RCBCs to prevent soil erosion.
- Some grading and clearing of the vegetation in the 44 ft ROW and TUP areas is necessary for the road to be built per Pinal County design standards. Prior to any construction activities the Owners/Developers and their construction contractors are to meet with BLM representative to assess and inventory targeted vegetation. Reclamation of the vegetation would occur either by salvaging or destroying targeted vegetation or replanting the removed vegetation or replacing with new like kind vegetation. If vegetation is removed and not replaced, payment would be made to the BLM for the cost of lost vegetation. Payment would be based on the Arizona Department of Agriculture Native Plant price list. The access road would follow the existing road alignments. To accommodate the required 44 ft ROW width and the intersection improvements at Cottonwood Canyon Road and Sandman Road, including a right-hand turning lane for traffic continuing eastbound on Cottonwood Canyon Road from Sandman Road, the proposed widening, clearing and removal of top soil would occur on the north side of the existing Cottonwood Canyon Road and the east side of the existing Sandman Road. No ground construction disturbances are to occur south of the Cottonwood Canyon Road or west of Sandman Road. Prior to construction, the Owners/Developers and their construction contractors would flag, fence or stake the areas to be expanded to provide limits to new disturbances in the construction process or to identify any vegetation avoidance areas.
- The Owners/Developers will provide the BLM for approval, a Reclamation plan, within 45 days from the completion of the road, TUPs, and all ancillary features. The Owners/Developers will be responsible for clearing and removing the right-of-way and TUP areas of all trash and debris, and rehabilitation of construction areas as needed.
- Maximum grades would not exceed 10 percent.
- Rumble strips would be installed at the entrance to BLM-administered land preceding the cattle guard and fence and at the end of the road improvements on Cottonwood Canyon Road.

- Cottonwood Canyon Road is designed to limit vehicle speeds to 25 miles per hour. Road design is intended to manage the speed for both commercial and recreational traffic. Speed limit signs would be installed for the length of Cottonwood Canyon Road.
- All materials used to construct the access road would be specified in accordance with Pinal County design standards, ADOT standards and/or AASHTO. Materials would be obtained from sources in the state of Arizona.
- To compensate for the loss of the recreation parking areas, the Owners/Developers would create and develop a parking area on their private lands to provide a recreational staging area that would consist of nearly two acres and accommodate up to 35-40 vehicles. The parking area would be designed to accommodate 35-40 trucks towing trailers hauling OHVs.
- The private recreational parking area would always remain open and be available to the public 24 hours a day and 7 days a week. The Owners/Developers and Pinal County would be responsible for maintaining the private access road leading to the private parking area and the parking area.
- The new parking lot would be made available and open for public use upon the closure of the two existing formal parking lots located on BLM lands and State Trust lands (ie the existing 0.8 acre parking lot at the SR79 and CCR entrance, and the 0.9 acre existing BLM portal site).

2.1.2 Other Project Elements

- Electrical needs for the landfill operations would be fulfilled by generators. No electrical power lines would be brought into the landfill site.
- Wildlife friendly ROW fencing would be installed on both sides of the access road on BLM-administered land (Figure 7). Internal fencing would be installed south of Cottonwood Canyon Road. The internal fence would be approximately 600 feet in length and would be located approximately 10 feet in from the south side of Cottonwood Canyon Road. No fencing would be installed on State Trust land.
- Additional traffic signage (merge, reduced speed, road curves) are included along the access road.
- Flagging and staking of the project area would be done in accordance with the construction plans as approved by the County and the BLM. All staking would be performed by registered land surveyors and in sufficient detail to define the construction footprint of the access road. The surveyors would stake the centerline, edge of roadway surfacing, edge of ROW, TUP areas, fill areas, and wash crossings. All flagging and staking would be done with common 4 ft survey laths. Survey markings that identify the various components of the access road would be clearly marked on the survey lath. High-visibility vinyl flagging would be tied to the survey lath to allow easy identification of the lath. All survey laths would be removed at the end of construction.
- Construction on Cottonwood Canyon Road would be suspended during weather conditions (monsoons, heavy rains), when flooding in the washes and drainages is possible.
- During construction of the access road, the third party contractor would prepare a site health and safety plan that details emergency procedures, local emergency responder contacts, and possible emergency situations. These include injury, fire, accidents, spills,

etc. that may reasonably be expected to occur during the course of construction. The contractor would also hold safety meetings with their employees and the Owner/Developer as well as representatives of the BLM, the County, and other regulatory or interested parties. A safe and clean work site would be maintained during construction. The third party contractor would also be responsible for implementing and maintaining the necessary Spill Prevention Control and Containment (SPCC) plan for fuels associated with construction of the access road. All staging, fueling and maintenance would be conducted on the SBMRLF property. Furthermore, the two TCEs on State Trust land are designated for storage of construction equipment during the road improvements.

- During construction the Owner/Developers' contractor would be responsible for inspection and maintenance of all SWPPP Best Management Practices (BMPs).
- During construction of the access road, solid waste would be removed by a third party and disposed of at a permitted solid waste facility. After construction of the access road and SBMRLF, waste and litter would be collected and disposed in the SBMRLF.
- Traffic flow and access to public land would be maintained on Cottonwood Canyon and Sandman roads during construction and traffic control would be provided to allow safe passage of vehicles during standard construction activities. Those phases of the construction that would restrict traffic for more than four hours would be scheduled for mid-week when traffic is lightest to reduce disruptions. Notification of construction delays would be posted on SR 79 and Cottonwood Canyon Road. At this time, no roadway closures are planned.
- Cattle guards at SR 79 and on the boundary between State Trust land and BLM-administered land would be removed prior to road construction and replaced after completion. Two additional cattle guards would be installed before installation of the RCBCs on BLM-administered land. All cattle guards would meet ADOT Construction Group 2000 Standard Specifications Section 906 Cattle guards. Replacement and installation of the cattle guards would be coordinated with the local ranch operator.
- Water or a dust suppressant material would be used to control fugitive dust created by construction activities.
- Desert Tortoise Mitigation Measures would be implemented as a component of the road construction.
- Prior to construction, the Owners/Developers would provide and pay for a BLM approved on-site archaeology monitor(s) for the necessary cultural data recovery.
- Prior to construction, the Owners/Developers would provide and pay for a BLM approved on-site archaeology, biological, and construction monitor(s).

2.1.3 Maintenance and Operations

Once completed, the ROW grant for the access road would be assigned to Pinal County and maintained by SBMRLF as part of the development agreement with the Owners/Developers (see Appendix F- Development Agreement between Pinal County and SBMRLF).

- On at least a semi-annual basis, the Owners/Developers of the SBMRLF would inspect the access road, cattle guards, guard rails, culvert crossings, signage, fencing and the

recreational parking area for signs of disrepair, damage or vandalism. Repairs would occur on a semi-annual or on an as-needed basis.

- As necessary, the Owners/Developers of the SBMRLF would repair the road surface to fill pot holes. The County would be responsible for repair and replacement of signs and graffiti.
- The Owners/Developers of the SBMRLF would coordinate and communicate in writing any proposed repairs to the BLM field office. If the repairs constitute an emergency, the Owners/Developers of the SBMRLF may communicate the need via telephone, email or other voice messaging system.
- Routine grading and ditch cleaning would be performed by Pinal County, as needed. Snow removal or grading required from snow fall is not anticipated and therefore not required for the access road.
- Litter control, during the life of the landfill, would be provided by the Owners/Developers of the SBMRLF. Litter control would be monitored and enforced by Pinal County as the owner of the ROW. All varieties of vehicles would be transporting waste to the SBMRLF. The Owners/Developers of the SBMRLF would be responsible for cleanups of spills or litter related to landfill related traffic. If hazardous or solid waste spills occur, the cleanup would be the responsibility of the Owners/Developers. The Owners/Developers would maintain a SPCC. This plan would include mandatory notification to the National Response Center in the event a spill occurs into flowing water or into dry washes where flowing water can be expected to occur before cleanup can be accomplished.
- All maintenance work and activities would be contained within the BLM ROW.
- Dust abatement for the access road would be provided by the Owners/Developers of the SBMRLF and monitored by Pinal County Air Quality Control District. This would involve daily watering of the access road or the application of dust suppressant materials during all phases of the construction and operation and including the access road and TUPs. Dust suppressants have not yet been selected. If dust suppressants are used they would be selected prior to construction and approved by the BLM. Upon closure of the landfill, there would be no further watering of the access road by the Owners/Developers.

2.2 No Action Alternative

Under the No Action alternative, the ROW would not be granted across BLM-administered land. The proposed road improvements would not be approved and therefore would not be constructed. There would be no development of the MSW facility. The existing access through the project area by the public and other users would continue, including the mineral materials mining operation on the adjoining private property. There would be no improvements to the existing roads.

2.3 Alternative Considered but Eliminated from Detailed Study

Relocation of Cottonwood Canyon Road

This alternative was initially explored as a means to minimize the impact to cultural resources. This alternative was eliminated as it would result in greater impacts to the surrounding resources than improving the existing roads.

Construction of New Access Road

This alternative was initially explored as an alternative means to access the private property without using the existing roads in the area. This alternative was eliminated as it would result in greater impacts to the surrounding resources than improving the existing roads.

Construction of Fence along State Trust Land

Road right of way fence construction was initially considered for the 6 mile section of the road across State Trust land to control access along the road, and to block off road vehicle use on adjacent lands to prevent ongoing resource damage. The State Land Department has removed this design feature from the project.

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter presents the potentially affected environment (i.e., the physical, biological, social, and economic values and resources) of the project area, and provides the baseline for comparison of impacts/consequences described in the cumulative impacts section.

Impacts are assessed qualitatively but, when possible, quantitative impacts are evaluated. Evaluation focuses on direct, indirect, and cumulative impacts of both the No Action and Proposed Action alternatives.

Cumulative impacts, as defined by the Council on Environmental Quality (40 CFR 1508.7) are the impacts on the environment, which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts are interdisciplinary, multi-jurisdictional, and usually do not conform to political boundaries. Guidance for implementing NEPA (Public Law 91-190, 1970) requires that federal agencies identify the temporal and geographic boundaries. For the purposes of this EA, the temporal boundary of the analysis is from 2000 to 2100. This boundary encompasses a range within which data are reasonably available and forecasts can be reasonably made. The geographic boundaries of analysis vary depending on the resource and potential effects.

Past, Present, and Reasonably Foreseeable Future Actions

In addition to direct and indirect effects, NEPA requires analysis and disclosure of potential cumulative effects, the combined effect of past, present (ongoing), and reasonable foreseeable actions.

Past, present, and future development considered in the cumulative impacts analysis of the Proposed Action focused generally on the existing and planned uses within the vicinity of the proposed road improvements, the Middle Gila Canyons travel management area portion of the White Canyon Resource Conservation Area (RCA) and the Superstition Vistas Planning Area. In accordance with NEPA, the geographic boundaries of analysis may vary depending on the resource and potential effects (Figure 8).

Past Uses

Historically, the areas along Cottonwood Canyon Road have provided access to BLM-administered lands and State Trust Lands for multiple use activities including ranching, mining wildlife habitat, and recreation. The Arizona Army National Guard (AZARNG) Florence Military Reservation has historically used the property north and south of the road for artillery training. The private parcel (to be used for the municipal solid waste landfill (MSWLF) has historically been used for limited surface and underground mining. Areas throughout the RCA have been used for recreational activities, as well as mineral extraction.

Existing Uses

Currently, the areas along Cottonwood Canyon Road provide off road parking on both State and BLM lands for recreational uses mostly related to staging and overnight camping associated with OHV riding in the area. The AZARNG still holds a special use permit for the lands south of the road however only limited uses are expected and no artillery training would be performed. The road also provides access to private lands and State Trust Lands beyond the proposed improvement area. Current usage of the private parcel is for extraction of decorative rock and stone. Areas throughout the RCA are used for dispersed outdoor recreational activities including OHV riding, hunting, wildlife viewing, camping and hiking, as well as ranching, wildlife habitat, mineral exploration and mining.

Foreseeable Future Actions

The project area lies within the Middle Gila Canyons travel management area in the northwestern portion of the BLM White Canyon Resource Conservation Area (RCA). The RCA is a 414 square mile area (265,110 acres) comprised of BLM-administered, State Trust, and private land identified in the current land use plan for retention of the federal lands for long term management. For the analysis of future actions, the White Canyon RCA was used generally as a geographic boundary however the analysis area was adjusted for certain resource areas as appropriate (See Table 3).

Future development associated with the private parcel includes the conversion of the mine parcel into a MSWLF that meets local, state, and federal requirements. The in-service date for the landfill is March 1, 2015. This is the date mining will commence on the property (the first step in developing the landfill). The impacts associated with this development are discussed in each resource section.

The Pinal County Land Use Plan and the Pinal County Open Space and Trail Master Plan shows that land east of SR 79 designated as proposed or existing open space. The land west of SR 79 is zoned as moderate to low density (1-3.5 dwelling units per acre) residential development. The Superstition Vistas Planning Area extends south of the project area however the Conceptual Land Use Plan for Superstition Vistas shows residential and commercial growth to primarily occur north of the Magma Arizona Railroad, which is approximately five miles to the north west of Cottonwood Canyon Road (Figure 9. Superstition Vistas Conceptual Planning Area). There are no proposed subdivision developments or acquisitions of State Trust Land that would be considered as reasonable or foreseeable future actions.

It is reasonably foreseeable that public recreational use in the project area will continue. Past recreational use along the road between SR 79 and the public lands has been largely unmanaged, and has led to the establishment of the existing off road informal parking, camping and staging areas, OHV trails and play areas. The unmanaged recreational use is causing resource damage related to soils, air quality, vegetation and cultural resources, and is also causing conflicts with current grazing operations. Public recreational use will continue to be attracted to the area, and will continue to cause resource damage unless management action is taken by the State Land Department and the BLM to protect resources.

It is also reasonably foreseeable that the Arizona State Land Department will implement actions to prevent public use of State Trust lands along Cottonwood Canyon Road for off road parking, staging and camping activities in efforts to prevent ongoing resource damage occurring from public recreational use. The land adjacent to the road is largely flat and easily accessible from the road due to the low barrier effect the topography and vegetation pose on use of vehicles. The vegetation cover is sparse, and includes open areas which attract recreational use for off road parking and loading/unloading off highway vehicles (OHVs), and for overnight camping with motor homes and trailer camping. The Arizona State Land Department has begun to post regulatory signs (as of July 2015) that prohibit off road vehicle use along the road between SR 79 and the public lands. The Arizona State Land Department will continue to post regulatory signing along State Trust land. It is possible that the State Land Department could take additional measures, such as fencing along the road and barricading access points to existing parking areas, to enforce Arizona State Land Department regulations. This would cause a loss of opportunities for staging areas, camping and parking related to public recreational use along Cottonwood Canyon Road.

Within the White Canyon RCA there are two proposed actions that would be included in the cumulative impacts analysis:

- The Ray Land Exchange: This land exchange provides for the transfer of public lands within and adjacent to the Asarco Ray Mine Complex and Copper Butte properties to Asarco, and transfer of private lands to the United States along the Gila River and near the White Canyon Wilderness. The exchange includes approximately 8,196 acres of lands where both the surface and mineral estate are administered by the BLM, and approximately 2,143 acres of mineral estate only lands (where the surface estate is owned by Asarco and the mineral estate is administered by the BLM). In exchange for the selected public lands, the BLM would acquire 7,304 acres of Asarco private land throughout the state that the BLM has identified as desirable for public ownership.
- The Ripsey Wash Project: Would involve the acquisition by Asarco of ca. 7,400 acres of State Trust land for a permanent tailings storage facility for the Asarco-Ray Mine Complex.

Table 3. Cumulative Analysis Areas

Resource	Geographic Boundary
Air Quality	Pinal County
Cultural Resources	White Canyon RCA
Floodplain	Middle Gila Watershed
Native American Religious Concerns	White Canyon RCA
Threatened and Endangered Species	White Canyon RCA
Wastes and Hazardous Materials	White Canyon RCA
Water Quality	Middle Gila Watershed
Invasive and Non Native Weeds	White Canyon RCA
Rangeland Health Standards	White Canyon RCA
Migratory Bird Treaty Act	White Canyon RCA, Middle Gila Canyon Travel Management planning area
Recreation	Middle Gila Canyons Travel Management Area, White Canyon RCA
Wildlife	White Canyon RCA
Land Use	Pinal County Land Use planning area, Conceptual Land Use Planning area for Superstition Vistas, BLM-administered land in the White Canyon RCA
Access and Transportation	Cottonwood Canyon Road Corridor, Middle Gila Canyon Travel Management planning area
Visual	The Cottonwood Canyon Road viewshed
Mineral Resources	White Canyon RCA
Vegetation	White Canyon RCA
Grazing Program	LEN and Nichols Ranch Grazing Allotments
Socioeconomics	Eastern Maricopa County and northern Pinal County

3.1 Air Quality

3.1.1 Affected Environment

The project area is within northern Pinal County and is in an attainment area designated by the Environmental Protection Agency (EPA) for particulate matter 10 micrometers (μ) (PM_{10}) and particulate matter 2.5 μ ($PM_{2.5}$). As required by the Clean Air Act Amendments, the EPA set National Ambient Air Quality Standards (NAAQS) for six criteria pollutants and identified nonattainment areas (i.e., areas that exceed the NAAQS) for given pollutants. In 2012 the EPA redesignated portions of western Pinal County from an attainment to a nonattainment area for PM_{10} . PM_{10} is defined as a particulate matter with an aerodynamic diameter of less than or equal to 10 μ . An EPA proposed non-attainment boundary map is in Appendix B. The project area

(T3S, R11E) is not listed as a contributing township/range in the Pinal County Nonattainment Area.

Primary sources of pollution contributing to nonattainment are windblown dust from agricultural tilling, open burning, construction sites, unpaved roads, parking lots, and disturbed vacant lots. Travel on unpaved roads throughout the project area can result in particulate emissions in the form of fugitive dust. Mining operations can contribute to fugitive dust sources and are managed through the application of water to disturbed soils

Pinal County is the delegated authority to administer the provisions of 40 CFR Part 60 Subpart WWW which includes granting air quality permits. The Operators of the landfill would obtain a Class 1 Title V Air Quality Operating Source Permit as well as Dust Control Permit from Pinal County prior to the commencement of construction activities.

Reasonable Available Control Technology (RACT) is employed by the Pinal County Air Quality Control District (PCAQCD) to reduce the short-term emissions of particulate matter during construction. Appropriate RACT include covering haul trucks, developing a dust control plan, and stabilizing the soil. Dust generated by construction activities would be controlled in accordance with the *Arizona Department of Transportation Standard Specifications for Road and Bridge Construction*, Section 104.08 Prevention of Air and Noise Pollution (2000 Edition) to observe and comply with all air pollution ordinances, regulations, orders, etc., from those agencies having expertise and/or jurisdiction (ADOT 2000b).

The project area has been identified in the National Resources Conservation Service (NRCS) Soil Survey of Eastern Pinal and Southern Gila Counties, Arizona. There are six soil types within the project area (Figure 10. Soil Map). The soil survey for the area does not list a Wind Erodibility Index for any of the six soil types in the project area. In addition, the soil survey does not list silt content for any of the six soil types in the project area. Silt content is often used as a primary predictor regarding particulate matter from dirt roads. The only applicable data available from the soil survey is the data from the Typical Profile information for the top soil layer (from 0-1 inches to 0-12 inches below surface depending on the soil type). The clay content for the top soil layer for the six soil types ranges from 7% to 29% (11% average) and the gravel content for the same top layer ranges from 5% to 40% (14% average). This data is representative of the soil conditions in the project area but it does not necessarily represent the road bed. The soil particle sizes that would most impact the particular emissions from the project area would be dependent on the road design and construction and not that of the surrounding soils because project vehicles would not be driven off road.

3.1.2 Impacts of the Proposed Action

As a condition of the MFPA the Owners/Developers would be required to obtain an Air Quality Operating Source Permit. This permit covers all components of operating the landfill and its impact on air quality (dust control and methane production).

Air quality monitors have not been set up in this region of the County. In order to determine the requirements for dust mitigation in the Air Quality Operating Source Permit, the PCAQCD would conduct an analysis on the air quality generating pollutants (PM₁₀) that would be produced

by the SBMRLF. The PCAQCD analysis would set the operating conditions for dust control on Cottonwood Canyon Road.

During the construction phase of the road, dust would be managed through RACT and BMPs. The construction activities would be temporary and dust control measures would be applied, therefore the overall impacts to air quality during construction would be minor. Temporary emissions would increase as a result of the construction activities of the Proposed Action; however, these emissions are not likely to result in violations of ambient air quality standards and/or hazardous pollutant thresholds.

The increase in truck traffic due to the development of the landfill would have a moderate impact on local air quality. During operation of the landfill, mitigation measures would be used to manage fugitive dust from operations and the increase in traffic on Cottonwood Canyon Road. Compliance with the dust control requirements from PCAQCD would be managed through watering plans, soil amendments, track out control plans, a dust control coordinator, record keeping, and similar permit conditions.

Under the Proposed Action, the installation of an ABC road would reduce localized fugitive dust. Fugitive dust would continue to be generated due to the increase in truck traffic associated with the landfill. This would add to particulate matter emissions from other sources such as the vehicle traffic on adjacent unstabilized roads and surfaces, the net effect may have a minor impact on air quality in Pinal County.

The PCAQCD would also monitor air quality in regard to methane gas production at the landfill. In order to comply with the MFPA, the Owners/Developers would design, construct, operate, monitor, report and retain records for a Landfill Gas Collection and Control System (GCCS). The GCCS must be approved by the PCAQCD and a copy of the approval with the GCCS details of design must be submitted to ADEQ to be included in the SBMRLF operating record. The GCCS collects and control methane gas in order to minimize and eliminate the impacts of methane gas on air quality. The use of a GCCS would result in the landfill having a minor impact on air quality in the region.

3.1.3 Impacts of the No Action Alternative

Under the No Action Alternative, ROW is not acquired and the road is not built for the landfill; Cottonwood Canyon Road would remain an unpaved dirt road. Commercial access to the mining site would continue and fugitive dust would continue to be generated from all physical access routes. Vehicle traffic on Cottonwood Canyon Road and adjacent unstabilized roads and surfaces would continue to contribute directly to localized fugitive dust that could affect long-term air quality.

3.1.4 Cumulative Impacts

The geographic area for the cumulative effects analysis is Pinal County; however the analysis looked closely at any future projects within the Cottonwood Canyon Road corridor, adjacent State Trust lands and the White Canyon RCA.

In Pinal County, if growth and population projections associated with Superstition Vistas are realized, there is expected to be an increase in demand for public lands, specifically a demand to use open space for OHV recreation. Dust generation from increased OHV traffic would have a moderate impact on fugitive dust generation and air quality in northeastern Pinal County.

Foreseeable mining uses associated with the Ray Land Exchange project may include the generation of air emissions. According to the BLM Ray Land Exchange/Plan Amendment EIS, Asarco would need to apply to ADEQ for a major modification to its Title V air quality permit if any emissions exceeded significance levels for regulated air pollutants (BLM, 1999).

Ripsey Wash Acquisition would likely generate dust from tailings ponds and active mining. Asarco would need to apply to ADEQ for any exceedances of significance levels for regulated air pollutants.

On November 15, 2014 Resolution Copper Mining, LLC, submitted a Mine Plan of Operation (MPO) to the Tonto National Forest for the construction and operation of a copper mine near Superior, AZ, approximately 13 miles from the proposed SBMRLF. Major facilities include an underground mine, concentrator, tailings storage, pipelines, filter plant, and conveyor and rail facilities. Proposed mine facilities include pipelines and well fields that would be located within six miles of the proposed SBMRLF and within three miles of the Cottonwood Canyon Road corridor with the pipelines crossing State Trust land north of the project area. The Resolution Copper Mine, if built, can be expected to contribute to particulate emissions, regional traffic, and habitat losses to various species of approximately 5000 acres (depending on tailings storage configuration). The Resolution Copper Mine MPO has not yet been accepted as complete by the Tonto National Forest. The proposal would require a separate NEPA analysis.

The cumulative impact on air quality would be moderate and may contribute to an increase in PM₁₀ particulates in Pinal County.

3.1.5 Mitigation Measures

- Watering of the roads within the SBMRLF would be performed as per the requirements of Pinal County Air Quality Control District Air Quality Operating Source Permit for the SBMRLF. An on-site production well or wells and a storage tank located on SBRLF private lands would provide water for dust control, fire suppression, and other landfill construction needs. Pinal County would require management of fugitive dust from landfill truck traffic on Cottonwood Canyon Road through water and/or chemical suppressant methods. Chemical suppressants have not yet been selected. If chemical suppressants are used, the suppressant would be selected at the time the road is constructed and approved by BLM.
- Water would be applied as needed to control dust during all phases of construction. Areas included are the project site and any construction site access roads, as well as any other areas contributing to dust production as a result of the proposed project.
- Construction entrances would be stabilized and built in accordance with ADOT and EPA guidelines to minimize sediment “track out” on existing roadways during construction.

- In accordance with the require dust control permit/air quality source permit, a monitoring program is mandatory for all heavy truck operations. Pinal County would be responsible for implementing the monitoring program.
- Dust suppression measures would be used from the time the ROW grant is issued through the construction period and through the entire use of the road per the appropriate Pinal County Air Quality Permit.
- Within five years of ROW grant issuance, the ROW holder will be required to make due diligence toward initiating road construction (per 43 CFR 2807.17) unless an issue is encountered during data recovery. In the event of a delay, the holder will provide the BLM good cause as to the nature of any delay with anticipated construction dates. To demonstrate due diligence, the ROW Holder will provide a written report annually to BLM on January 31 of each year describing the progress made toward commencement of construction including milestones such as obtaining permits from all regulatory agencies involved, obtaining of construction bids, obtaining inspections, status of archeological mitigation, and any other requirement for the construction of the road.

3.2 Cultural Resources

For the purposes of the cultural resource investigations, the area of potential effect (APE) for the project includes three parts: the access road, two TUP areas on BLM land, two TCE areas on State Trust land, and the SR 79 and Cottonwood Canyon Road intersection. The access road is approximately six miles long, including one mile on BLM land and five miles on State Trust Land; the width of the APE is 44 ft on BLM land and 60 ft on State Trust land. The APE also includes two TUPs on BLM land for culvert construction and two TCEs on State Trust Land for equipment storage; each totaling approximately 2 acres. The improvements at the intersection of SR 79 and Cottonwood Canyon Road will occur on 0.6 miles of right-of-way on ADOT land. In total, the APE consists of approximately 9.3 acres of BLM land and 47.6 acres of State Trust Land. For the purposes of the Class I cultural resource literature review, a 1-mile review area around the entire APE was examined for previous cultural resource projects and previously recorded cultural resources. Class III pedestrian survey of the APE identified ten sites, of which six were recommended for further work; an additional site on ASLD land is located close enough to the access road that ASLD recommended construction monitoring.

3.2.1 Affected Environment

Access Road

A Class I literature review was conducted to identify the extent of previous cultural resource surveys and to determine if any known cultural resource sites are present within a 1-mile radius of the Area of Potential Effect (APE). The records search was performed by an archaeologist accessing the records of the State Historic Preservation Office (SHPO), the AZSITE Cultural Resources Database, ASLD, the BLM Tucson Field Office, and the ADOT Historic Preservation Team Portal. The records search resulted in the identification of 12 previous cultural resource surveys and 65 known cultural resource sites within the review area, of which seven cultural resource sites were located within or immediately adjacent to the APE. While the APE had been inspected for cultural resources during previous studies, these studies were more than 10 years old, and SHPO guidelines recommend resurvey of areas not studied within the past 10 years. As

a result, qualified archaeologists conducted pedestrian surveys (i.e., walking systematic transects at 15 meter intervals) of a 60 ft wide, roughly 6 mile long corridor on May 15-19 and 23, 2006, August, 1-2 2007, and May 8, 2008 (Fangmeier et al. 2008a). As a result of the surveys, six previously recorded sites and three newly recorded sites were identified and recorded in the APE. The sites include three prehistoric sites (one habitation site, one canal, and one artifact scatter), three historic sites (all three roads), and three sites that are dual component (having both prehistoric and historic attributes). Five of the sites have been recommended eligible for listing on the National Register of Historic Places. The eligibility of three sites could not be determined based on surface evidence alone and would require eligibility testing. Once testing occurs, accurate mitigation efforts/recommendations can be applied. Federal agencies are required to evaluate and consider the effects and impacts of the proposed action to these eight sites under Section 106 of the NHPA. One additional site, AZ U:15:355 (ASM), is not located in the APE but is located sufficiently close to the APE that ASLD recommended considering potential impacts to the site by the proposed project.

Private Land

Associated with the proposed road improvements is the proposed development of a private land parcel currently used for mining operations. A Class I literature review was conducted to identify the extent of previous cultural resource surveys and to determine if any known cultural resource sites are present within a 1-mile radius of the private parcel. The records search was performed by an archaeologist accessing the records of the Arizona SHPO, the AZSITE Cultural Resources Database, ASLD, and the BLM Tucson Field Office. The records search resulted in the identification of six previously conducted cultural resource surveys and nine known cultural resource sites within the review area, however, none of these sites are found within the current APE private parcel. The parcel had not been previously surveyed at Class III level, so qualified archaeologists conducted a Class III Pedestrian Survey of a total of 408 acres in May 2006, August 2007, and May 2008 (an additional 59 acres were not examined due to disturbance from ongoing mining operations) (Fangmeier et al. 2008b). As a result of the surveys, 18 newly recorded sites were identified and recorded in the APE. The sites include four historic roads and 14 historic mining sites, one of which also contains a prehistoric artifact scatter. Six of the sites have been recommended eligible for listing on the NRHP. Since the BLM is the lead federal agency for the project, the BLM would be required to evaluate and consider the effect/impacts to these resources as required in Section 106 of the NHPA. A Memorandum of Agreement is being prepared for the project, which would include all cooperating agencies, and would serve as a roadmap to guide the agency in dealing with the adverse effects from this project.

3.2.2 Impacts of Proposed Action

Currently, the width of Cottonwood Canyon Road ranges from 26 ft to 50 ft and the width of Sandman Road from Cottonwood Canyon Road to the private parcel ranges from 28 to 45ft. Under the Proposed Action, roughly six miles of dirt road would be improved. On ASLD land, the road would be widened to 60 ft, including a 44 ft wide ABC road with 8 ft wide shoulders on each side where drainage would be located. On BLM-administered land, the road would be widened to 44 ft, which includes a 28-ft-wide road and 8-ft-wide shoulders; in addition, a fence would be installed along the edge of the right-of-way through BLM-administered land.

Ground disturbing activities such as road construction, which includes road expansion and widening and fence installation, can have a direct impact on cultural resources. The proposed

project development activities have the potential to permanently damage or destroy cultural resource sites.

Based on 100 percent plans, the Proposed Action would have impacts to six cultural resource sites along the access road; an adverse effect has been identified for all six sites. Of these six sites, three sites of unknown eligibility would require eligibility testing and three sites that have been recommended eligible for the NRHP would require data recovery. In addition, one cultural resource site that has been recommended eligible occurs outside the APE, but is sufficiently close that it may be impacted; site AZ U:15:355 (ASM) would require an archaeological monitor to be present during project operations.

The Proposed Action would also have impacts through the associated development of the private land parcel. Three sites that have been recommended eligible for the NHRP would be impacted, resulting in an adverse effect. The BLM, as lead agency, in consultation with the Arizona SHPO, has determined an adverse effect for three properties on the private land parcel. As a result, mitigation to resolve the adverse effects would be necessary.

Land ownership for the nine cultural resource sites is as follows: one site located on BLM-administered land, five sites located on ASLD, and three sites on private land. The BLM, in consultation with the Arizona SHPO, ASLD, and other consulting parties, has determined that the direct and indirect impacts on these sites from the Proposed Action would be adverse. As a result, mitigation to resolve those adverse effects would be necessary.

A treatment plan has been submitted to the BLM by the archaeological consulting firm, identifying the adverse effect to all nine cultural resource sites and providing protocols for monitoring the site adjacent to the APE. The Treatment Plan outlines how the cultural resource sites would be mitigated. Eligibility testing as well as Phase I data recovery would result in the examination of one site on the BLM land, five sites on the ASLD land, and three sites on private land. Proposed project activities would impact cultural deposits found on all three of the aforementioned land jurisdiction. Also, the Treatment Plan outlines plans for Phase I data recovery only. If further work is warranted because significant cultural deposits are encountered, and/or more testing work is needed, a Phase II data recovery plan would need to be developed. In addition the Treatment Plan outlines monitoring and discovery procedures to be followed during construction phases along the access road adjacent to a site on ASLD land. The 17 remaining cultural resource sites would not be adversely affected directly or indirectly by the Proposed Action, so no further work is necessary at these sites.

Ground disturbing activities that result from proposed project activities can also have indirect impacts to cultural resources. The anticipated increase in human activity may result in additional surface disturbance where cultural resources exist. Also any increase in human activity in an area could result in increases in looting and artifact theft in a previously low use area.

Indirect impacts expected to occur can be separated into long-term and short-term. A long-term impact that would have an effect on cultural resources in the area would be when the road is improved; this would create an increase in traffic, travelling at faster rates, leading to more cars, trucks and OHVs travelling onto and through BLM-administered lands located at the end of the

road. Short-term indirect impacts would be increased attention to areas of cultural resource sites that require excavation. The project is located along a roadway. Excavation of archaeological sites near this road would increase the possibility of looting, pothunting, and vandalism. Another short-term indirect impact would be fence installation on the BLM land. Road shoulder areas where fencing is proposed on the BLM-administered land are very close to archaeological site boundary edges; thus, impacts of the fence installation are expected to occur. An archaeologist would be required on site to monitor fence installation activities.

3.2.3 Impacts of No Action Alternative

Cultural resources would continue to be impacted through uncontrolled motorized OHV use on State Trust land as well as BLM-administered land adjacent to Cottonwood Canyon Road. Additionally, increased visitation to the area is anticipated with the growth in regional population and OHV recreational activities. Impacts to areas where cultural resources exist within the Cottonwood Canyon Road corridor are expected to continue. Under the No Action Alternative, Cottonwood Canyon Road would remain an unimproved dirt road and the proposed construction activities would not occur. Impact to cultural resources associated with motorized trail-based recreational access would continue on State Trust land adjacent to Cottonwood Canyon Road.

3.2.4 Cumulative Impacts

The geographic area of analysis is Cottonwood Canyon Road, adjacent State Trust and BLM-administered land along the corridor, and the White Canyon RCA. Two projects have been identified within the White Canyon RCA that must be considered for cumulative impacts to cultural resources.

Ray Land Exchange Project

In the 1990s, Asarco proposed to acquire 10,339 acres of BLM-administered and State Trust land in Gila and Pinal Counties (selected lands) in exchange for 7,304 acres of Asarco-owned land in Mohave, La Paz, and Pinal Counties (offered lands). Cultural resource survey of the selected lands identified 80 sites, of which 53 sites were located on BLM-administered land and 27 sites occurred on State Trust land. Of these, 37 sites on BLM-administered land and nine sites on State Trust land were determined eligible for listing on the National Register of Historic Places. Mitigation of adverse effects was performed on the nine sites on State Trust land; a data recovery treatment plan for mitigation of the 37 sites on BLM-administered land was prepared but has not been implemented (Bartholomew and Tremblay 2013b).

An Environmental Impact Statement (EIS) and Record of Decision (ROD) were issued in 2000; in response to legal challenges, the BLM is preparing a supplemental EIS. Because all previous cultural resource work was completed more than 10 years ago, SWCA Environmental Consultants (SWCA) was tasked with assessing the adequacy of the previous work and site eligibility recommendations. SWCA concluded that the work was generally adequate but recommended resurvey of a 10 percent sample of the BLM-administered parcels, sites visits to all eligible sites and rock art sites, and reevaluation of several Historic period sites (Tremblay 2012). The resurvey of 904 acres identified 13 new sites, prompting SWCA to recommend resurvey of an additional 2,464 acres (Bartholomew and Tremblay 2013b). Survey of this area resulted in the identification of 27 new sites (Bartholomew and Tremblay 2013a).

In total, 120 sites—93 on BLM-administered land and 27 on State Trust land—have been identified within the Ray Land Exchange parcels. Of the 93 sites on BLM-administered land, 64 have been recommended for eligibility testing or data recovery. These sites include historic sites (mines, camps, a road, trash scatter), prehistoric sites (resource procurement/processing sites, habitations, agricultural sites, rockshelters, caves, trails, a rock art site), and multicomponent sites. Of the 27 sites on State Trust land, the nine sites eligible for listing on the National Register of Historic Places have been mitigated.

Ripsey Wash Project

The Ripsey Wash project would involve the acquisition of ca. 7,400 acres of State Trust land for expanded mining activities at the Asarco-Ray Mine Complex. Cultural resource survey of this area identified 43 sites (Prasciunas 2012; Prasciunas et al. 2011), including historic sites (mining/camp sites, railroad, roads, habitation/camp sites, and power lines) and prehistoric sites (habitation sites, agricultural sites, resource procurement/processing sites, and a site of unknown function). Of these, 29 sites have been recommended eligible for listing on the National Register of Historic Places and one site requires archaeological testing to evaluate its eligibility.

Summary of Cumulative Impacts

The Ray Land Exchange and Ripsey Wash projects have impacted nine sites already and would impact a combined 94 sites eligible for listing on the National Register of Historic Places. These sites include historic mining and camp sites, roads, railroads, habitations, and trash scatters; prehistoric habitations, agricultural sites, resource procurement/processing sites, trails, rockshelters, caves and rock art; and multicomponent sites with both prehistoric and historic resources. Although some of these sites have already been mitigated via data recovery and a historic properties treatment plan has been developed to mitigate impacts to the remaining sites, even mitigated impacts result in the loss of these resources.

The SBMRLF project would impact 9 sites that are eligible for listing on the National Register of Historic Places. These sites include two historic mining sites, two prehistoric habitation sites, two prehistoric resource procurement/processing sites, one prehistoric canal, and three multicomponent sites. One of the prehistoric habitation sites contains especially sensitive and unique features, while some of these features would not be impacted, others would be impacted, including three separate cultural middens. These features would be mitigated by data recovery.

3.2.5 Mitigation Measures

- An archaeological monitor must be present when the fence installation occurs on BLM-administered land within the site. This would be needed when actual fence posts are being dug into the ground to prevent or minimize further impacts to the site.
- Any archaeological or historic artifacts or remains or vertebrate fossils discovered during operations shall be left intact and undisturbed; all work in the area shall stop immediately and the BLM Archaeologist and BLM Field Manager shall be notified. Commencement of operations shall be allowed upon clearance by the BLM Field Manager.
- An additional cultural resource survey would be required in the event the project location is changed or additional surface disturbing operations are added to the project after the

initial survey. Any such survey would have to be completed prior to commencement of operations.

- If in connection with operations under this authorization, any human remains, funerary objects, sacred objects, or objects of cultural patrimony as defined in Native American Graves Protection and Repatriation Act (NAGPRA) (L. 101-601; Stat. 3048; 25 U.S.C. 3001) are discovered, project operations would stop, operator would protect the remains and objects, and immediately notify the appropriate land managing agency archaeologist (ASM Repatriation Coordinator if the find is on State land or the Tucson Field Office archaeologist if the find is on BLM-administered land) of the discovery. Project operations cannot resume until the appropriate permissions to resume are given.
- During the cultural data recovery, the owners/developers will provide at their cost overnight security to protect the cultural project area from vandalism.
- No ground construction disturbances or vehicular traffic are to occur south of the Cottonwood Canyon Road or west of Sandman Road. Prior to construction, the Owners/Developers and their construction contractors would flag, fence or stake the areas to be expanded within the 44 foot ROW dimension to provide limits to new disturbances in the cultural and construction process.

3.3 Floodplain

3.3.1 Affected Environment

The Federal Emergency Management Agency (FEMA) has designated Cottonwood Canyon Wash as a Zone A floodplain (Figure 11. Floodplain Map). This designation means that these areas are subject to inundation by the 1-percent-annual-chance flood event generally determined using approximation methodologies. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are shown. Therefore, all drainage crossings have been designed to the 100-year 24-hour rainfall-runoff event, as calculated using a HEC-HMS modeling method.

There are a number of small ephemeral washes that flow to the west and southwest across Cottonwood Canyon Road. There are no drainage structures along Cottonwood Canyon Road. Flows are allowed to pass over the existing roadway to adjacent low points, ditches and other low lying areas. The roadbed on State Trust land is crossed at grade by five unnamed ephemeral stream channels. These drainages are not FEMA delineated floodplains.

An unnamed wash on BLM-administered land crosses Cottonwood Canyon Road. Cottonwood Canyon Wash is the primary tributary in the project vicinity. It is located northeast of the project area but flows west into the project area north of Cottonwood Canyon Road. There are no recognized floodplains crossing the private property. Consulting the FEMA Flood Insurance Rate Maps 04021CO 550E shows that the private property is designated Zone X. Areas of minimal flood hazard, which are the areas outside the Special Flood Hazard Area, and are higher than the elevation of the 0.2-percent-annual-chance flood, are labeled Zone C or Zone X (Figure 11. Floodplain Map).

3.3.2 Impacts of Proposed Action

The Proposed Action would result in negligible impacts to the current 100-year floodplain delineation. An analysis of Cottonwood Canyon Road alignment shows that there are six sub basins that drain into the alignment from east to west. Hydrologic analyses for existing conditions were performed for the peak 100 year storm event, as required under the Pinal County Drainage Manual. The fundamental objective of these analyses was to estimate peak discharges for the design storm event. The watershed was modeled in accordance with the Pinal County Drainage Manual. A 24-hour local storm was used to determine peak discharge for 100-year events. The modeling was conducted in order to gather information for the design of the low flow crossings, shoulder ditches, CMPs, and RCBCs for the Cottonwood Canyon Road improvements. The unnamed wash on BLM-administered land crossing Cottonwood Canyon Road is estimated to have a 100 year 24-hour flow rate of 1,556 cfs (cubic feet per second) <25,000 cfs. Cottonwood Canyon Wash has a 100 year 24 hour flow rate estimated at 3,800 cfs <25,000cfs. Based on the analysis, the design of the road improvements and drainage structures associated with the Proposed Action would handle flood flows and would not result in a rise in elevation of the 100-year floodplain. The installation of an ABC road would decrease sedimentation into the washes and floodplain that result from driving on and grading dirt roads. This would have a beneficial impact on water quality. Because one or more acres of land would be disturbed, an Arizona Pollutant Discharge Elimination System (AZPDES) permit would be required. The effect of sedimentation would be greatest during construction and revegetation period. Temporary sedimentation associated with construction would be managed by erosion control measures stipulated in Pinal County/ADOT specifications. Erosion associated with the removal of vegetation would be controlled in accordance with the AZPDES general permit and a Stormwater Pollution Prevention Plan (SWPPP) which would be implemented to minimize negative impact to washes and the floodplain.

The primary watercourse affected by the construction of the landfill is an unnamed ephemeral wash passing through the landfill site flowing to the west toward Cottonwood Canyon Wash. Arizona Statutes require that no part of a proposed landfill shall be located within half a mile of a 100-year floodplain with flows in excess of 25,000 cfs. A hydrological analysis was performed on Cottonwood Canyon Wash using a HEC-1 model to determine peak flow rates. The model generated a 100-year peak flow less than 3,800 cfs (Solid Waste Facility Plan Application, Appendix R, Part 2 Table A/Figure R-2).

3.3.3 Impacts of No Action Alternative

Implementing the No Action alternative would result in no changes to the areas designated as floodplains in the project area. However, the existing washes and their associated floodplains within the project area are crossed by dirt roads with no soil stabilization in place. Continual vehicular crossings of this floodplain may result in minor adverse effects over time, possibly causing increased sediment transport and turbid water conditions when these ephemeral washes are flowing. Selection of the No Action Alternative could have continued minor long-term effects on the project area floodplains.

3.3.4 Cumulative Impacts

The geographic area of analysis is the Cottonwood Canyon Wash watershed, There would be no cumulative impacts to floodplains for this project as there are only negligible impacts to the floodplain from project activities and there are no other foreseeable projects in this floodplain. Other projects such as the Ray Land Exchange and the Ripsey Wash project are hydrologically and geographically separated from this project and would have no opportunity to commonly impact the floodplain.

3.3.5 Mitigation Measures

- Prior to construction the contractor shall provide to the BLM a Stormwater Pollution Prevention Plan (SWPPP) for review. The SWPPP would be implemented to minimize negative impacts to washes and the floodplain. During construction the Owner/Developer and contractor would be responsible for inspections and maintenance of all SWPPP Best Management Practices (BMPs).
- Design of drainage systems to reduce stormwater velocity and erosion in drainage channels which would result in negligible-to-minor, long-term adverse effects and implementation of the construction contractor's SWPPP.
- Implementation of mandatory sediment and erosion-control measures during and after construction would result in avoidance of excessively drained soils on lower benches adjacent to natural drainages. These include but are not limited to silt fence/waddle placement and mulch cover, hydroseeding, and rock check dams, graveled ingress/egress.
- The contractor shall submit the National Pollutant Discharge Elimination System Permit Notice of Intent to the EPA only after the SWPPP has been prepared, approved by BLM and is ready for implementation. The Notice of Termination will be submitted to the EPA upon the project's completion.
- No work shall occur within Jurisdictional Waters of the U.S. until the appropriate Clean Water Act (CWA) Section 401 and 404 permits are obtained.
- The contractor shall comply with all terms and conditions of the Section 404 Nationwide Permit No. 12 and 14 as established by the U.S. Army Corps of Engineers, and conditions of the Section 401 Individual Water Quality Certification, certified by the EPA.

3.4 Native American Religious Concerns

3.4.1 Affected Environment

Under Section 106 of the National Historic Preservation Act, the BLM is responsible for consultation with tribes whose tradition or history may contribute to the National Historic Register of Places eligibility nominations for an affected historic property. The Federal cultural resource protection law, the National Historic Preservation Act, Section 106 requires all Federal agencies to consult with appropriate American Indian tribes if a proposed activity results in destruction to sites. In addition, specific to Traditional Cultural Properties (TCP's), Section 101 (d)(6) of the NHPA recognizes traditional and religious importance of sites determined eligible for the National Register of Historic Places recommended as eligible by Tribes. Section 101

(d)(6) provides for protection of spiritual places, and enforces NAGPRA provisions and guidance. NAGPRA provides for and controls the removal of human remains, funerary objects, sacred objects, and objects of cultural patrimony on Federal and Tribal lands. The Act requires Federal agencies to report inadvertent grave discoveries as a result of project operations. In addition, provisions are set forth for the repatriation of cultural materials inadvertently discovered.

Tribal consultation efforts conducted for the Silverbar project include: written consultation correspondence letters, field trips to the project area and face to face coordination by members of the Tucson BLM Field Office on four separate occasions. On one of the site visits, tribal representatives identified traditional areas viewed as culturally important as well as a number of areas that could be considered Traditional Cultural Place areas, holding special importance to members of the Four Southern Tribes.

For the Silverbar Project, the BLM will prepare a monitoring and discovery plan which will involve participation between the BLM, SHPO and Tribes. The monitoring and discovery plan will outline the course of action to be followed in the case of an inadvertent discovery within the planned project area.

Current conditions for cultural resource sites within the project area reveal that some cultural resource sites are deteriorating at an accelerated rate and have lost integrity especially within the past five years. The factors which have contributed to the increase in accessibility include, uncontrolled recreation use, primarily ATV and four wheeler use and illegal target shooting areas. It has been documented that once inaccessible areas are opened up to the different uses there is a direct correlation with increased looting and vandalism of artifacts and cultural resource sites become destructed. Expected increase in use by the public in this area would likely increase looting and vandalism of archaeological sites within the project area. A downward trend in cultural resource condition is expected.

3.4.2 Impacts of Proposed Action:

Current BLM management objectives are to protect and preserve Native American cultural and sacred sites, as well as Native American access to cultural sites wherever possible. For example, areas which have been identified by Tribes where traditional plant gathering occurs will be kept open for all collection.

All areas of the proposed project were surveyed following guidance provided by Section 106 NHPA. In addition, all project proposed temporary construction areas, equipment storage areas and culvert installation areas were surveyed following guidelines provided under Section 106 NHPA.

As lead Federal Agency, the BLM will devise a Memorandum of Agreement (MOA) for the project and will ask the Tribes, SHPO and all other cooperating agencies to sign. The MOA will provide direction and guidance on how and when to consult. Also, Tribes will need to be provided with periodic project updates along with Tribes being asked to participate in the Section 106 process.

3.4.3 Impacts of No Action Alternative:

Under the No Action Alternative, degradation to cultural resource sites within the project area would continue within the current conditions and uses (uncontrolled recreational off road vehicle use). Native American Tribes would continue to see a downward trend in this area concerning cultural resources. However, no direct impacts from the project would occur if the project did not take place.

3.4.4 Cumulative Impacts:

Cumulatively or collectively cultural resource sites within the White Canyon RCA make up an important cultural connection for local American Indian Tribes.

Uncontrolled ATV and other off road recreational vehicle use, including rock crawlers have destroyed petroglyphs in the area. Open target shooting sites have directly impacted cultural resource sites within the Cottonwood Canyon Area. Within the White Canyon RCA projects with a mining focus, such as the Ray Land Exchange and the Ripsey Wash Projects will likely impact numerous cultural resource sites as well as numerous TCP sites important to Native American Tribes.

3.4.5 Mitigation Measures

- Tribes will be provided with project updates and will participate in the Section 106 NHPA process.

3.5 Threatened and Endangered Species

3.5.1 Affected Environment

The project area is located within the Sonoran desertscrub biotic community. The eastern extent of the project area closest to Mineral Mountains is characterized as Arizona upland desertscrub; the western extent falls within an area characterized by the creosotebush-bursage series of the Lower Colorado River subdivision (Brown 1994). The project limits are dissected by several small desert washes characterized as Sonoran riparian scrubland. To assess the potential for this project to impact species protected by the Endangered Species Act of 1973, as amended (ESA) (16 US Code 1531-1544), we reviewed the habitat requirements and distribution of each endangered, threatened, proposed, and candidate species known to occur in Pinal County to identify those that could occur within the project area. We identified one endangered, one proposed endangered, and two candidate species with varying potential to be affected by the proposed action (see Appendix C for Biological Evaluation [BE] report and additional information regarding species excluded from further analysis). This project would have no effect to species excluded from further evaluation (Archaeological Consulting Services 2013).

The proposed project would be constructed in order to provide access to a proposed regional landfill; therefore, these two projects are considered to be interrelated and interdependent. Because development of the landfill is contingent upon the completion of the proposed road

improvements, we have addressed the effects of the proposed landfill on biological resources as a connected action.

Acuña Cactus

The acuña cactus (*Echinomastus erectocentrus* var. *acuñensis*) is protected under the Arizona Native Plant Law and by the Convention on International Trade in Endangered Species (CITES; (U.S. Fish and Wildlife Service [USFWS] 1992). In 2012, the USFWS proposed to list the acuña cactus as endangered with designated critical habitat under the ESA (USFWS 2012). Areas proposed as critical habitat include those known to be occupied by the species as well as unoccupied areas the USFWS considers to be essential to its conservation. The primary constituent elements of acuña cactus habitat include the presence of native paloverde-cacti-mixed scrub vegetation, pollinator habitat within 900 meters of each individual cactus, the presence of bare soils for seed dispersal, and volcanic (rhyolite, andesite, tuff, granite, granodiorite, diorite, or quartz monzonite) bedrock located in areas of less than 30 percent slope (USFWS 2012). Habitat loss and illegal collection are major threats to the species. Drought may also significantly affect mortality in cacti (USFWS 2005).

Known populations of acuña cactus and associated proposed critical habitat occur within two miles of the project limits and within one mile of the SBMRLF parcel boundary near the Gila River to the south but no acuña cacti have been observed within the immediate project area (Arizona Game and Fish Department [AGFD] 2004). On 7 and 8 August 2007, ACS conducted a survey of all potentially suitable acuña cactus habitat within 30 feet of the existing Cottonwood Canyon Road alignment. A survey for protected native plants was also conducted on Arizona State Trust lands adjacent to Cottonwood Canyon Road on 15 May 2007 and within portions of Cottonwood Canyon Wash on 30 May 2008. ACS did not conduct surveys for acuña cactus within the SBMRLF parcel due to a lack of potential habitat in that area. No acuña cacti were observed during any survey activities conducted by ACS.

Although known populations and critical habitat for acuña cactus occur within the project vicinity, the project area including the SBMRLF does not contain all primary constituent elements of its habitat. The requisite native paloverde-cacti-mixed scrub vegetation is present within the project limits as is bare soil and pollinator habitat. The project limits also fall within the correct elevation range (1,200 to 3,800 feet) and contain slopes that do not exceed the 30% tolerance of the cactus. However, the areas within and adjacent to the project limits do not include the volcanic geological formations necessary to support the acuña cactus but instead contain metamorphic formations, sedimentary formations, and surficial alluvial deposits (ALRIS 1992). Additionally, the project limits exhibit extensive signs of disturbance including large unvegetated areas caused by off-road and other recreational vehicles.

Lesser Long-nosed Bat

The lesser long-nosed bat (*Leptonycteris curasoae yerbabuena*) is listed as federally endangered under the ESA. Population declines appear to be due to an overall reduction of numbers and sizes of maternity colonies in Arizona and Sonora resulting from exclusion and disturbance. Local harvesting of native agaves for mescal and tequila production in northern Mexico also may have contributed to a reduction in the number of available forage plants (AGFD 2003).

There are some foraging opportunities for lesser long-nosed bats within the project area (e.g., saguaro); however, no alternative food sources (e.g., agaves) occur within the project limits. Saguaros within the project area around Cottonwood Canyon Road occur at low densities; 19 individuals occur within the project limits. Relatively higher densities of saguaro occur in the slopes to the east and south, providing suitable alternate foraging habitat within the project vicinity.

Mine adits, rock crevices, and other potential roost sites exist within the project vicinity. Although no surveys for lesser long-nosed bats have been conducted within the project limits, a survey of known mine adits within the SBMRLF parcel was conducted by ACS on 30 May 2008. Several mine adits were not fully surveyed due to safety concerns. No lesser long-nosed bats or sign of nectarivorous bats were observed in any of the surveyed mine adits within the SBMRLF parcel. In addition, a study conducted by the Center for Sonoran Desert Studies did not detect any lesser long-nosed bats within study areas located in east-central Arizona, including the Aravaipa Creek area east of the Mineral Mountains (Krebbs 2007). The nearest known species records occur in the Picacho Mountains in Pinal County, more than 30 miles to the south, and the nearest known roost sites occur more than 40 miles to the southwest and southeast (USFWS 1994).

Sonoran Desert Tortoise

In 2010, the USFWS determined that the Sonoran desert tortoise (*Gopherus morafkai*) was warranted for listing under the ESA as Threatened or Endangered, but was precluded by higher priority items; therefore, the Sonoran desert tortoise is currently a Candidate Species under the ESA (USFWS 2010a). As well as being a Candidate Species under the ESA, the Sonoran desert tortoise is also on BLM's Sensitive Species list. Threats to Sonoran desert tortoises include direct loss of individuals due to collection for the pet trade, poaching, vehicular impacts, military activities, livestock trampling, grazing, mining developments (e.g., ASARCO-RAY), recreation activities, disease, and increased predation by ravens, coyotes, and feral dogs as well as habitat degradation and fragmentation. Urban sprawl and livestock grazing are considered the main causes of tortoise habitat loss.

Sonoran desert tortoises are known to occur within the project vicinity. ACS conducted clearance surveys for tortoises within the project limits and the SBMRLF parcel on 19, 23-24, 27, and 31 May 2011 and 9-10 June 2011. No tortoises were detected within the project limits or within the SMBLRF parcel. We observed three areas of tortoise scat in association with rocky slopes within and just outside the SMBRLF parcel (Figure 10). No tortoise sign was observed along the project limits on Cottonwood Canyon Road. A range wide desert tortoise plan developed by the BLM categorizes desert tortoise habitat into three types. According to the BLM (2010), Category III habitat is present within the eastern two miles of the project limits and adjacent lands to the north and south. Category II habitat is within the SBMRLF and surrounding lands to the north, south, and east. The Category II habitat is generally limited to rugged mountainous areas within the project area, whereas the Category III encompasses the bajada slopes around the mountains. The western portion of the project limits is not classified by the BLM as tortoise habitat (see project BE in Appendix C for habitat maps and more detailed survey results). Although no steep, rocky slopes suitable for burrows occur within the project limits, desert tortoises may use pack rat middens or caliche caves located along nearby Cottonwood Canyon Wash as shelter sites.

Burrows are not likely to be located within the project limits but foraging habitat is present. Additionally, tortoises may occasionally disperse through the project limits from Mineral Mountain during long-distance movement events. However, off-road vehicles have caused extensive damage to the areas surrounding the project limits thus reducing their value for desert tortoises. The likelihood of desert tortoise use of the project limits decreases along a westward gradient as distance from the rocky slopes of Mineral Mountain and BLM Category II habitat increases.

Tucson Shovel-nosed Snake

The USFWS recently found that listing the Tucson shovel-nosed snake (*Chionactis occipitalis klauberi*) as a Threatened or Endangered Species is warranted but precluded by higher priority items; therefore, the subspecies is currently a candidate for listing under the ESA (USFWS 2010b). Shovel-nosed snakes within the intergrade zone between the Tucson and Colorado Desert subspecies are not considered within the petition for listing (USFWS 2008). Threats to the Tucson shovel-nosed snake include loss and fragmentation of habitat due to agricultural and urban development, OHV activities, and road construction (AGFD 2002).

Although current survey data is not available for this species within the project area, records for the species are known from within the project vicinity (refer to BE in Appendix C). In addition, surveys conducted by the AGFD in the vicinity of the nearby Florence Military Reservation (FMR) in 2008 documented 23 Tucson shovel-nosed snake road-kills located within FMR and along SR 79 (Mixan and Lowery 2008a).

A study conducted by AGFD on the nearby FMR indicated that Tucson shovel-nosed snake habitat within their study area was best predicted by the underlying Arizona Soil Series; aside from creosotebush-bursage series habitat, vegetation was not a reliable indicator of suitable habitat. Elevations above 2,100 feet were most suitable, and loam, clay loam, sandy clay loam, and sandy loam were the most suitable soil types. Slopes less than 5% were also considered most suitable for Tucson shovel-nosed snake occupancy (Mixan and Lowery 2008b). Suitable creosotebush-bursage habitat occurs within the project area. The full extent of the project limits is comprised of appropriate soil types with slopes suitable for occupancy by Tucson shovel-nosed snake (USDA National Resources Conservation Service 2007). However, the soils within and adjacent to the project limits on BLM-administered land have a hard, gravelly surface unsuitable for use by shovel-nosed snakes. West of the BLM-administered land, the project limits are surrounded by the loose, sandy soil this species is known to utilize.

3.5.2 Impacts of Proposed Action

Acuña Cactus

Although occupied proposed critical habitat for the species occurs approximately two miles south of the project limits, the project limits do not contain the appropriate geology to support the acuña cactus. In addition, no acuña cacti were observed during survey activities or general field visits within the project area. Therefore, no direct or indirect affects to acuña cactus or its habitat would occur as a result of project actions.

Development of the SBMRLF would have no impact on the acuña cactus (ACS 2008a). The required vegetation and bare soil exist within the landfill parcel but suitable geological

formations do not (ALRIS 1992). Additionally, portions of the SMBRLF parcel contain slopes that exceed the 30% tolerance of the cactus while other areas exhibit extensive signs of disturbance including large unvegetated areas caused by off-road vehicles and previous mining activities. Therefore, the two projects would have no interrelated or interdependent effects to the acuña cactus or its habitat.

Therefore, this project would have no impact on the acuña cactus or its habitat.

Lesser Long-nosed Bat

Because no bats or sign of nectarivorous bats were observed within the project vicinity during a survey of accessible adits or other known surveys within the project vicinity, direct impacts to lesser long-nosed bats or their roosting habitat would not occur as a result of project activities.

Although some foraging habitat (e.g., saguaro) exists within the project area, few food plants would be impacted during project activities. Improvements to Cottonwood Canyon Road would result in the removal of 19 saguaros. No agaves occur within the project area.

The project area is located more than 40 miles from any known roost sites. Given the relatively long distance of the project limits from the nearest known bat occurrence records and roost sites, the probability of Lesser Long-Nosed Bats (LLNBs) foraging within the project limits is very low. If LLNBs were to forage within the project vicinity, they would likely occur in very low numbers and during the night when project activities are less likely to occur. Conservation measures would be implemented in order to alleviate potential impacts to foraging bats, such as avoiding the removal or destruction of food plants whenever possible. If food plants must be removed, they would be replanted nearby in an area which would not be disturbed.

Development of the SBMRLF would have no impact on lesser long-nosed bats (ACS 2008a). LLNB were not observed during surveys of the parcel and the nearest observation of the species occurred approximately 30 miles to the south, thus LLNBs are very unlikely be present. Foraging substrates, saguaros, do occur within the SMBRLF parcel but few (<30) are likely to be impacted by landfill development. Because numerous saguaros occur in the hills east and south of the project limits, removal of saguaros within the SMBRLF parcel would not decrease the local availability of foraging substrate. Additionally, conservation measures would be implemented in order to alleviate potential impacts to foraging bats, such as avoiding the removal or destruction of food plants whenever possible. If food plants must be removed, they would be replanted nearby in an area which would not be disturbed. Therefore, the two projects would have no interrelated or interdependent effects to the LLNB or its habitat.

Therefore, this project would not affect the LLNB or its habitat.

Sonoran Desert Tortoise

Sonoran desert tortoises are known to occur within the project vicinity. Category III habitat exists in the eastern portion of the project limits and shelter sites exist throughout the project area. Therefore, project activities may directly impact tortoises by causing some destruction of habitat. Because the project limits do not contain suitable shelter sites, habitat loss would likely be restricted to foraging habitat. The anticipated 50% increase in traffic volume along may also impact tortoises through increased risk of road-kill. However, traffic speeds would be limited to

25 miles per hour, thus minimizing this likelihood. Increased traffic volume may also result in elevated predation of tortoises by ravens and coyotes attracted to the area by elevated levels of trash and other refuse (USFWS 2010a). The fencing that would be installed along the project limits on BLM-administered land would decrease recreational access to the BLM-administered land by discouraging random pull-out parking and camping activities, though BLM-administered land would still be accessible via the State Trust lands. Decreased recreational access to tortoise habitat may benefit the tortoise by preventing some wildlife-human interactions resulting in decreased handling and disease transmission. Because most of the project limits occur in low quality areas outside designated desert tortoise habitat, any negative impacts to tortoises that were to take place would most likely occur within the Category III habitat located on BLM-administered land. However, our surveys found no evidence of desert tortoises within the Category III habitat; therefore, impacts to the tortoise within this area would be minimal. Very little to no impact would occur in the western portion of the project limits because this area is unlikely to be frequented by desert tortoises.

Development of the SBMRLF may impact individual Sonoran desert tortoises (ACS 2008a). Although it falls within an area classified as Category II habitat, most of the landfill parcel contains marginal habitat for desert tortoises due to its highly disturbed condition. However, the presence of desert tortoise scat indicates that portions of the landfill parcel are utilized by this species. Therefore, ground disturbing activities associated with the SBMRLF may cause the direct loss of some desert tortoise habitat. Development of the landfill may also indirectly impact Sonoran desert tortoises occupying adjacent areas by attracting predators such as ravens and coyotes to the area (USFWS 2010a). Due to these potential impacts, the two projects may result in some minimal interrelated or interdependent effects to Sonoran desert tortoises.

Conservation measures including a desert tortoise awareness program for project employees, pre-construction surveys, and an on-site biological monitor would be implemented in order to alleviate potential impacts to Sonoran desert tortoises occurring in the project area. Litter control along the project limits would be provided by the Owners/Developers. Projects resulting in the permanent destruction of desert tortoise habitat on BLM-administered land are required to provide compensation either through direct acquisition of similarly valued replacement habitat or through direct monetary funding (BLM 1991). Activities associated with this project would result in the permanent loss of 1.9 acres of Category III habitat located on BLM-administered land. Category III habitat is compensated at a 1:1 ratio of habitat lost to habitat value replaced.

Therefore, project activities may impact individual Sonoran desert tortoises but are not likely to result in a trend toward federal listing or loss of viability.

Tucson Shovel-nosed Snake

Suitable habitat for Tucson shovel-nosed snakes exists within and adjacent to the project limits along the eastern portion of Cottonwood Canyon Road but not within the BLM-administered land. Roadway construction and improvement activities may directly impact a total of 13.3 acres of potential snake habitat on State Trust land. In addition, Tucson shovel-nosed snakes may also be indirectly impacted due to increased noise, vibration, and degradation of available habitat resulting from the compaction of soil substrates in widened roadway areas. These impacts would largely be limited to the roadway and adjacent areas. Tucson shovel-nosed snakes occurring within the project limits are currently exposed to noise and vibration caused by recreational

activities and vehicular traffic, these disturbance types may increase slightly due to changes in traffic volumes resulting from project activities. In addition, the expected 50% increase in traffic volume would also increase the risk of mortality due to road-kill; however, traffic speeds would be limited to 25 miles per hour, thus minimizing this likelihood.

Because the subspecies utilizes restricted soil types within a small geographic area, Tucson shovel-nosed snakes within the project limits may represent a small but important population. Conservation measures would be implemented to alleviate potential impacts to the Tucson shovel-nosed snake including conducting awareness training for construction personnel, utilizing on-site monitors during project activities, and minimizing the amount of soil compaction and other surface disturbance to the extent possible.

Although the proposed project would result in improved access to and development within the SBMRLF parcel, the SBMRLF project area does not contain suitable habitat for the Tucson shovel-nosed snake due to its highly disturbed condition, rocky terrain, and lack of loose, sandy soil. Therefore, the two projects would have no interrelated or interdependent effects to the Tucson shovel-nosed snake or its habitat.

Therefore, this project may impact individual Tucson shovel-nosed snakes, but is not likely to result in a trend toward federal listing or loss of viability.

3.5.3 Impacts of No Action Alternative

Under this alternative no improvements would be made to the roadway and existing conditions for threatened or endangered species would remain the same.

3.5.4 Cumulative Impacts

Acuña Cactus

Because no direct or indirect affects to acuña cactus or its habitat would occur as a result of this project, cumulative effects are not expected.

Lesser Long-nosed Bat

Because no direct or indirect affects to the LLNB or its habitat would occur as a result of this project, cumulative effects are not expected.

Sonoran Desert Tortoise

The combined actions associated with the Ray Land Exchange, the Ripsey Wash project, and the proposed action, are likely to result in some cumulative effects to the Sonoran desert tortoise. Completion of the Ray Land Exchange would result in a net gain of approximately 6,500 acres of Category I desert tortoise habitat countered by the net loss of approximately 3,100 acres of Category II and 3,000 acres of Category III desert tortoise habitat (BLM 1999). However, most of the tortoise habitat slated for acquisition occurs in the central-western and northwestern portion of the state, well outside of the project vicinity. Approximately 2,100 acres included in the Ripsey Wash project occur in Category II desert tortoise habitat while the remaining ~5,300 acres are classified as Category III habitat. Therefore, large areas of tortoise habitat within the project vicinity would be impacted by proposed future actions.

Tucson Shovel-nosed Snake

The BLM-administered land that would be traded in the Ray Land Exchange is situated in a rugged, mountainous area that is not expected to be utilized by Tucson shovel-nosed snakes. The Ripsey Wash Project is also situated within a rugged area located approximately 12 miles east of the nearest shovel-nosed snake record.

3.5.5 Mitigation Measures

- To alleviate potential impacts to foraging lesser long-nosed bats, the Owner/Developers or their Contractor shall avoid removal of food plants (saguaro) whenever possible. If food plants are removed, they would be replanted nearby in an area which would not be disturbed. In the event that saguaros must be removed and cannot be replanted, the ROW holder will monetarily compensate the BLM for the value of the removed saguaros per the Arizona State Native Plant Value List.
- The Contractor shall employ a qualified biologist to conduct an awareness program for Tucson shovel-nosed snakes. The biologist(s) would also monitor on-site construction activities to prevent harm to the snake. Soil compaction and other surface disturbance would be minimized to the extent possible.
- Clearing, grubbing, and access road construction shall be conducted September 1 through February 28, generally outside of the breeding season for desert nesting birds, to the extent possible. Removal of trees in areas of temporary disturbance shall be minimized. Natural regeneration of native plants shall be supported by cutting vegetation with hand tools, mowing, trimming, or using other removal methods that allow root systems to remain intact.
- Ponding of water caused by project activities will be prevented to the maximum extent possible within the SBMLRF parcel to prevent harm to migratory birds and desert bighorn sheep.
- The Owner/Developers shall provide the BLM with compensation for the loss of 1.9 acres of Category III Sonoran desert tortoise habitat.
- To alleviate potential impacts to Sonoran desert tortoises, the contractor would employ conservation measures including hiring of a biologist to monitor construction activities, presentation of a tortoise awareness program to project personnel, and conducting pre-construction surveys before project activities commence.
- The following conservation measures will be implemented for Sonoran desert tortoise:
 1. Within the 48 hours prior to surface-disturbing activities in Category II or III tortoise habitat, the areas to be disturbed shall be inspected by a qualified biologist for tortoises and their burrows. If a burrow is too deep to see the end of it, a fiber optic scope or instrument of equal abilities shall be used to determine if the burrow is occupied.
 2. All tortoises found incidentally or on surveys shall be relocated to a safe location by the permitted biologist following Arizona Game and Fish Guidelines for Handling Desert Tortoises Encountered on Development Projects (attached). Tortoise burrows that cannot be avoided during construction activities shall be excavated and backfilled. Artificial burrows to which desert tortoises are relocated during tortoise inactivity periods shall be of similar size, shape, orientation, and depth as the original burrows.

3. Biological monitor(s) shall be employed to prevent harm to tortoises during construction activities occurring within Category II and III habitat. A biologist will monitor each cluster of construction workers including each active piece of earth moving equipment. Between March 15 and November 15, a walking clearance of working areas will be conducted every morning and evening by biologists to check for tortoises.
4. Tortoises found within active construction sites shall also be removed to safe locations. If a tortoise is endangered by any construction activity, the activity shall cease until a qualified tortoise biologist is able to remove the tortoise to safety. Tortoises shall be handled only by qualified tortoise biologists and shall be moved solely for the purpose of preventing death or injury.
5. All observations of desert tortoises or their sign will be mapped on a 7.5' topographic map with township, range, and section noted, date, and the observer's name. Along with this map, a data base locality form will be filled out and returned to the BLM Authorized Officer.
6. All desert tortoises handled shall be checked for symptoms of upper respiratory disease syndrome. The presence or absence of symptoms shall be included in the report to the BLM Authorized Officer.
7. A qualified biologist will present an informational program to all construction employees addressing the potential for desert tortoise to occur within the project area, protective measures to be implemented during construction, and specific protocols to observe should desert tortoises be encountered.
8. All activity associated with construction and operation of the project should occur within previously disturbed areas whenever possible. Disturbance to areas outside the project limits will be kept to a minimum.
9. Construction sites shall be maintained in a sanitary condition at all times; waste materials at those sites shall be placed in covered receptacles to avoid attracting predators of desert tortoises and disposed of promptly at an appropriate waste disposal site. The Owners/Developers shall provide litter control along the project limits after construction is completed.
10. Watering of the construction site for dust control shall be conducted in a manner that will not result in development of ponds that could attract desert tortoises. Pondered areas shall be checked regularly by biological monitors and desert tortoises found in the vicinity of the pond shall be safely removed.
11. The Contractor shall limit speed of vehicles to 20 miles per hour in desert tortoise habitat. Construction and maintenance employees shall also be advised that care should be exercised when commuting to and from the project area to reduce road mortality.

3.6 Wastes and Hazardous Materials

3.6.1 Affected Environment

This section describes the current status of wastes (hazardous or solid) that may be present in the project vicinity. A regulatory database records search was obtained on 22 December 2010 and

shows that there are no findings within the project vicinity other than the landfill. A site visit was made on 18 October 2012. Additionally, an interview with the AZARNG was conducted.

The site visit revealed surface debris including a few tires and trash from camping. Due to the nature of the debris (shell casings of various calibers, paper, plastic, and glass), the debris most likely originated from members of the general public, who have access to the land the majority of the time.

The Arizona Department of Emergency and Military Affairs (AZDEMA) and AZARNG have held a special land use permit area (SLUPA) with the Arizona State Land Department (ASLD) for lands north and south of the Cottonwood Canyon Road for the past 20 years. The AZARNG has leased the land to perform artillery training on the property occurring mostly during the summer annual training period. The land north of Cottonwood Canyon Road is no longer being leased by the AZARNG. A SLUPA is still in place for the lands south of the current road. There is no further anticipated use of these lands for military training as there are no artillery units in the state and artillery training is no longer a mission for the AZARNG. Future activities would be limited to use of the area for army preparedness and bivouac but not for use of the firing boxes.

The property north of Cottonwood Canyon Road contains four firing boxes which were used for artillery firing as well as access roads which were used to drive tracked vehicles to the firing boxes (AMEC 2009). Artillery propellant was used in the firing boxes during artillery training. The areas which the AZARNG used were not utilized as impact areas (targets). Munitions were never fired into the firing boxes. All munitions were fired out from the boxes or in self-contained howitzer units, which ensures that there are no unexploded ordinances on the grounds from these munitions firing. Any rounds or propellants that may have been dispersed were either burned or transported out within the self-contained firing canisters. The excess propellant was burned on the ground in the firing boxes. There are no unexploded ordinances in the project vicinity.

A Phase I Environmental Site Assessment (ESA) was completed in May 2009 to assess the entire 6,712 acre area as a condition for the lands being released by AZDEMA back to the ASLD (May 2009, Final Phase I ESA for Florence Military Range Special Land Use Permit Area). The ESA was conducted in general accordance with the scope and limitations of the American Society for Testing and Materials (ASTM) Standard Practice E 1527-05 of the EPA Standards and Practices for All Appropriate Inquiry (AAI), and guidance from the AZDEMA/AZARNG (AMEC 2009:1 Phase I ESA). The purpose of the Phase I ESA is to provide an opinion as to whether surficial or historical evidence indicates any recognized environmental conditions (RECs) in connection with the property at the time of the assessment. It was the finding of the ESA that based on site observations and soil sampling at the site, it does not appear that military activities that have occurred over the past 20 years have negatively impacted the property (AMEC 2009:24). The AZARNG ended its SLUPA for the 6,712 acres in January 2011.

A sand and gravel extraction mining operation currently exists on a private parcel, which is accessed via Cottonwood Canyon Road. The site does not have a documented Phase I ESA and therefore it is unknown what the past hazardous materials environmental conditions are on this site.

A Solid Waste Facility Plan (SWFP) application was approved by ADEQ 30 July 2009 (Appendix D Master Facility Plan Approval). The landfill was approved as a MSWLF. MSWLFs receive household wastes and can also receive nonhazardous sludge, industrial solid waste, and construction and demolition debris. All MSWLFs must comply with the federal regulations in 40 CFR Part 258 (Subtitle D of Resource Conservation Recovery Act, or equivalent state regulations. Some materials may be banned from disposal in MSWLFs including common household items such as paints, cleaners/chemicals, motor oil, batteries, and pesticides. Federal MSWLF standards include:

- Location restrictions ensure that landfills are built in suitable geological areas away from faults, wetlands, floodplains, or other restricted areas.
- Composite liners requirements include a flexible membrane (geomembrane) overlaying two feet of compacted clay soil lining the bottom and sides of the landfill, protect groundwater and the underlying soil from leachate releases.
- Leachate collection and removal systems sit on top of the composite liner and removes leachate from the landfill for treatment and disposal.
- Operating practices include compacting and covering waste frequently with several inches of soil to help reduce odor; control litter, insects, and rodents; and protect public health.
- Groundwater monitoring requirements requires testing groundwater wells to determine whether waste materials have escaped from the landfill.
- Closure and postclosure care requirements include covering landfills and providing long-term care of closed landfills.
- Corrective action provisions controls and cleans up landfill releases and achieves groundwater protection standards.
- Financial assurance provides funding for environmental protection during and after landfill closure (i.e., closure and postclosure care).

As part of the application, a SWFP was prepared. The SWFP contains facility information, general information, administrative and technical demonstration, design criteria, environmental monitoring plans, and closure plan with postclosure maintenance. Some of the contents, such as the design plan, construction specifications, and environmental control systems, provide sufficient technical analysis to demonstrate that the design would not cause any significant nuisance or threat to public health and safety (Appendix D Master Facility Plan Approval).

3.6.2 Impacts of Proposed Action

The Proposed Action would have no impact on the generation of hazardous materials in the project area. During construction it is possible there may be spills of fuel, lubricants, and/or antifreeze that would require clean-up and proper disposal. A designated parking site for recreation users on the private property would contain a waste disposal container for users of BLM-administered land. It is possible that this would help to reduce illegal dumping and excessive trash on Arizona State Trust and BLM-administered lands. The SBMRLF Operator would be responsible for litter control on Cottonwood Canyon Road. The SBMRLF would adhere to Federal MSWLF standards, therefore generation of hazardous materials from the landfill are not expected.

3.6.3 Impacts of No Action Alternative

Under the No Action Alternative the current conditions would not change. Use of the adjacent lands would continue; this would include continued illegal dumping, disposal of trash, and ammunition debris. The private property would continue to operate as a private commercial mining and extraction operation.

3.6.4 Cumulative Impacts

The cumulative impacts analysis area for this resource is the White Canyon RCA. No cumulative impacts are anticipated to occur as a result of project activities. Project controls for both the roadway project and the landfill would be implemented to ensure hazardous materials would not impact the groundwater or wildlife. Other projects in the White Canyon RCA include the Ray Land Exchange and the Ripsey Wash project. Mining activities associated with these projects have the potential to include hazardous materials and would be permitted accordingly by the appropriate state and federal agencies.

3.6.5 Mitigation Measures

- Special wastes such as used oil generated by work vehicles shall be handled according to BMPs and disposed of off-site in compliance with applicable law (40 CFR Part 279, Standards for the Management of Used Oil, 40 CFR Part 262, Standards Applicable to Generators of Hazardous Waste). While hazardous wastes created directly from the construction project are expected to be minimal, any waste produced from construction would be handled in accordance with FP-03 Section 107.01, 107.08, 107.10 (Federal Projects Standards Specifications 2003).
- Wastes found on-site would be evaluated by an environmental professional (who meets the following criteria: minimum five years experience, a 40 hr HAZWOPER certificate, and a B.S in Physical Science), before they are handled, moved, or buried. The professional would recommend a course of action regarding any hazardous wastes identified on-site, including use of proper personal protective equipment to protect workers from known or suspected material hazards in their work environment.

3.7 Water Quality

3.7.1 Affected Environment

There is no published surface water quality data for the unnamed washes in the project vicinity or for Cottonwood Canyon Wash. Typically the water quality of mountain front streams is primarily determined by natural factors, such as chemical weathering of rocks and soils, affected by the dissolution and transportation of surficial material, biological activity in soils and precipitating amounts. The unnamed desert washes flow naturally within the project vicinity. They cross the road in numerous locations carrying and depositing sand, dirt, and silt from the project vicinity and the road into downstream washes and streams. Within the mining site, historic mining activities have affected drainage patterns and altered original flow paths,

velocities, and discharge characteristics. Currently the remnants of one ephemeral wash flow through the private parcel.

3.7.2 Impacts of Proposed Action

Impacts to water quality that have the potential to occur during construction would be minimized and mitigated through SWPPP BMPs and they would be minor and temporary. Due to the improvements to the road, which include drainage and wash crossing mitigation, water quality may improve as the drainage channels, dip crossings, CMPs, and RCBCs may facilitate movement of water and lessen the amount of silt, debris, and sand that typically is washed across the road and downstream.

The development of the road would allow for the development of the landfill site.

A site groundwater monitoring plan (GWMP) has been prepared in accordance with the requirements specified in the CFR 40, part 258, subpart E-Groundwater Monitoring and Corrective Action, and was a condition of approval of the SWFP (Chapter 10 Solid Waste Facility Plan Application, Silver Bar Mine Regional Landfill). The GWMP is based on information compiled during characterization of the site geology and hydrogeology by Hoque and Associates. The GWMP describes the proposed groundwater monitoring network, field and laboratory procedures for monitoring groundwater at SBMRLF and reporting protocols. As part of the GWMP, groundwater monitoring would be performed to determine the site-specific groundwater flow direction and gradient and to characterize background groundwater quality *before* waste is placed into the landfill units. The groundwater monitoring system is designed to identify environmental impacts associated with the landfill before operations begin. Groundwater monitoring would be conducted in accordance with the GWMP for a minimum of two years in the beginning of operations of the landfill, after which the landfill may request a suspension or reduction in monitoring, consistent with ADEQ requirements.

The groundwater-monitoring network would be composed of at least three monitoring wells during the operational life of the SBMRLF. The first well would be an up-gradient well and the other two would be down-gradient wells located within 150 meters of the waste management unit (WMU). As SBMRLF is developed, the groundwatering-monitoring well network would expand to include existing monitoring wells as well as new wells yet to be constructed. Locations of the existing two groundwater supply wells and eight piezometers/monitoring wells are shown in Appendix K of the SWFP application.

Water levels and groundwater quality would be monitored on a semi-annual basis (summer and winter) during the detection monitoring phase. Groundwater monitoring methods and procedures are included in the approved 2009 SWFP for the SBMRLF.

The stormwater discharge from the SBMRLF would require two permits, one for construction-related activities and one for multi-sector general permit (MSGP) discharges. The owners of the landfill would apply for all appropriate permits according to the Arizona Revised Statutes and any appropriate federal requirements. To obtain authorization for discharges of stormwater associated with construction activity, the operator must comply with all the requirements of the

general permit and submit a notice of intent (NOI) in accordance with Part II of the general permit. The NOI would be submitted for BLM review. A site specific SWPPP meeting the requirements under Section L of the MSGP, or other applicable regulatory protocols, would be developed prior to the first acceptance of solid waste at the facility and filing of a NOI.

Portions of the SBMRLF site would lie below the current groundwater levels. Engineering design plans for the SBMRLF have been developed to meet the ADEQ requirements (1996) for Arizona landfills. ADEQ requires submittal of design specifications for materials and installation/ construction methods for several elements of the landfill design including drainage features. A landfill with groundwater inflow, such as SBMRLF, is referred to as having an “inward gradient.” The net effect of an inward gradient condition is that the leachate system collects some groundwater in addition to leachate, but the potential to impact groundwater is minimized. In order to demonstrate that insignificant amounts of leachate would be generated from the landfill, a Hydrologic Evaluation for Landfill Performance (HELP) modeling was completed as part of the SWFP (Appendix P1 of the SWFP). The HELP modeled the liner system and the underdrain system to determine the amount of “inflow” of groundwater into the leachate system. The HELP-3 modeling indicated that about 0.1 gallons per acre per day (once referred to as “de minimus” by the EPA) could infiltrate through the base liner system during the first stage of landfilling. Additional HELP calculations show that the leakage rate is equal to or less than 1 inch of leachate over a 50-year period that would leak into the void space of the underlying soil and rocks.

Monitoring of water quality and impacts to water quantity can be obtained through the piezometers and the onsite well. As groundwater filtrates beneath the liner system, the water would be collected and evaluated for any significant leachate leaks.

A closure and post-closure care (CPC) phase must be conducted for 30 years 40 CFR 258.60(E). The CPC for SBMRLF would begin after the last receipt of the waste in a particular “cell”. The first cell is not expected to go in to closure until after 10 years of operation. The overall life of the SBMRLF is 50 years. The following are some of the expected CPC activities that would be performed on the closed portions of the SBMRLF relative to water resources:

- Groundwater monitoring in accordance with §258.70
- Maintaining and operating the leachate collection system in accordance with the requirements of §258.40
- Maintenance of storm water channels and basins
- Landfill Gas monitoring at perimeter probes

The design of the base liner system, the leachate collection and recovery system and the underdrain system would be engineered to have minimal impact on water quality in the project vicinity. The preoperational GWMP and the CPC would ensure that the impacts of the landfill operations on water quality in the project area are eliminated.

A Clean Water Act Section 404 permit Preliminary Jurisdictional Determination has been submitted to the U.S. Army Corps of Engineers for all wash crossings within the project limits. An individual permit would be secured for the landfill site before it can become operational.

3.7.3 Impacts of No Action Alternative

Under the No Action Alternative the current conditions of water quality would not change. The road and drainage improvements would not occur and the landfill would not be developed. Storm events would continue to move through the area unmanaged, resulting in the continued transport and deposit of silt, sand, and debris into waterways and washes.

3.7.4 Cumulative Impacts

The cumulative effects analysis area includes the Middle Gila Watershed. No permanent impacts to water quality are expected to occur associated with project activities; therefore, no cumulative impacts are expected.

3.7.5 Mitigation Measures

- Design of drainage systems to reduce stormwater velocity and erosion in drainage channels which would result in negligible-to-minor, long-term adverse effects and implementation of the construction contractor's Storm Water Pollution Prevention Plan (SWPPP).
- Implementation of mandatory sediment and erosion-control measures during and after construction would result in avoidance of excessively drained soils on lower benches adjacent to natural drainages. These include but are not limited to silt fence/waddle placement and mulch cover, hydroseeding, and rock check dams, graveled ingress/egress.
- The contractor shall submit the National Pollutant Discharge Elimination System (NPDES) Permit Notice of Intent to the EPA only after the SWPPP has been prepared, reviewed by BLM and is ready for implementation. The Notice of Termination will be submitted to the EPA upon the project's completion.
- No work shall occur within Jurisdictional Waters of the U.S. until the appropriate CWA Section 401 and 404 permits are obtained.
- The contractor shall comply with all terms and conditions of the Section 404 Nationwide Permit No. 12 and 14 as established by the U.S. Army Corps of Engineers, and conditions of the Section 401 Individual Water Quality Certification, certified by the EPA.

3.8 Invasive and Non Native Weeds

3.8.1 Affected Environment

The Arizona Department of Agriculture (AZDA) has 54 noxious weeds designated as Prohibited, with 9 of the 54 included on the Regulated list, and another 16 listed as Restricted. Prohibited weeds are prohibited from entry into the state, while Regulated weeds are regulated and if found within the state *may* be controlled or quarantined to prevent further infestation or contamination. Restricted noxious weeds *shall* be quarantined, if found within the state.

One noxious weed listed as Regulated by AZDA, puncturevine (*Tribulus terrestris*), was observed within a large unvegetated area near the central portion of the project limits. This

unvegetated area exhibits extensive signs of disturbance due to OHV and other recreational use. Mitigation measures, such as vehicle washing, are recommended to prevent the spread of this species.

3.8.2 Impacts of Proposed Action

Under the Proposed Action, construction of the roadway improvements to Cottonwood Canyon Road may increase the potential for introduction and/or spread of invasive plants and noxious weeds; however, due to the small amount of new ground disturbance for the project this impact would be minimal. Also, the County's BMPs concerning such species would minimize the spread of weeds in the project area.

The proposed project would be constructed in order to provide access to the SBMRLF; therefore, these two projects are interrelated and interdependent. The potential for the introduction of weed seed by landfill traffic and activities can be reduced through vehicle washes, use of authorized fill materials and use of on-site excavation materials and stockpiles. The SWFP describes the procedure for waste compaction, and spreading of the daily cover (Section 6.1.2 Disposal Methods, SWFP). The daily cover soils, if used, would be obtained from on-site excavation and stockpiles or from off-site sources.

3.8.3 No Action Alternative

Under the No Action Alternative the current conditions would remain as is, and no increase in the spread or introduction of noxious weeds would occur.

3.8.4 Cumulative Impacts

The geographic area of analysis is the White Canyon RCA. Only a limited potential for the introduction and/or spread of noxious weeds would occur from project activities. Other future activities in the White Canyon RCA, such as the Ray Land Exchange and Ripsey Wash project, would be required to adhere to the same BMPs and therefore would also have very limited potential for noxious weed introduction or spread. Because of the limited potential, cumulative impacts are not expected.

3.8.5 Mitigation Measures

- Vehicle washing prior to entering and exiting the project limits is recommended to prevent the spread of puncturevine, a noxious weed.

3.9 Rangeland Health Standards

3.9.1 Affected Environment

Two allotments cover the project area. The Nichols allotment covers State Trust land and the LEN allotment covers the BLM project area (Figure 12. Grazing Allotment Map). On May 19, 2005 a BLM Interdisciplinary Team evaluated the LEN allotment. The indicator summary shows

that soil/site stability, biotic integrity, and watershed function have had a slight to moderate departure from the ecological site reference area. The ID team observed a large amount of dead Triangle Bursage which was determined to be due to drought. The use on Jojoba was noted as moderate to heavy. The BLM set up and read a monitoring Key Area (KA) on March 16, 2011 and the KA would be read again in 2014. The KA would need to be read several more times to be able to identify a trend.

ASLD Resource Management Plans for grazing leases include conducting rangeland monitoring; conducting clearances on range improvement and land treatment projects to prevent or mitigate the impacts of these projects on protected plant, wildlife, and cultural resources; and coordinating efforts with federal and private land managers.

A rangeland review of the two allotments was last completed in 1999 by ASLD. The Nichols Ranch allotment has not been fully utilized in the past six years because of the ongoing dry periods and lack of forage.

3.9.2 Impacts of Proposed Action

The proposed action would have no change to use of State Trust lands adjacent to Cottonwood Canyon Road. The road improvements to Cottonwood Canyon Road may have a varied impact on water flow over various sections of Cottonwood Canyon Road. The design and drainage of the road may facilitate surface flows over the semi impervious road material onto the vegetation adjacent to Cottonwood Canyon Road. This may lead to a minor improvement on vegetative rangeland conditions adjacent to the road. Unrestricted and unauthorized vehicular use would continue on State Trust and BLM-administered land. However the design of drainage areas may result in access to adjacent areas being restricted; this may result in a reduction of unauthorized access onto adjacent lands, a possible reduction in degradation of vegetative resources, and an improvement in some areas of rangeland conditions. The width of the road would be extended outside the existing road prism. The Proposed Action would result in the removal of 21 acres of vegetation. The majority of the vegetation near the road has been disturbed and is not high quality rangeland grazing vegetation. The removal of vegetation would have a minimum impact on rangeland conditions.

3.9.3 Impacts of No Action Alternative

Under the No Action Alternative the current rangeland conditions would not change. Access and therefore management of rangelands on State Trust and BLM-administered land would be unchanged. Unrestricted access and unauthorized vehicular use would continue on State Trust and BLM-administered land. This creates a degradation of vegetative resources and therefore leads to a negative impact on rangeland conditions. The existing pervious dirt road can create a barrier to uninhibited surface flow in some areas of Cottonwood Canyon Road. If no improvements are made to facilitate unrestricted flow in these areas, rangeland (vegetative) conditions south of Cottonwood Canyon Road would deteriorate.

3.9.3 Cumulative Impacts

The geographic area for cumulative impacts is the access road corridor, the areas adjacent to the State Trust lands, and the White Canyon RCA. The continued unauthorized access to State Trust and BLM-administered land would have a minor negative cumulative effect on rangeland conditions, specifically vegetative conditions. Due to growth and population projections, there is expected to be an increase in demand for public lands in northeastern Pinal County and specifically the White Canyon RCA. The increase in access and vehicular, non-vehicular, and recreational use would have an impact on the vegetative conditions of rangeland which is being managed for multiple uses. Cumulative impacts from the increase in recreational traffic would result in a moderate change to rangeland conditions.

3.10 Migratory Bird Treaty Act

3.10.1 Affected Environment

The Migratory Bird Treaty Act of 1918 (MBTA; 16 U.S.C. 703-712) prohibits taking (i.e., harming, harassing, or pursuing), killing, possessing, transporting, or importing migratory birds, their eggs, parts, and nests except when specifically authorized by the U.S. Department of the Interior. Migratory birds that may be affected by this project include those that nest within Arizona Upland and Lower Colorado River desertscrub as well as those that utilize desert wash vegetation. Much of the project area consists of existing dirt roadways; however, several nesting bird species were observed using the desertscrub found within the project limits.

3.10.2 Impacts of Proposed Action

Migratory bird species nesting within the project limits may directly impacted by ground disturbance and/or vegetation clearance during construction. In addition, species may experience temporary increased noise associated with construction activities.

Construction of the Silver Bar Mine Regional Landfill (SBMRLF), which is contingent upon the proposed action, would result in the destruction of nesting substrate for migratory birds primarily within the areas of undisturbed desert scrub. Additionally, operation of the SBMRLF may result in collection of water that may attract migratory birds. Consumption of contaminated water could result in direct impacts to avian species. Therefore, the following conservation measures for MBTA species shall be implemented:

- Clearing and grubbing and access road construction shall be conducted September 1 through February 28, generally outside of the breeding season for desert nesting birds, to the extent possible.
- Ponding of water caused by project activities within the SBMLRF parcel would be prevented to the maximum extent possible.

3.10.3 Impacts of No Action Alternative

Under this alternative no improvements would be made to the road and the existing conditions for migratory birds would remain the same.

3.10.4 Cumulative Impacts

Up to 17,643 acres of migratory bird habitat could be affected by the Ray Land Exchange and the Ripsey Wash Project. Affected areas include lands adjacent to the Gila River and along Ripsey Wash that may provide habitat for a greater diversity of species than nearby desert lands. The habitat that the Proposed Action would affect is not of an exceptional quality as compared to those lands which surround it and much of the parcel slated for development for the SBMLRF has been degraded by previous activity. Therefore, the combined actions associated with the Ray Land Exchange, the Ripsey Wash Project, and this Proposed Action are likely to result in some cumulative effects to migratory birds.

3.10.5 Mitigation Measures

- Clearing and grubbing and access road construction shall be conducted September 1 through February 28, generally outside of the breeding season for desert nesting birds, to the extent possible.
- Ponding of water caused by project activities within the SBMLRF parcel would be prevented to the maximum extent possible.

3.11 Recreation

3.11.1 Affected Environment

Regional Setting

Cottonwood Canyon Road, Mineral Mountain Road, and Price Road are three connected public land access routes that provide access to a variety of outdoor recreational opportunities on public lands in the project area. The recreational settings along these routes range from ‘Roaded Natural’ to ‘Semi-Primitive Motorized’ due to the extensive network of motorized travel routes, and largely undeveloped landscape. ‘Semi-Primitive Non-Motorized’, and ‘Primitive’ settings are also found in the general area, particularly in the remote mountains and canyons east of Mineral Mountain and the White Canyon Wilderness Area. Much of the recreational demand originates in the Phoenix metropolitan area and nearby communities, and access to the area is via SR 79 and US 60 as shown on Figure 14. Due to its location in the Sonoran Desert, recreation opportunities in the project area attract visitors and winter residents from other states.

Recreational Opportunity Setting

The recreational opportunity settings in the project area are generally characterized as Roaded Natural along the highway and improved roads, and as Semi-Primitive Motorized along the primitive roads according to the Recreation Opportunity Spectrum (ROS) classification system. The ROS system is used by the BLM to inventory and evaluate the landscapes’ physical setting, recreational activities, and types of experiences available to visitors. The ROS classes are also

used by the BLM to identify recreation management objectives in land use plans to help manage recreational resources and uses on public lands.

The Cottonwood Canyon Road project corridor between SR79 and the proposed landfill is characterized by a 'Roaded Natural' ROS class. 'Roaded Natural' areas provide opportunities to affiliate with other groups or to be isolated from the sights and sounds of other people and land use developments. The landscape in these areas is generally natural, but modifications are moderately evident. Concentration of users is low to moderate, but facilities for group activities may be present. Opportunities for challenge and risk are generally not important in these areas. Opportunities for both motorized and non-motorized activities are present. Construction standards and facility design incorporate conventional motorized uses, including access by passenger car, motor homes and recreational vehicle campers, and similar vehicles that require improved access. The Cottonwood Canyon Road corridor is characterized by this class due to the maintained road which provides access by passenger car, motor home, and large RV; the presence of a number of existing large roadside turnouts where concentrations of motor home camping, staging areas for trail riding (loading and unloading trailers towing OHVs), and the relatively high traffic volume on the road, and the relatively low influence of existing developments on the landscape (ranching improvements, mineral materials quarry and utilities).

The Cottonwood Canyon road corridor east of the proposed improvement project, and along other primitive roads in the area, is characterized by a Semi-Primitive Motorized ROS class. 'Semi-Primitive Motorized' areas provide some opportunities for isolation from man-made sights, sounds, and management controls. The landscape in these areas is in a predominantly unmodified environment, but small scale developments related to multiple use activities may be encountered (mineral exploration, ranching, dispersed recreation sites). Opportunities to have a high degree of interaction with the natural environment, and to have moderate challenge and risk and to use outdoor skills is important to visitors. Concentration of visitors is relatively low, but evidence of other area users is present. On-site managerial controls are subtle, and management presence is generally light. Facilities are provided primarily for resource protection and the safety of users. Motorized use is present, but access is limited by the condition of infrequently maintained primitive roads (narrow travelway, rough surface, steep grades, narrow clearance) and is typically associated with high clearance vehicles (light trucks, 4WD trucks/SUVs, OHVs, UTVs, and trail motorcycle) that can maneuver the access routes. Public lands along Cottonwood Canyon road east of the proposed road improvements to the Silverbar landfill are characterized by this ROS class due to the infrequently maintained primitive roads which restrict access by street vehicles. Parking turnouts used for camping or day use are very small and widely spaced, and concentrations of visitors are limited to traffic on the road. Due to primitive road conditions, the area east of the road improvement project is not generally accessible to motor home and passenger car vehicle types.

Recreation management of public lands in the project area is under Extensive Recreation Management objectives, with management actions primarily aimed at protecting resources from damage by public recreational use, protecting public safety, and minimizing conflicts with other uses of the public lands. Due to the popularity of the area for OHV riding, a travel and transportation management plan was developed for the area to identify the system of existing

roads and trails available for public use, including special extreme OHV trails important for skill and technical driving.

BLM lands are available for public recreational use subject to public land regulations at 43 CFR 8360 and 43 CFR 8340.

Public recreational use of State Trust lands for uses other than hunting or fishing requires a recreational permit from the Arizona State Land Department.

Recreational Sites and Activity Areas

There are several existing off road parking turnouts on State Trust lands and BLM lands along Cottonwood Canyon road that are used for day parking and OHV staging activities, and overnight camping by recreational visitors. The existing sites vary in size from under an acre, to over 20 acres in size, and vary in capacity from a few vehicles to over 200 vehicles at one time. The sites are not developed or improved, except the site at the intersection of Cottonwood Canyon Road and SR79, which is approximately 0.8 acres, with a capacity of approximately 20 vehicles, an informational kiosk/bulletin board, and post and log barriers around the perimeter of the parking area. The large sites between the highway and the BLM lands consist of cleared flat ground with natural soil driveways and parking spaces, and several of the sites were originally created for military training exercises by the Arizona National Guard Florence Military Reservation in Florence under a lease issued by the State Land Department. The existing off road parking, camping and staging areas are shown on Figure 14. Some of these parking areas were established by authorized land use activities (Florence Military Range field training operations, mining), and are opportunistically used by recreational visitors. Some of the parking areas were established by recreational users at road intersections and natural openings and clearings. Because the existing parking areas and sites are defined by natural barriers (steep banks, dense vegetation), and some are open areas with little boundary definition, a conservative estimate of the combined one time use capacity of the existing parking sites along Cottonwood Canyon Road is approximately 1,000 vehicles including sites on BLM and State Trust land. Especially during weekends, these sites are popular for OHV trailer staging activities, motor home and RV camping. Per Arizona State Land Department, pursuant to Arizona Revised Statute 17-454; R12-53D the existing off road parking areas and sites on State Trust land along Cottonwood Canyon Road are not officially recognized or authorized for public use, although some of the users may be State Recreational Permit holders. Because the parking area at the SR79 intersection is the first parking area encountered by visitors, its capacity is reached at times, and visitors continue east and park at other accessible turnouts along the road, spreading out use.

An existing portal site is provided at the BLM public land entrance along Cottonwood Canyon road. The BLM portal site is about 0.8 acres in size, and consists of a small parking area with a capacity of approximately 10 to 15 vehicles, and an informational kiosk/bulletin board. Two small unimproved parking turnouts are found along the section of Cottonwood Canyon road on public lands east of the portal site. These sites can accommodate 3 to 5 vehicles at one time, and are used for camping and staging activities by small vehicles. .

Recreational Activities and Use

Recreational activities visitors engage in are typical of undeveloped dispersed lands and include sightseeing (natural, historic, and wildlife), driving for pleasure and development of OHV driving skills on primitive, back country roads, using a variety of OHVs (all terrain vehicles, utility vehicles, 4WD light truck, trail motorcycles and modified extreme 4WD vehicles), recreational target shooting, hunting, camping, and hiking. The area receives light equestrian, mountain biking, and hiking use.

A recreation permit is required to camp, hike or travel on State Trust land that is designated as open for recreation under Arizona State Land Department (ASLD) rules and regulations. The recreation permits generate revenue for the ASLD, and allow limited recreational use subject to permit terms and conditions which promote responsible behavior. Recreational use does not meet the agency's primary mandate of providing financial benefit for the beneficiaries. Nonetheless, recreational activities similar to those on BLM-administered land do occur on the State Trust land adjacent to Cottonwood Canyon Road.

Recreational use estimates for public lands in the area are based on BLM monitoring of traffic entering and leaving the project area via Cottonwood Canyon Road and other public land access routes. Monitoring data for Cottonwood Canyon Road from 2003 to 2014 indicates an annual visitation over the past 11 years of approximately 38,000 visits. Visitation during this period has fluctuated annually, with an increasing trend from approx. 25,000 visits in 2003, to approx. 35,000 in 2014.

Visitation entering and leaving public lands in the area occurs year round, but fluctuates annually depending on the time of year, with the highest number of visitors in the late fall through the spring, influenced by favorable climatic conditions and the influx of winter visitors in southern Arizona. Visitation occurs throughout the week, but varies depending on the day of the week, with the highest volume occurring during the weekend days. Visitation occurs throughout the day, but varies depending on the time of day, with the majority of the use occurring between mid-morning and mid-afternoon hours.

3.11.2 Impacts of Proposed Action

The Proposed Action would improve and maintain the road conditions on Cottonwood Canyon Road for landfill haul truck traffic and make the road more reliable for use by road and street vehicles used by recreational visitors (motor homes, trailer towing combination vehicles, low clearance vehicles including passenger car). The road improvements combined with the safety improvements at the intersection is likely to attract an increase in recreational use of the road and roadside recreation activity areas along the road.

The character of the recreational setting along Cottonwood Canyon Road would remain Roaded Natural with improved accessibility. The character of the setting along Cottonwood Canyon Road on BLM land would shift slightly from its Semi-Primitive Motorized setting towards Roaded Natural due to the greater accessibility of the road, and landscape changes and increased activity related to the proposed land fill operations.

The existing parking and staging area at the SR 79 and Cottonwood Canyon intersection will be eliminated, displacing parking for approximately 20 vehicles to other parking and staging areas

east of the entrance. Access to informal parking areas, including the existing large turnouts (at the former National Guard training sites) may be disrupted by ditch construction and maintenance and limit access by motor homes and trailer towing vehicles.

The existing portal site at the BLM land entrance would become unusable for portal parking and staging purposes due to encroachment into the parking area from road improvements, and would be eliminated for safety reasons. Access to the other existing parking turnouts along the road between the public land entrance and the Sandman Road turnoff would be lost due to new fencing constructed along both sides of the road on BLM land for resource protection purposes as part of the road improvement project, displacing parking for about 10 to 15 vehicles and associated camping and staging opportunities at those sites.

To compensate for this loss of parking on BLM land, the BLM would consider development of a small parking area on BLM land east of Sandman road. Coordinated planning efforts among stakeholders to address recreational use and management to accommodate parking, staging and camping at designated locations to alleviate the impacts of unmanaged use would help mitigate the impacts of the proposed road improvement project on recreational use.

To alleviate some of the loss in recreation parking areas caused by the project, the Owners/Developers propose to construct a parking area on the proposed land fill property to provide for public parking and staging activities (see Figure 15 and Figure 16). The proposed parking area is approximately two acres and would accommodate 30 to 40 vehicles. The parking area would be available 24 hours a day and 7 days a week, and maintained by the private land owner. The proposed landfill parking area is located approximately ½ a mile off Cottonwood Canyon Road along Sandman Road at the gated entrance to the landfill. Due to the location of the proposed parking area, its size and the type of vehicles, and the current use patterns, it appears that this parking area would be insufficient for the current recreational users. With the loss of existing off road parking areas, recreational users are likely to create new turnouts, or enlarge existing turnouts on BLM land east of the Sandman Road intersection and potentially lead to resource damage.

Access to the existing informal unimproved parking and staging areas on State Trust land along Cottonwood Canyon Road would be lost due to the road improvements and physical barriers posed by the drainage ditches and banks, and by efforts of the State Land Department to restrict vehicle access to land adjacent to the road to prevent ongoing resource damage from OHV use. Displaced users on State Trust lands are likely to create new turnouts on flat open ground areas along the road, potentially creating new ground disturbance and potential impacts on soils and vegetation and other resources. The improved road and reasonably foreseeable loss of parking areas would cause recreational visitors to continue farther east on the road searching for parking areas, and would likely increase demand for parking on BLM lands along the road east of the Sandman Road intersection.

Disruption of access to parking and staging areas along Cottonwood Canyon Road over time, and temporary closures during project construction, will displace users to other public land access routes. Due to the origin of visitors and the location of attractions on public lands in the project area, Mineral Mountain Road and Price road are likely to receive the displaced traffic.

Existing unimproved parking areas used for staging and camping activities along these routes would receive additional use, and may lead to widening or expansion of the areas, and a potential increase in impacts on resources. Figure 14 shows the existing parking areas along the public land access routes affected by the proposed road ROW and improvement project.

The road improvements would result in safer traffic conditions for recreational users; however, truck traffic associated with the SMBRLF would increase. It is possible that recreational vehicle conflicts could increase due to an increase of commercial landfill traffic on both Sandman and Cottonwood Canyon Road. The ingress/egress to the parking area would present safety concerns to users encountering landfill haul truck traffic. OHVs traveling to and from the new proposed parking area may result in greater safety risk due to the mixed use of OHVs and truck traffic from the SMBRLF. The owners, developers, and the County would provide proper traffic signage to alleviate those safety risks. However, since the majority of municipal waste is collected during the week, vehicle conflicts on the weekends when recreational use is at its highest would be reduced.

Temporary disruption of recreational access and use along Cottonwood Canyon Road would occur during project construction. Recreational access would be detoured as needed to other public land access routes. When detours are necessary, displaced users are likely to use Mineral Mountain Road due to its location relative to the origin of users visiting the area from the Phoenix metropolitan area, potentially causing impacts to existing parking areas and staging areas along this road.

3.11.3 Impacts of No Action Alternative

Under the No Action Alternative, the BLM would not grant SBMRLF the ROW grant. The ASLD has already granted SBMRLF a ROW authorization over State Trust lands. Therefore under the No Action Alternative, SBMRLF would only implement road improvement construction on the State Land portion of the Cottonwood Canyon Road.

The existing recreational settings in the project area would continue on BLM land, with Cottonwood Canyon Road generally remaining in its present condition, substandard for the anticipated landfill haul truck traffic, but passable by the types of vehicles used by recreational visitors.

It is reasonably foreseeable that efforts by the ASLD to reduce impacts of recreational use on State Trust land along Cottonwood Canyon Road would continue, and to the State Land Department could take measures to restrict access to informal off road parking and staging areas. When that occurs, users would be displaced to public lands east of the State Trust lands, and onto other State Trust and public land along Mineral Mountain Road, Price Road, and other access routes in the project area.

3.11.4 Cumulative Impacts

The geographic area for cumulative impacts is the Middle Gila Canyon Travel Management area, and particularly the northwest portion of the TMA due to the characteristics of the local network

of roads and primitive roads, and public attractions. The road improvements would improve access for recreational visitors, particularly those using the larger vehicle types (motor homes, trailer towing vehicles) and passenger cars. However, the availability of off road parking and staging areas along the road on State Trust lands would be reduced due to loss of physical access to existing parking areas caused by the road improvements, ditches and banks, and the lack of planned driveways and parking areas in the project design. Demand for off road parking and staging areas for displaced users will continue, and use would likely increase on the public lands along Cottonwood Canyon road as visitors are able to drive farther on an improved road, leading to potential impacts east of the Sandman Road intersection from increased use at existing parking turnouts, and potential creation of new unauthorized parking areas by users.

It is reasonably foreseeable that efforts by the ASLD to reduce impacts of off road recreational use on State Trust land along Cottonwood Canyon Road would continue, and over time access will be blocked to existing off road parking and staging areas. When that occurs, users would be displaced to public lands east of the State Trust lands along Cottonwood Canyon Road, and onto other State Trust and public land along Mineral Mountain Road, Price Road, and other access routes in the project area.

Safety concerns with mixed recreational OHV use on Cottonwood Canyon road would likely increase after the road improvements due to greater truck traffic, and growing OHV use of the road. Current mixed traffic on the road has led to establishment of parallel trails by users along the road to carry OHV traffic off the main road.

Two foreseeable projects in or near the TMA are likely to cause loss of recreational opportunities in the TMA. The Ray Land Exchange would cause the loss of public use on some public land that would become part of the Ray Mine operations on Copper Butte. The Ray Mine's Ripsey Wash Mine Tailings Storage Facility project would cause the loss of public recreational use on the portions of State Trust land that would become private property.

The cumulative impacts of those projects and the proposed road improvement project include a loss in recreation opportunities due to loss of public access or public land base, and a change in the character of the recreational setting due to landscape modifications caused by the landfill, and increased mining activity.

Because Cottonwood Canyon Road would be maintained by Pinal County following the improvements, users would be required to comply with State regulations requiring 'street legal' vehicles, and unlicensed vehicles would be prohibited.

3.11.5 Mitigation Measures

- The ROW holder will contribute funding to construct a small parking area on BLM land to compensate the lost of the existing BLM parking area and kiosk site.

3.12 Wildlife

3.12.1 Affected Environment

The project area is located within AGFD Game Management Unit 37B. This unit is bordered on the north by US 60, on the east by SR 177, and on the west by SR 79. The project area is comprised primarily of Sonoran desertscrub. Wildlife species commonly associated with this biotic community include California leaf-nosed bat (*Macrotus californicus*), coyote (*Canis latrans*), desert cottontail (*Sylvilagus audubonii*), roadrunner (*Geococcyx californianus*), mourning dove (*Zenaida macroura*), verdin (*Auriparus flaviceps*), cactus wren (*Campylorhynchus brunneicapillus*), desert iguana (*Dipsosaurus dorsalis*), and western diamondback (*Crotalus atrox*). An extensive list of commonly occurring species can be found in Brown (1994). A large number of burrows and middens were observed throughout the project limits.

Five wildlife species listed as Sensitive by the BLM have potential to occur within the project limits: golden eagle (*Aquila chrysaetos*), greater western bonneted bat (*Eumops perotis californicus*), cave myotis (*Myotis velifer*), California leaf-nosed bat (*Macrotus californicus*), and pale Townsend's big-eared bat (*Corynorhinus townsendii pallescens*). No suitable caves or mines for colonial roosting bats exist within the project limits; however, abundant roost sites occur within the adjacent mountain ranges. Therefore, BLM sensitive bat species likely utilize the project area primarily to forage for arthropod prey. Similarly, suitable golden eagle nesting habitat, cliffs and canyons, does not exist within the project area but likely exists in the nearby Mineral Mountains. The project area does contain suitably open creosotebush-bursage habitat for foraging eagles.

The Mineral Mountains have been identified by the AGFD and the BLM as a priority area for the establishment of a population of desert bighorn sheep. Based on a statewide bighorn sheep habitat analysis conducted in 2000, the Mineral Mountains were rated as the highest currently unoccupied bighorn sheep habitat. The majority of high-quality habitat is located in the White Canyon Wilderness, approximately three miles east of the project limits (AGFD, unpublished data). In 2003, an initial release of thirty desert bighorn sheep was conducted on the Battle Axe Allotment east of the project area. Three subsequent releases occurred in Box Canyon, located at the south end of the Mineral Mountains approximately three miles southeast of the project area, in 2007, 2010, and 2012 (D. Tersey, pers. comm.). The AGFD obtained radio-telemetry data for 10 of the released sheep from November 2010 through September 2012 (AGFD, unpublished data). The greatest concentrations of sheep locations occurred near Box Canyon, Picketpost Mountain, and in the Battle Axe Allotment. Bighorn sheep were shown to utilize the private SBMRLF parcel though they have not been documented within the landfill footprint. No bighorn sheep have been observed within the project limits along Cottonwood Canyon Road. Although some suitably rugged habitat occurs within the project vicinity, the majority is located in the mountains east and south of the project limits. The project limits consist of relatively flat desertscrub areas unsuitable for bighorn sheep. In addition, no water catchments or other water sources occur within the project area.

3.12.2 Impacts of Proposed Action

The Proposed Action should have limited impacts to wildlife and their habitat within the project limits due to the small amount of new ground disturbance needed to improve Cottonwood Canyon Road. Because relatively large areas of suitable foraging habitat for golden eagles and bats exist outside the project limits, impacts to these species would be negligible.

Suitable habitat occurs within the project vicinity and introduced populations of bighorn sheep are known to occur within the private SBMRLF parcel. However, suitable habitat or water sources do not occur within the project limits and no bighorn sheep have been documented west of the SBMRLF parcel (Figure 13). Therefore, bighorn sheep are unlikely to be directly impacted by project actions.

The Proposed Action would result in increased human activity and surface disturbance within the SBMRLF. The landfill would be fenced with wildlife-friendly fencing but bighorn sheep would not be excluded from the area. Consumption of potentially contaminated water collecting within the landfill could negatively impact bighorn sheep but constant human activity would likely cause bighorn sheep to avoid the landfill. Additionally, though the AGFD radio-telemetry data shows that bighorn sheep do utilize the SBMRLF parcel, sheep occur there infrequently and have not been documented within the landfill area of disturbance. The areas to the east, south, and north of the parcel experience noticeably higher levels of use. Therefore, development of the SBMRLF may impact individual desert bighorn sheep but is not likely to adversely affect the population currently residing in the vicinity of the project.

3.12.3 Impacts of No Action Alternative

Under the No Action Alternative the construction activities detailed in the Proposed Action would not occur. Potential impacts to general wildlife species from continued travel along Cottonwood Canyon Road would remain at current levels.

3.12.4 Cumulative Impacts

The cumulative impacts geographic area includes the White Canyon RCA. The majority of the Ripsey Wash project lies south of the Gila River; all records of bighorn sheep in the White Canyon RCA have occurred north of the river. The small portion of the Ripsey Wash Project that is located north of the Gila River falls just over one mile beyond the easternmost extent of the bighorn sheep utilization area. Several BLM-administered parcels that would be traded as part of the Ray Land Exchange are located within a heavily utilized portion of the Battleaxe Allotment. Bighorn sheep in this area are likely to be affected by mining activities that would require clearing of vegetation and increased human presence. High quality bighorn sheep habitat would be acquired by the BLM in the exchange, but most of the new acquisitions would be located in the central-western and northwestern portion of the state. Therefore, lost habitat would not be compensated for on a local scale. Because the SBMRLF access road project limits do not contain suitable habitat for bighorn sheep, this project would not contribute to cumulative effects to bighorn sheep. Development of the SBMRLF could result in avoidance of a small area of infrequently used bighorn sheep habitat. When compared to the much larger Ray Land Exchange, the SBMRLF's contribution to cumulative effects is negligible.

3.13 Land Use

3.13.1 Affected Environment

There are no existing BLM authorizations for ROW and land use permits on Cottonwood Canyon Road and Sandman Road. The use of Cottonwood Canyon Road on State Trust land is an unpermitted use. Legal access is needed by the Developers/Owners and Pinal County in order to develop and operate the proposed landfill. The use of the access road for the landfill is to be authorized through the issuance of a BLM ROW Grant and the purchase of State Trust land right-of-way. These conditions were stipulated in the development agreement between Pinal County and the Owners/Developers of the landfill.

On 19 December 2007, the Pinal County Board of Supervisors approved the reclassification of 449.3 acres of a 759-acre private parcel from General Rural Zone (GR) to C1-2 (Industrial Zone). A development agreement with the owners and Pinal County was also negotiated and executed on 19 December 2007. If the owner/developer of the rezoned parcel fails to meet the Schedule of Development, the Board of Supervisors can schedule a hearing to either grant an extension or cause the property to revert back to its former zoning classification of General Rural and rescind the industrial use permit. The intended use for the 449 acres is for a MSWLF. The landfill footprint would comprise 226 of the 449 acres zoned for the landfill. The remaining 223 acres would be used for setbacks, buffers, ancillary facilities, and open space. The remainder of the private parcel (310+acres) is classified as *Recreation/Conservation* in the Pinal County Comprehensive Plan.

3.13.2 Impacts of Proposed Action

The Owners/Developer and Pinal County have filed a ROW application and POD (NL Mineral Mountain, LLC, et al. 2011) with the BLM and the Arizona State Land Department for the legal access and to upgrade the existing one mile on BLM-administered land. The granting of the two ROW applications is required for the Owners/Developers to operate the SBMRLF. In addition, a BLM a temporary use ROW is required for the two TUPs. The rezoning and operation of the private parcel would not affect existing commercial or residential land uses as the project area is surrounded by land designated for recreation and conservation. The rezoning does allow Pinal County to benefit from revenues generated from the landfill operation. There are two private parcels in the surrounding area; the value of these parcels/leases would not be impacted by the issuance of a ROW grant.

3.13.3 Impacts of No Action Alternative

Under the No Action Alternative, there would be no granting of ROW access on State Trust or BLM-administered land and no road modification or drainage improvements. The SBMRLF would not have authorized access and could not meet the stipulations of the development agreement. The landfill would not proceed. The gravel operations would need to access the BLM land and the mining facility would continue to be on Cottonwood Canyon Road.

3.13.4 Cumulative Impacts

The geographic area of analysis is the Pinal County Land Use planning area, the Conceptual Planning Area for the Superstitions Vista, Arizona State Trust land, and BLM-administrated land. Currently, there are no new future developments, rezoning, or permit applications pending on BLM-administered land. No impacts to land use are expected to occur in association with the proposed project, therefore no cumulative impacts are expected.

3.14 Travel Management, Access and Transportation

3.14.1 Affected Environment

Area Designation

Public lands administered by the BLM in the project area are currently designated in accordance with public land regulations (43CFR8340) as ‘Limited’, with motorized vehicle use limited to existing roads and trails. The BLM identified the network of existing roads and trails that is available for motorized vehicle use in the Middle Gila Canyons Travel and Transportation Management Plan (TMP), completed in November 2010. The existing motorized access routes on public lands in the project area, and the public land access routes identified in the TMP are shown on Figure 14. Cottonwood Canyon Road is one of several existing routes in the northwestern part of the BLM’s Middle Gila Canyons Travel Management Area (TMA) that provide motor vehicle access from the local public highways (SR 79 and US 60) to public lands administered by the BLM for multiple uses, State Trust lands administered by the Arizona State Land Department, and private property used for ranching and mineral materials extraction.

Cottonwood Canyon Road, Mineral Mountain Road, and Price road function as the primary collectors in the existing network of primitive roads in the project area. The network provides access for general administrative purposes, authorized land uses, and public recreational use.

Type of use

Cottonwood Canyon Road is used by a variety of vehicle types related to current land use activities, including mineral materials haul trucks related to the existing quarry operations on private property on Mineral Mountain, livestock hauling trucks and light trucks related to existing cattle ranching operations, motor homes and RV camping vehicles related to public recreational use, trailer towing trucks carrying off highway vehicles (OHVs) used by recreational visitors, light trucks, and passenger cars.

Access to State Trust land is granted through a permit process (recreation, hunting, grazing, or special land use). At this time AZDEMA, the Nichols allotment and El Paso Gas are the only permitted uses on State Trust land within the project area. Unauthorized and authorized motorized and non-motorized recreational users access State Trust land through various access points, parking, and staging areas adjacent to Cottonwood Canyon Road. The creation of motorized and non-motorized trails on State Trust land has proliferated without any designated routes and authorized access points.

Amount of use

Due to its location and associated land use activity, Cottonwood Canyon Road receives the greatest amount of traffic entering and leaving public lands in the vicinity of the project area.

BLM sampling of traffic entering and leaving public lands conducted from 2003 through the spring of 2015 indicates an annual average daily traffic has increased from approximately 50 to 90 vehicles per day, with peak traffic between 200 and 300 vehicles per day. With the estimated traffic volume generated by the existing quarry operation at the proposed landfill at 10 to 15 trucks per day, the annual average daily traffic related to other activities, is between 40 and 80 vehicles, primarily related to public recreational use.

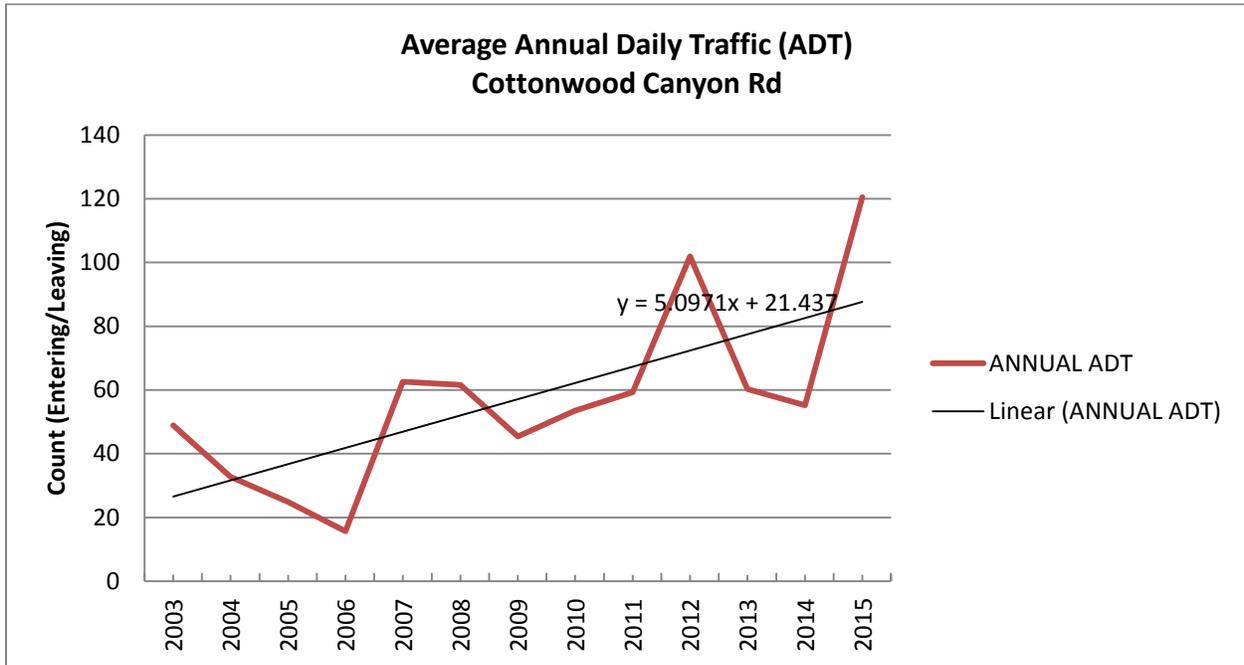


Chart 1. The graph on this chart shows an increasing annual average daily traffic entering and leaving public lands along Cottonwood Canyon Road.

The traffic pattern on Cottonwood Canyon Road varies depending on the time of year, with the majority of use occurring during the winter recreational visitor season between November and April. Chart 2 shows the pattern of traffic entering and leaving public lands during the winter season, with an increasing trend. This annual traffic pattern is primarily influenced by the increased recreational demand caused by winter visitors and seasonal residents attracted to Arizona. During the winter, use on the road occurs throughout the week, with most of the use occurring during the weekends from Friday through Sunday. Use of the road occurs at all hours of the day, but the majority occurs from mid-morning to late afternoon (09:00 AM – 5:00 PM).

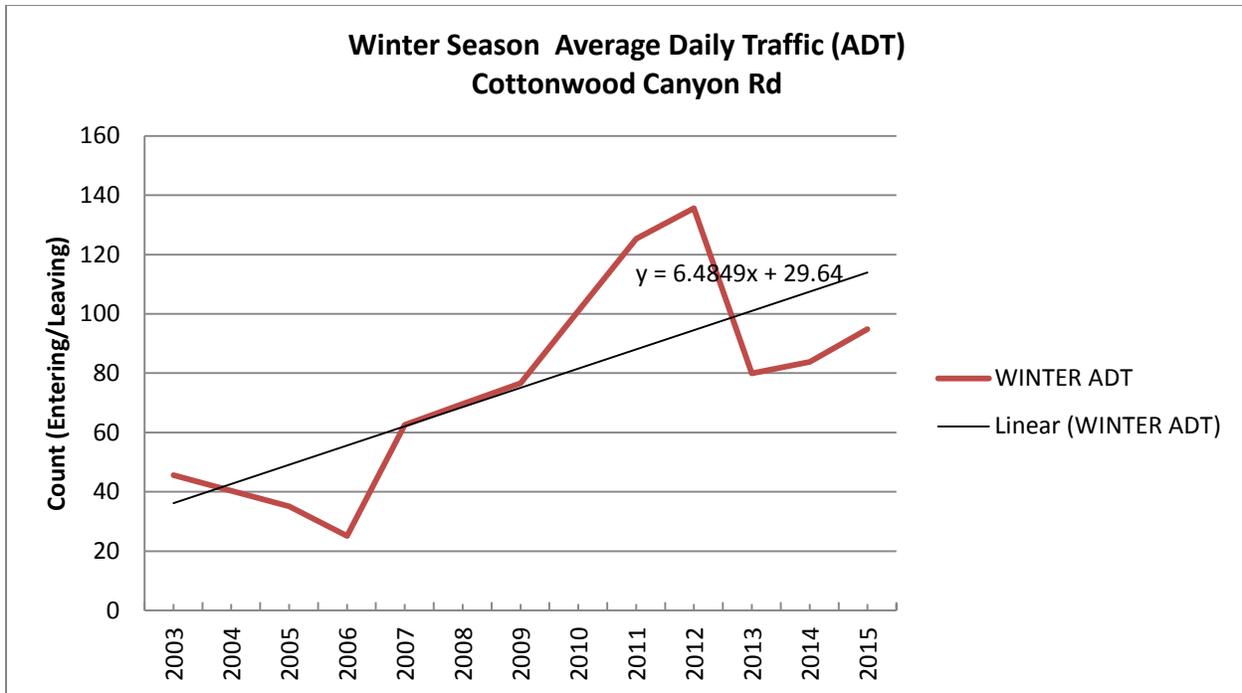


Chart 2. The graph on this chart shows an increasing traffic pattern during the winter use season, when the area receives use related to winter visitors and residents attracted to Arizona from cold regions of the country.

During the summer, recreational use of the road declines to about half of the use level during the winter and spring season. Use during the summer occurs at all hours of the day, but shifts towards the earlier hours of the day, with the majority of use occurring from 04:00 AM to 1:00 PM. As shown on Chart 3, use of the road during the summer season has also increased since 2003, though it has remained at relatively low levels compared to winter use. Recreational use in the summer is generally by local residents within a short drive of the area, leading to an overall increase in use during weekdays, and a decline during the weekend days when recreation demand shifts to destinations in the higher country of Arizona and northern states. The typical pattern of use during the summer shifts to the earlier hours of the day when daylight is available and temperatures are cooler.

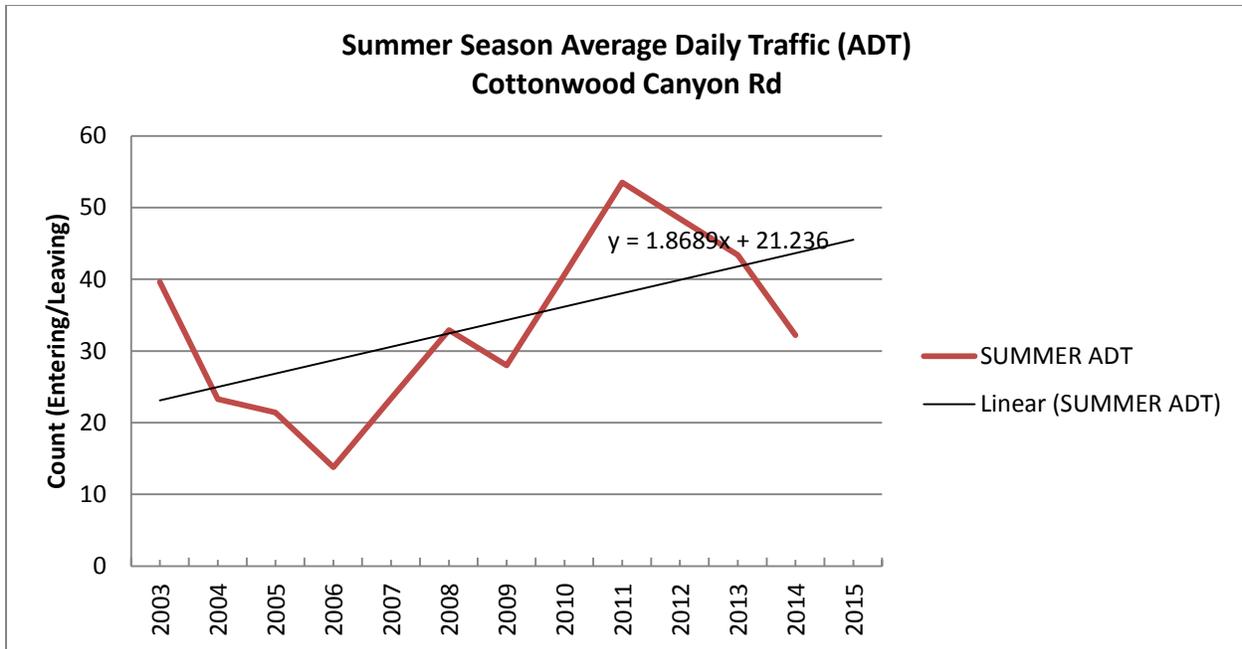


Chart 3. The graph on this chart shows the average daily traffic entering and leaving public lands along Cottonwood Canyon road during the summer.

Current Road Condition

Cottonwood Canyon road is currently unpaved, with a natural soil surface that varies in composition from silty, sandy, gravelly, and down to bedrock. In the past, the road has been maintained without authorization from the BLM, by the operators to accommodate haul truck traffic to the proposed landfill site. Just recently, the operators have ceased any type of maintenance. The road cross section is entrenched, with the travelway below the prevailing topography. The entrenched road collects surface runoff and turns into a ditch during storm events, flowing and eroding the travelway, and complicating road drainage.

Maintenance Intensity

Unauthorized grading and surfacing with sand and aggregate has taken place in the past on Cottonwood Canyon road to accommodate quarry haul truck traffic by the operators of the mineral materials quarry on Mineral Mountain. Past maintenance activities have destroyed an archeological site along the road, and erosion caused by poor drainage and grading without replacing the travelway material have exposed the soil substrate and bedrock, and widened the roadway in some areas.

In order to accommodate the existing and proposed access and transportation resulting from the Proposed Action, the following stipulations were created as a condition of the rezoning and the industrial use permit.

- After the acquisition of State Land and ROW with the BLM the design engineer would prepare plans in accordance with Pinal County Standards.
- The owner/developer of the road shall design and construct the improvements to Cottonwood Canyon Road in accordance with the development agreement. The County

would accept the road improvements to Cottonwood Canyon Road only as they adhere to the approved development agreements.

- The owner/developer of the road shall design and construct the improvements to Cottonwood Canyon Road intersection with SR 79 in accordance with the development agreement.
- All roadway and infrastructure improvements shall be in accordance with the current Pinal County standards, and as recommended by the approved traffic input analysis (TIA).
- The drainage plan shall provide retention for stormwater in a retention area owned by the property owner. The on-site drainage plan shall be in accordance with current ADEQ standards while the off-site drainage plan shall be per the current Pinal County Drainage Ordinance and Drainage Manual.
- The owner/developer, at its sole expense and cost, shall obtain Recreational Crossing Signs in a design and size approved by the County, and shall install the signs on Cottonwood Canyon Road at locations designated by the County.

The completed road and intersection improvements must be in place and complete by Opening Day of the MSWF. The TIA is attached as Appendix E.

3.14.2 Impacts of the Proposed Action

The road improvement project would temporarily cause delays to travelers on SR 79 during construction of the acceleration/deceleration lanes at the intersection with Cottonwood Canyon Road, and once completed, the intersection would be safer for traffic entering and leaving Cottonwood Canyon Road. During construction when Cottonwood Canyon Road is temporarily closed for safety reasons, displaced traffic would increase use on Mineral Mountain Road, and to a lesser extent Price Road due to the unavailability of Cottonwood Canyon Road for entering and leaving public lands. Displaced vehicles would use existing staging areas along those routes, and may cause congestion at the parking and staging areas near the road entrances.

A coordinated planning effort among stakeholders (ASLD, BLM AGFD, recreational users) to address recreational use and needs for parking, staging area and camping at or near the public land entrance would alleviate the impacts of the road improvement project on recreational use along Cottonwood Canyon Road to accommodate public use and provide visitor information for those entering back country primitive roads and trails.

The proposed road improvements and maintenance (widening and surfacing, drainage ditches, horizontal and vertical alignment, regular annual maintenance) would correct deficiencies to make the travelway suitable for truck traffic expected to be generated by the planned landfill on Mineral Mountain. The improvements would make the road safer and more reliable for truck traffic year round, and would also make the road suitable for use by motor homes, trailer towing vehicles, passenger cars, and other street vehicles which encounter limitations in the current road conditions.

At the planned landfill operational capacity of 1,000 tons, Cottonwood Canyon Road could receive approximately 36 new haul truck trips in the weekday mornings, and 36 new haul truck trips in the afternoon, during the peak hours of operation. Overall traffic generated by the landfill is estimated at 180 trips entering and leaving the landfill, with approximately 45 percent of the trips related to haul truck traffic (Source: Silver Bar Mine Regional Landfill Traffic Impact Analysis, The CK Group Inc., Phoenix, Arizona, 2007).

The estimated daily traffic generated by the planned landfill would significantly increase the overall annual daily traffic on Cottonwood Canyon Road. The average annual daily traffic on Cottonwood Canyon Road would increase by approximately 367%; the average daily traffic during the winter season would increase approximately 303%, and the average daily traffic during the summer will increase approximately 549% due to the relatively low prevailing traffic during summer months.

The traffic generated by the proposed SBMRLF would primarily consist of tractor/trailer vehicles with a gross vehicle weight of 80,000 pounds.

The increased truck traffic would present safety concerns to current recreational traffic and increase the potential conflicts among mixed users on Cottonwood Canyon Road. This could lead to recreational users creating and using parallel routes along Cottonwood Canyon road as they seek to avoid haul truck traffic.

Once the road is improved, the BLM ROW would be assigned to Pinal County pursuant to the Agreement with Pinal County and the private landowners. Cottonwood Canyon Road would become a Pinal County Road and the Owner/Developers would be responsible for the maintenance of the road and fencing.

Traffic would be controlled through the construction project area in order to maintain safe conditions for the traveling public and to ensure emergency services access.

3.14.3 No Action Alternative

Under the No Action Alternative, the landfill would not be developed and traffic on Cottonwood Canyon Road would continue at current service levels, influenced primarily by land use activity related to the existing quarry and ranching operations, and growing recreational use. Quarry haul truck traffic would continue at prevailing levels, mixed with public recreational traffic.

3.14.4 Cumulative Impacts

The proposed landfill development will affect traffic along SR 79, Cottonwood Canyon Road, Mineral Mountain Road, Price Road, and the connected network of primitive roads in the northwest part of the BLM Middle Gila Canyon Travel Management Area.

Landfill related traffic will increase truck traffic on SR79 and Cottonwood Canyon Road year round. Public recreational use will continue to be attracted to the area by its natural attractions

and recreational opportunities, and will continue utilizing SR79 and US60 to reach the public land access routes including Cottonwood Canyon Road.

The proposed road improvements on Cottonwood Canyon Road would provide a regularly maintained road, with a roadway suitable for general street vehicles and a safer ingress and egress point along SR 79, and would attract more recreational use than the existing road attracts. This would increase the pressure and demand for parking and staging areas near the highway. The increased pressure is likely to lead to higher utilization of existing BLM parking and staging areas, the may lead to impacts related to creation of new parking/staging areas by users, or expansion of existing parking areas. The increased use may lead to new impacts on soils and vegetation from new or expanded parking and staging areas, and increase the encounters with other users among road users along the road, and other public land access routes. The landfill truck traffic, and efforts by the ASLD to alleviate impacts of vehicle use on State Trust lands along the road will likely cause a displacement of use and related impacts to other public land access routes, particularly Mineral Mountain Road and Price Road.

Implementation of travel management decisions in the Middle Gila Canyons TMP could help alleviate potential impacts on BLM land caused by the proposed road improvements and landfill development. The TMP Decisions include: Visitor information efforts will help spread traffic related to public recreational use away from Cottonwood Canyon road to other public land access routes. Monitoring will detect impacts from increased use pressure, and actions will be taken to protect resources from potential impacts caused by growing demand and use on existing parking and staging areas, and primitive roads and trails. Maintenance of primitive roads will help reduce widening of roadways when they become impassable due to erosion or washouts.

3.14.5 Mitigation Measures

- Traffic control would be enacted such that traffic on SR 79 is not significantly impeded.

3.15 Visual

3.15.1 Affected Environment

According to the BLM's Phoenix District RMP/Final EIS (USDI 1988), no previous Visual Resource Management (VRM) classes have been assigned to the land located in the White Canyon Resource Conservation Area. The public lands in the project area have not been inventoried for visual resources. However, public lands in the project area are under interim VRM Class III objectives. Class III areas are defined as:

To partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

3.15.2 Impacts of Proposed Action

The slight widening of the road to accommodate drainage would not have an impact on the overall characteristics of the landscape.

A landscape visibility analysis was performed to determine the visual impact of the proposed Silver Bar Landfill on private lands on Mineral Mountain. The landfill is a connected action to the BLM ROW application for improvement of Cottonwood Canyon Road and a portion of Sandman Road for landfill access.

The visibility analysis was performed using a 1/9 arc second digital elevation model, and observer positions at approximately ¼ mile interval to characterize the visible landscape along SR79, and the landscape with views of the landfill site. Figure 17 shows the viewshed of the proposed landfill, and Figure 18 shows the visible landscape along Highway 79.

The proposed Silverbar Landfill site is visible from State Highway 79 and U.S Highway 60. The site is also visible from Cottonwood Canyon Road. The existing mineral materials quarry operation on the site is a good indicator of the landfill site location.

Visibility of the landfill is in the background viewing distance from the highways, and from the foreground-middle ground from Cottonwood Canyon Road. Visibility is limited by topographic features including mountains and hills, and mountain ridges which screen the landfill site.

The visual contrast of the proposed land fill will be influenced by the excavation activities that will remove vegetative cover, and strip the top soil, exposing sub-soils and underlying rock of lighter color. The color contrast between the undisturbed areas and the landfill disturbance is expected to be moderate to strong during landfill development, creating a noticeable line along the limits of disturbance.

Due to viewing distance in the middle ground to back ground, the landfill will be visible in the landscape, but will not attract attention or dominate the views in the scenery along the local highways. The visual impact will be greater on the views from Cottonwood Canyon due to proximity, with views within the foreground-middle ground viewing distance.

3.15.3 Impacts of No Action Alternative

Under the No Action Alternative, there would be no impacts to visual resources as the existing conditions would continue. Road maintenance would continue and it may result in incremental widening of the existing road. However this would not change the existing character of the landscape.

3.15.4 Cumulative Impacts

The geographic area of impact is Cottonwood Canyon Road corridor and the White Canyon RCA. Other activities which may occur in the White Canyon RCA (i.e., continued mining at the Asarco –Ray plant) occur independent of the Proposed Action and are located far enough away

that they are not included in this analysis. Therefore, under both alternatives there would be no cumulative impacts to visual resources.

3.16 Mineral Resources

3.16.1 Affected Environment

The Proposed Action would occur within the historic Mineral Mountain Mining District. Past mining activities within the district include numerous underground workings and small pit operations with supporting stamping and smelting operations. The private land upon which the proposed landfill would be constructed left federal ownership under mining patent.

Current mineral development in the immediate area of the Proposed Action is limited to one private mining operation located in parts of Sections 8 and 17, Township 3S, Range 11E. Mineral Mountain LLC is the owner of this parcel and the mineral rights and does not hold interest in any mineral rights outside of the private parcel. This operation is currently a quarry-type operation producing decorative rock and aggregate mine material. Extraction of minerals is restricted to the private parcel. The current total excavation capacity is 22,000,000 cubic yards per year (NL Mineral Mountain, LLC 2011).

The Reymert Mine, located five miles northeast of the Proposed Action in T2S R11E Sec 22 is an active quarry producing aggregate and decorative rock.

The Mineral Mountain District has high potential for the discovery of valuable minerals and is blanketed with mining claims. BLM routinely processes Mining Notices for minerals exploration work within the District.

The public lands in the vicinity of the proposed action are open to mineral entry under the mining laws. Active mining claims exist on the ground covered by the proposed action. Neither authorized mining plans nor active mining notices exist in the project area. .

Holders of valid, existing mining claims have rights under law. 30 U.S.C. § 612(b) states, in part:

[...]Any such mining claim shall also be subject, prior to issuance of patent therefor, to the right of the United States, its permittees, and licensees, to use so much of the surface thereof as may be necessary for such purposes or for access to adjacent land: *Provided, however,* That any use of the surface of any such mining claim by the United States, its permittees or licensees, shall be such as not to endanger or materially interfere with prospecting, mining or processing operations or uses reasonably incident thereto [...]

Mining claim monuments occur within the footprint of the proposed Right of Way.

3.16.2 Impacts of the Proposed Action

The Proposed Action would allow for the continued excavation of the site and creation of the pit for the SBMRLF. The materials excavated would be stockpiled on-site and used as fill and cover in the operation of the landfill. Approximately 20,000,000 cubic yards would be used as fill and cover for the landfill. The excavated materials from the pit are required as part of the operational procedure of the landfill. Any excess materials excavated that cannot be used as fill and cover may be transported out for sale to various markets. The construction of a landfill on patented mineral lands would likely preclude future development of any remaining valuable minerals beneath the landfill.

The proposed Right of Way grant is subject to valid, existing rights of mining claimants. If land uses authorized under the Right of Way grant are found to endanger or materially interfere with prospecting, mining, or processing operations or uses reasonably incident thereto of a mining claimant then the Right of Way grant would be modified to resolve the conflict. Modifications may include relocation of the subject access road to accommodate the mining activities of the claimants.

The proposed action does not affect claimants' access to their claims.

The proposed widening of Cottonwood Canyon Road would result in the obliteration of mining claim monuments. Mitigation for the destruction of the mining claim monuments shall be the responsibility of the Developers/Owners and would consist of the erection of a witness monument outside of the proposed right of way for each mining claim monument destroyed. Any affected mining claimant(s) shall be notified by the Developers/Owners, the BLM would provide the mining claimant contact information, of the proposed replacement of the mining claim monument(s) with witness monument(s) prior to the destruction of the original monument(s). Each witness monument would be fitted with an embossed brass or aluminum tag indicating the relative location of the original mining claim monument from the witness monument. The design and materials of witness monuments would be in conformance with Ariz. Rev. Stat. § 27-202 thru § 27-210. If pipe is used in construction of witness monument(s), the upper end of the pipe would be permanently capped to prevent bird entrapment. The description of the location of each original mining claim monument must be sufficiently detailed such that a competent surveyor would be able to re-locate the original monument based upon the inscription found on the witness monument. For each mining claim for which a witness monument(s) is erected, an affidavit describing each witness monument and its relationship to its corresponding original mining claim monument would be filed in the Pinal County Recorder's Office and with the BLM – Arizona State Office. Each affidavit would reference the corresponding mining claim by location, claim name, and serial number (AMC number). Each affected mining claimant shall be provided a copy of the affidavit(s) concerning each affected claim held by the claimant.

3.16.3 Impacts No Action Alternative

The No Action alternative would have no impact on mineral resources on BLM-administered land and would result in continued operation of the private-land quarry for decorative rock and aggregate.

3.16.4 Cumulative Impacts

The geographic area of impact is State Trust land in the project vicinity and the White Canyon RCA incorporating the Mineral Mountain Mining District. Under the Proposed Action access to mining claims and ongoing exploration activities would not be impeded. Therefore, under both alternatives there would be no cumulative impacts to federal mineral resources.

On November 15, 2014 Resolution Copper Mining, LLC, submitted a Mine Plan of Operation (MPO) to the Tonto National Forest for the construction and operation of a copper mine near Superior, AZ, approximately 13 miles from the proposed SBMRLF. Major facilities include an underground mine, concentrator, tailings storage, pipelines, filter plant, and conveyor and rail facilities. Proposed mine facilities include pipelines and well fields that would be located within six miles of the proposed SBMRLF and within three miles of the Cottonwood Canyon Road corridor with the pipelines crossing State Trust lands north of the project area. The Resolution Copper Mine, if built, can be expected to contribute to particulate emissions, regional traffic, and habitat losses to various species of approximately 5000 acres (depending on tailings storage configuration). The Resolution Copper Mine MPO has not yet been accepted as complete by the Tonto National Forest. The proposal would require a separate NEPA analysis.

3.17 Vegetation

3.17.1 Affected Environment

The project area is located within the Sonoran desertscrub biotic community. The eastern extent of the project area closest to Mineral Mountains is characterized as Arizona upland desertscrub; the western extent falls within an area characterized by the creosotebush-bursage series of the Lower Colorado River subdivision (Brown 1994). The project limits are dissected by several small desert washes characterized as Sonoran riparian scrubland. The predominant plant species found throughout the project area are characteristic of the biotic communities: yellow paloverde (*Parkinsonia microphylla*), saguaro (*Carnegiea gigantea*), chain-fruit cholla (*Cylindropuntia [Opuntia] fulgida*), triangle leaf bursage (*Ambrosia deltoidea*), prickly pear (*Opuntia* spp.), California barrel cactus (*Ferocactus cylindraceus*), hedgehog cactus (*Echinocereus* spp.), Graham's nipple cactus (*Mammillaria grahamii*), ocotillo (*Fouquieria splendens*), buckhorn cholla (*Cylindropuntia acanthocarpa*), desert senna (*Senna [Cassia] covesii*), pencil cholla (*Cylindropuntia arbuscula*), brittlebush (*Encelia farinosa*) and desertbroom (*Baccharis sarothroides*). Species occurring primarily within the desert washes include ironwood (*Olneya tesota*), velvet mesquite (*Prosopis velutina*) and canyon ragweed (*Ambrosia ambrosioides*).

Currently, the majority of Cottonwood Canyon Road runs below grade due to frequent grading. This results in interrupted sheet flow during rain events because water is funneled directly into

washes thus limiting the water available for absorption by vegetation downslope from and adjacent to the road corridor. Vegetation within portions of the project limits has been degraded by frequent OHV and other recreational vehicle use.

The proposed project would be constructed in order to provide access to the proposed SBMRLF; therefore, we have addressed the effects of the proposed landfill on vegetation as a connected action. The vegetative community found within the footprint of the landfill contains Arizona upland desertscrub similar to that found within the project limits. Bare soils directly attributable to mining activity cover approximately 100 acres of the 450-acre landfill footprint, these degraded areas are located in the approximate center of the landfill. Additional areas have been degraded by recreational vehicle use.

3.17.2 Impacts of Proposed Action

Expansion of the roadway would require removal of approximately four acres of creosotebush-bursage vegetation on Arizona State Land, 9.3 acres of Arizona upland desertscrub on Arizona State Land, and 1.9 acres of Arizona upland desertscrub on BLM-administered land. Some protected native plants such as saguaros and mesquite trees would also have to be removed. Drainage improvements that would be made along the roadway may be beneficial to the adjacent vegetation. The improved road and drainage ditches would carry water through low flow dip crossings the north to the south side of the road thereby providing more opportunities for water absorption.

Development of the SBMRLF would require removal of additional vegetation. Because most of the bare soil occurs in the center of the landfill footprint, most vegetation removal would occur in the northern and southern portions of the footprint. Approximately 350 acres of vegetation, some of which is highly disturbed, would be cleared.

Two BLM sensitive species, Pima Indian mallow (*Abutilon parishii*) and Tumamoc globeberry (*Tumamoca macdougalii*) have the potential to occur within the project limits and within the SBMRLF parcel. However, no species occurrence records exist within the project vicinity and no individuals were located during surveys for protected native plants in either the SBMRLF or the project limits. Therefore, effects of the Proposed Action and development of the SBMRLF to these species should be minimal.

Some grading and clearing of the vegetation, including saguaros and mesquite trees, in the 44 ft ROW and TUP areas is necessary for the road to be built per Pinal County design standards. Prior to any construction activities the Owners/Developers and their construction contractors are to meet with BLM representative to assess and inventory targeted vegetation. Reclamation of the vegetation would occur either by salvaging or destroying targeted vegetation or replanting the removed vegetation or replacing with new like kind vegetation. If vegetation is removed and not replaced, payment would be made to the BLM for the cost of lost vegetation. Payment would be based on the Arizona Department of Agriculture Native Plant price list. The access road would follow the existing road alignments. To accommodate the required 44 ft ROW width and the intersection improvements at Cottonwood Canyon Road and Sandman Road, including a right-hand turning lane for traffic continuing eastbound on Cottonwood Canyon Road from Sandman

Road, the proposed widening, clearing and removal of top soil would occur on the north side of the existing Cottonwood Canyon Road and the east side of the existing Sandman Road. No ground construction disturbances or vehicular traffic are to occur south of the Cottonwood Canyon Road or west of Sandman Road. Prior to construction, the Owners/Developers and their construction contractors would flag, fence or stake the areas to be expanded within the 44 foot ROW width and TUP areas to provide limits to new disturbances in the construction process or to identify any vegetation avoidance areas.

During the installation of the wildlife fence the only allowable ground disturbance south of and west of Cottonwood Road and Sandman Road will be of human foot traffic made by workers installing the fence lines.

To minimize effects to native vegetation, The Owner/Developers would notify the Arizona Department of Agriculture at least 60 days prior to the removal of vegetation on State Trust lands to afford commercial salvagers the opportunity to remove and salvage native plants which may be destroyed during project activities. For BLM lands, the first priority for salvaged native plants is for them to be used for reclamation of damaged lands on this project, and the second priority would be to use the salvaged plants for reclamation of other damaged BLM lands. If there are remaining salvaged plants that have been removed, the BLM would be reimbursed for the cost of lost vegetation based on the Arizona Department of Agriculture Native Plant price list.

3.17.3 No Action Alternative

Under the No Action alternative the current conditions would remain as is, and no vegetation would be removed during construction activities.

3.17.4 Cumulative Impacts

Up to 17,643 acres of natural vegetation could be affected by the Ray Land Exchange and the Ripsey Wash project. Affected areas include lands adjacent to the Gila River and along Ripsey Wash that may provide habitat for a greater diversity of species than nearby desert lands. When compared to these two larger actions, improvements to the SBMLRF access road and development of the SBMLRF itself would affect minimal vegetation. The habitat that the Proposed Action would affect is not of an exceptional quality as compared to those lands which surround it and much of the parcel slated for development for the SBMLRF is has been degraded by previous uses. Therefore, the combined actions associated with the Ray Land Exchange, the Ripsey Wash project, and this Proposed action are may result in some cumulative effects to vegetation but this project's contribution to cumulative effects would be negligible.

3.17.5 Mitigation

- Some grading and clearing of the vegetation in the 44 ft ROW and TUP areas is necessary for the road to be built per Pinal County design standards. Prior to any construction activities the Owners/Developers and their construction contractors are to meet with BLM representative to assess and inventory targeted vegetation. Reclamation of the vegetation would occur either by salvaging or destroying targeted vegetation or replanting the removed vegetation or replacing with new like kind vegetation. If vegetation is removed and not replaced, payment would be made to the BLM for the cost

of lost vegetation. Payment would be based on the Arizona Department of Agriculture Native Plant price list. The access road would follow the existing road alignments. To accommodate the required 44 ft ROW width and the intersection improvements at Cottonwood Canyon Road and Sandman Road, including a right-hand turning lane for traffic continuing eastbound on Cottonwood Canyon Road from Sandman Road, the proposed widening, clearing and removal of top soil would occur on the north side of the existing Cottonwood Canyon Road and the east side of the existing Sandman Road. No ground construction disturbances or vehicular traffic are to occur south of the Cottonwood Canyon Road or west of Sandman Road. Prior to construction, the Owners/Developers and their construction contractors would flag, fence or stake the areas within the 44 foot ROW width and the TUP areas to be expanded to provide limits to new disturbances in the construction process or to identify any vegetation avoidance areas.

- During the installation of the wildlife fence the only allowable ground disturbance south or and west of Cottonwood Road and Sandman Road will be of human foot traffic made by workers installing the fence lines.
- The Owner/Developers would notify the Arizona Department of Agriculture at least 60 days prior to the removal of vegetation on State Trust Lands to afford commercial salvagers the opportunity to remove and salvage native plants which may be destroyed during project activities. For BLM lands, the first priority for salvaged native plants is for them to be used for reclamation of damaged lands on this project, and the second priority would be to use the salvaged plants for reclamation of other damaged BLM lands. If there are remaining salvaged plants that have been removed, the BLM would be reimbursed for the cost of lost vegetation based on the Arizona Department of Agriculture Native Plant price list.
- The Owner/Developers will notify the Arizona Department of Agriculture at least 60 days prior to the start of any project activities to afford commercial salvagers the opportunity to remove and salvage native plants which may be destroyed during project activities.

3.18 Grazing Program

3.18.1 Affected Environment

Two grazing allotments, the LEN and the Nichols Ranch allotment, overlay the project area road and landfill. The LEN allotment is on BLM-administered land and the Nichols allotment is on State Trust land (Figure 12. Grazing Allotment Map). These allotments include existing range improvements.

The LEN allotment is an active grazing lease which covers 40,400 acres. BLM-administered lands comprise 69 percent of this allotment with the remainder being on State Trust land, and federal and private land. The LEN allotment overlays the SBMRLF. The lease allows for 357 head to be grazed year-long on the allotment. The lease is for a 10 year term, which was renewed 1 March 2005 and expires 28 February 2015.

The ASLD allotment overlaying Cottonwood Canyon Road is the Nichols Ranch. The Nichols Ranch allotment covers 13,939 acres and allows for 108 head of cattle. The allotment is for a ten

year period on 12 June 2012 and expires 15 June 2022. The ASLD allotment is also active but is grazed primarily for winter forage from November to April.

3.18.2 Impacts of Proposed Action

The Proposed Action would have no impacts on grazing permits surrounding Cottonwood Canyon Road. Grazing permits would not be altered by any actions of this plan. Administrative access for use, maintenance, and operation of authorized facilities and improvements would continue to be accommodated surrounding Cottonwood Canyon Road.

3.18.3 Impacts of No Action Alternative

The No Action Alternative would have no impacts on grazing permits within the area of Cottonwood Canyon Road.

3.18.4 Cumulative Impacts

The geographic area of impact is State Trust land in the project vicinity and the White Canyon RCA. There are no impacts to grazing associated with the proposed project therefore no cumulative impacts are expected.

3.19 Socioeconomics

3.19.1 Affected Environment

Pinal County is the fastest growing county in Arizona in terms of percentage population growth. Northern Pinal County has an estimated population of 382,982 according to 2010 Census report projections and data available from the Pinal Chamber of Commerce site. This population includes incorporated jurisdictions, unincorporated communities and the municipal planning areas of Apache Junction and Queen Creek (within Pinal County), Gold Canyon, Queen Valley, and Superior. There are over 3.5 million people living within 100 miles of the SBMRLF location. Additionally northern Pinal County is also the location of 275 square miles of state, federal and private land that would be released for development in the next 2-40 years. This area has been called the “Superstition Vistas”. Superstition Vistas is defined as area included within the corridor of SR 79 from Florence north and along the US Highway 60 from Apache Junction to Superior (Figure 9. Superstition Vistas Conceptual Planning Area). It is predicted that the Superstition Vistas area would increase in population from a low estimate of 20,000 new persons in 2020 to a high estimate of 900,000 by the year 2060.

Northern Pinal County is currently served by three private landfills and one transfer station. The transfer station is located in Pinal County in the Johnson Ranch subdivision. The Apache Junction landfill is privately owned and operational for approximately another 10-12 years. The Ironwood Landfill is owned by Pinal County and operated by private company and is nearing capacity as it has height restrictions. The Cactus Landfill is located 25 miles south of Florence and currently accepts MSW from primarily the Phoenix and eastern portions of Maricopa

County. The distance of this facility from the primary future users (Superstition Vistas) and transfer station makes this location less than ideal for future use.

Based on public records, these landfills currently dispose of approximately 1,900 tons of MSW per day. The MSW is generated by Apache Junction, Queen Creek, Johnson Ranch and the eastern most portions of Maricopa County. The MSW is disposed of at a rate of 1,400 tons per day (TPD) in the Apache Junction landfill, 300 TPD in the Cactus landfill and 200 TPD in the Ironwood landfill, or more than 540,000 tons per year. While approximately half of the waste is coming from western Maricopa County communities, the remaining 270,000 tons per year or 750 TPD is generated by Pinal County.

Many of the landfill sites in the footprint of the SBMRLF are at or near capacity. Despite the slowed economic growth, the east valley needs to identify a new municipal solid waste facility or be forced to send its waste south to Tucson or to the west valley. This would result in not only increased costs for waste disposal but additional trash hauling traffic which would face significant opposition.

3.19.2 Impacts of Proposed Action

The Proposed Action would allow for the development of a new MSW in the east valley and northern Pinal County. The size of the landfill would allow for the disposal of all Pinal County MSW to stay in Pinal County should contracts be secured. This would result in less trash hauling traffic and lower MSW disposal costs for residents of Pinal County and possibly eastern Maricopa County.

3.19.3 Impacts of No Action Alternative

Under the No Action alternative the landfill would not be built and the disposal of MSW would need to be transported to distant facilities. The cost of transporting the waste would increase and therefore the cost of municipal waste disposal. The current residents of eastern Maricopa and northern Pinal County could expect higher than increased fees for waste disposal services.

3.19.4 Cumulative Impacts

The geographic area of analysis is eastern Maricopa County and northern Pinal County. The development of the Superstition Vistas Area would generate more MSW in the area and produce more demands on the regional landfill system that is already reaching capacity. Municipalities typically try to secure long-term disposal agreements for their residents. Without a new landfill nearby they may need to contract with distant disposal and landfill operators. This would have a negative impact on costs to Maricopa and Pinal County residents and affect truck traffic throughout the region.

The Durham Regional Landfill, LLC has submitted a solid waste facility plan application to ADEQ to construct and operate the proposed Durham Regional Landfill. The proposed Durham Regional Landfill would be located southwest of Florence and would have a final waste footprint of approximately 184 acres.

4 –SUMMARY OF MITIGATION MEASURES

In order to reduce or eliminate any negative effects to the Human Environment, the following mitigation measures would be incorporated into the design and construction of the selected alternative:

Air Quality

- Watering of the roads within the SBMRLF would be performed as per the requirements of Pinal County Air Quality Control District Air Quality Operating Source Permit for the SBMRLF. An on-site production well or wells and a storage tank located on SBRLF private lands would provide water for dust control, fire suppression, and other landfill construction needs. Pinal County would require management of fugitive dust from landfill truck traffic on Cottonwood Canyon Road through water and/or chemical suppressant methods. Chemical suppressants have not yet been selected. If chemical suppressants are used, the suppressant would be selected at the time the road is constructed and approved by BLM.
- Water would be applied as needed to control dust during all phases of construction. Areas included are the project site and any construction site access roads, as well as any other areas contributing to dust production as a result of the proposed project.
- Construction entrances would be stabilized and built in accordance with ADOT and EPA guidelines to minimize sediment “track out” on existing roadways during construction.
- In accordance with the require dust control permit/air quality source permit, a monitoring program is mandatory for all heavy truck operations. Pinal County would be responsible for implementing the monitoring program.
- Dust suppression measures would be used from the time the ROW grant is issued through the construction period and through the entire use of the road per the appropriate Pinal County Air Quality Permit.
- Within five years of ROW grant issuance, the ROW holder will be required to make due diligence toward initiating road construction (per 43 CFR 2807.17) unless an issue is encountered during data recovery. In the event of a delay, the holder will provide the BLM good cause as to the nature of any delay with anticipated construction dates. To demonstrate due diligence, the ROW Holder will provide a written report annually to BLM on January 31 of each year describing the progress made toward commencement of construction including milestones such as obtaining permits from all regulatory agencies involved, obtaining of construction bids, obtaining inspections, status of archeological mitigation, and any other requirement for the construction of the road.

Cultural Resources

- An archaeological monitor must be present when the fence installation occurs on BLM-administered land within the site. This would be needed when actual fence posts are being dug into the ground to prevent or minimize further impacts to the site.
- Any archaeological or historic artifacts or remains or vertebrate fossils discovered during operations shall be left intact and undisturbed; all work in the area shall stop immediately and the BLM Archaeologist and BLM Field Manager shall be notified. Commencement of operations shall be allowed upon clearance by the BLM Field Manager.

- An additional cultural resource survey would be required in the event the project location is changed or additional surface disturbing operations are added to the project after the initial survey. Any such survey would have to be completed prior to commencement of operations.
- If in connection with operations under this authorization, any human remains, funerary objects, sacred objects, or objects of cultural patrimony as defined in NAGPRA (L. 101-601; Stat. 3048; 25 U.S.C. 3001) are discovered, project operations would stop, operator would protect the remains and objects, and immediately notify the appropriate land managing agency archaeologist (ASM Repatriation Coordinator if the find is on State land or the Tucson Field Office archaeologist if the find is on BLM-administered land) of the discovery. Project operations cannot resume until the appropriate permissions to resume are given.
- During the cultural data recovery, the owners/developers will provide at their cost overnight security to protect the cultural project area from vandalism.
- No ground construction disturbances or vehicular traffic are to occur south of the Cottonwood Canyon Road or west of Sandman Road. Prior to construction, the Owners/Developers and their construction contractors would flag, fence or stake the areas to be expanded within the 44 foot ROW dimension to provide limits to new disturbances in the cultural and construction process.
- The required cultural data recovery shall begin no later than 90 days from the issuance of the ROW Grant. The Developers/Owners shall advise BLM when they plan to begin the cultural recovery. No road construction shall begin until the cultural data recovery has been completed and approved by the BLM.

Floodplain/Water Quality

- Prior to construction the contractor shall provide to the BLM a Stormwater Pollution Prevention Plan (SWPPP) for review. The SWPPP would be implemented to minimize negative impacts to washes and the floodplain. During construction the Owner/Developer and contractor would be responsible for inspections and maintenance of all SWPPP Best Management Practices (BMPs).
- Design of drainage systems to reduce stormwater velocity and erosion in drainage channels which would result in negligible-to-minor, long-term adverse effects and implementation of the construction contractor's SWPPP.
- Implementation of mandatory sediment and erosion-control measures during and after construction would result in avoidance of excessively drained soils on lower benches adjacent to natural drainages. These include but are not limited to silt fence/waddle placement and mulch cover, hydroseeding, and rock check dams, graveled ingress/egress.
- The contractor shall submit the National Pollutant Discharge Elimination System Permit Notice of Intent to the EPA only after the SWPPP has been prepared, approved by BLM and is ready for implementation. The Notice of Termination will be submitted to the EPA upon the project's completion.
- No work shall occur within Jurisdictional Waters of the U.S. until the appropriate CWA Section 401 and 404 permits are obtained.
- The contractor shall comply with all terms and conditions of the Section 404 Nationwide Permit No. 12 and 14 as established by the U.S. Army Corps of Engineers, and

conditions of the Section 401 Individual Water Quality Certification, certified by the EPA.

Native American Religious Concerns

- Tribes will be provided with project updates and will participate in the Section 106 NHPA process.

Threatened and Endangered Species

- To alleviate potential impacts to foraging lesser long-nosed bats, the Owner/Developers or their Contractor shall avoid removal of food plants (saguaro) whenever possible. If food plants are removed, they would be replanted nearby in an area which would not be disturbed.
- The Contractor shall employ a qualified biologist to conduct an awareness program for Tucson shovel-nosed snakes. The biologist(s) would also monitor on-site construction activities to prevent harm to the snake. Soil compaction and other surface disturbance would be minimized to the extent possible.
- Clearing, grubbing, and access road construction shall be conducted September 1 through February 28, generally outside of the breeding season for desert nesting birds, to the extent possible. Removal of trees in areas of temporary disturbance shall be minimized. Natural regeneration of native plants shall be supported by cutting vegetation with hand tools, mowing, trimming, or using other removal methods that allow root systems to remain intact.
- Ponding of water caused by project activities will be prevented to the maximum extent possible within the SBMLRF parcel to prevent harm to migratory birds and desert bighorn sheep.
- The Owner/Developers shall provide the BLM with compensation for the loss of 1.9 acres of Category III Sonoran desert tortoise habitat.
- To alleviate potential impacts to Sonoran desert tortoises, the contractor would employ conservation measures including hiring of a biologist to monitor construction activities, presentation of a tortoise awareness program to project personnel, and conducting pre-construction surveys before project activities commence.
- The following conservation measures will be implemented for Sonoran desert tortoise:
 1. Within the 48 hours prior to surface-disturbing activities in Category II or III tortoise habitat, the areas to be disturbed shall be inspected by a qualified biologist for tortoises and their burrows. If a burrow is too deep to see the end of it, a fiber optic scope or instrument of equal abilities shall be used to determine if the burrow is occupied.
 2. All tortoises found incidentally or on surveys shall be relocated to a safe location by the permitted biologist following Arizona Game and Fish Guidelines for Handling Desert Tortoises Encountered on Development Projects (attached). Tortoise burrows that cannot be avoided during construction activities shall be excavated and backfilled. Artificial burrows to which desert tortoises are relocated during tortoise inactivity periods shall be of similar size, shape, orientation, and depth as the original burrows.

3. Biological monitor(s) shall be employed to prevent harm to tortoises during construction activities occurring within Category II and III habitat. A biologist will monitor each cluster of construction workers including each active piece of earth moving equipment. Between March 15 and November 15, a walking clearance of working areas will be conducted every morning and evening by biologists to check for tortoises.
4. Tortoises found within active construction sites shall also be removed to safe locations. If a tortoise is endangered by any construction activity, the activity shall cease until a qualified tortoise biologist is able to remove the tortoise to safety. Tortoises shall be handled only by qualified tortoise biologists and shall be moved solely for the purpose of preventing death or injury.
5. All observations of desert tortoises or their sign will be mapped on a 7.5' topographic map with township, range, and section noted, date, and the observer's name. Along with this map, a data base locality form will be filled out and returned to the BLM Authorized Officer.
6. All desert tortoises handled shall be checked for symptoms of upper respiratory disease syndrome. The presence or absence of symptoms shall be included in the report to the BLM Authorized Officer.
7. A qualified biologist will present an informational program to all construction employees addressing the potential for desert tortoise to occur within the project area, protective measures to be implemented during construction, and specific protocols to observe should desert tortoises be encountered.
8. All activity associated with construction and operation of the project should occur within previously disturbed areas whenever possible. Disturbance to areas outside the project limits will be kept to a minimum.
9. Construction sites shall be maintained in a sanitary condition at all times; waste materials at those sites shall be placed in covered receptacles to avoid attracting predators of desert tortoises and disposed of promptly at an appropriate waste disposal site. The Owners/Developers shall provide litter control along the project limits after construction is completed.
10. Watering of the construction site for dust control shall be conducted in a manner that will not result in development of ponds that could attract desert tortoises. Pondered areas shall be checked regularly by biological monitors and desert tortoises found in the vicinity of the pond shall be safely removed.
11. The Contractor shall limit speed of vehicles to 20 miles per hour in desert tortoise habitat. Construction and maintenance employees shall also be advised that care should be exercised when commuting to and from the project area to reduce road mortality.

Wastes and Hazardous Materials

- Special wastes such as used oil generated by work vehicles shall be handled according to BMPs and disposed of off-site in compliance with applicable law (40 CFR Part 279, Standards for the Management of Used Oil, 40 CFR Part 262, Standards Applicable to Generators of Hazardous Waste). While hazardous wastes created directly from the construction project are expected to be minimal, any waste produced from construction

would be handled in accordance with FP-03 Section 107.01, 107.08, 107.10 (Federal Projects Standards Specifications 2003).

- Wastes found on-site would be evaluated by an environmental professional (who meets the following criteria: minimum five years experience, a 40 hr HAZWOPER certificate, and a B.S in Physical Science), before they are handled, moved, or buried. The professional would recommend a course of action regarding any hazardous wastes identified on-site, including use of proper personal protective equipment to protect workers from known or suspected material hazards in their work environment.

Invasive and Non Native Weeds

- Vehicle washing prior to entering and exiting the project limits is recommended to prevent the spread of puncturevine, a noxious weed.

Migratory Bird Treaty Act

- Clearing and grubbing and access road construction shall be conducted September 1 through February 28, generally outside of the breeding season for desert nesting birds, to the extent possible.
- Ponding of water caused by project activities within the SBMLRF parcel would be prevented to the maximum extent possible.

Recreation

- The ROW holder will contribute funding to construct a small parking area on BLM land to compensate the loss of the existing BLM parking area and kiosk site.

Travel Management, Access and Transportation

- Traffic control would be enacted such that traffic on SR 79 is not significantly impeded.

Mineral Resources:

- The proposed widening of Cottonwood Canyon Road would result in the obliteration of mining claim monuments. Mitigation for the destruction of the mining claim monuments shall be the responsibility of the Developers/Owners and would consist of the erection of a witness monument outside of the proposed right of way for each mining claim monument destroyed. Any affected mining claimant(s) shall be notified by the Developers/Owners, the BLM would provide the mining claimant contact information, of the proposed replacement of the mining claim monument(s) with witness monument(s) prior to the destruction of the original monument(s). Each witness monument would be fitted with an embossed brass or aluminum tag indicating the relative location of the original mining claim monument from the witness monument. The design and materials of witness monuments would be in conformance with Ariz. Rev. Stat. § 27-202 thru § 27-210. If pipe is used in construction of witness monument(s), the upper end of the pipe would be permanently capped to prevent bird entrapment. The description of the location of each original mining claim monument must be sufficiently detailed such that a competent surveyor would be able to re-locate the original monument based upon the inscription found on the witness monument. For each mining claim for which a witness monument(s) is erected, an affidavit describing each witness monument and its relationship to its corresponding original mining claim monument would be filed in the

Pinal County Recorder's Office and with the BLM – Arizona State Office. Each affidavit would reference the corresponding mining claim by location, claim name, and serial number (AMC number). Each affected mining claimant shall be provided a copy of the affidavit(s) concerning each affected claim held by the claimant. Clearing and grubbing and access road construction shall be conducted September 1 through February 28, generally outside of the breeding season for desert nesting birds, to the extent possible. Removal of trees in areas of temporary disturbance shall be minimized. Natural regeneration of native plants shall be supported by cutting vegetation with hand tools, mowing, trimming, or using other removal methods that allow root systems to remain intact.

Vegetation

- Some grading and clearing of the vegetation in the 44 ft ROW and TUP areas is necessary for the road to be built per Pinal County design standards. Prior to any construction activities the Owners/Developers and their construction contractors are to meet with BLM representative to assess and inventory targeted vegetation. Reclamation of the vegetation would occur either by salvaging or destroying targeted vegetation or replanting the removed vegetation or replacing with new like kind vegetation. If vegetation is removed and not replaced, payment would be made to the BLM for the cost of lost vegetation. Payment would be based on the Arizona Department of Agriculture Native Plant price list. The access road would follow the existing road alignments. To accommodate the required 44 ft ROW width and the intersection improvements at Cottonwood Canyon Road and Sandman Road, including a right-hand turning lane for traffic continuing eastbound on Cottonwood Canyon Road from Sandman Road, the proposed widening, clearing and removal of top soil would occur on the north side of the existing Cottonwood Canyon Road and the east side of the existing Sandman Road. No ground construction disturbances or vehicular traffic are to occur south of the Cottonwood Canyon Road or west of Sandman Road. Prior to construction, the Owners/Developers and their construction contractors would flag, fence or stake the areas within the 44 foot ROW width and the TUP areas to be expanded to provide limits to new disturbances in the construction process or to identify any vegetation avoidance areas.
- During the installation of the wildlife fence the only allowable ground disturbance south or and west of Cottonwood Road and Sandman Road will be of human foot traffic made by workers installing the fence lines.
- The Owner/Developers would notify the Arizona Department of Agriculture at least 60 days prior to the removal of vegetation on State Trust Lands to afford commercial salvagers the opportunity to remove and salvage native plants which may be destroyed during project activities. For BLM lands, the first priority for salvaged native plants is for them to be used for reclamation of damaged lands on this project, and the second priority would be to use the salvaged plants for reclamation of other damaged BLM lands. If there are remaining salvaged plants that have been removed, the BLM would be reimbursed for the cost of lost vegetation based on the Arizona Department of Agriculture Native Plant price list.
- The Owner/Developers will notify the Arizona Department of Agriculture at least 60 days prior to the start of any project activities to afford commercial salvagers the

opportunity to remove and salvage native plants which may be destroyed during project activities.

5-RIGHT-OF-WAY STIPULATIONS AND MITIGATION MEASURES

1. No new ground disturbances or road construction is to occur until a Notice to Proceed is issued by the Bureau of Land Management (BLM). The road construction is not to begin until the cultural data recovery has been completed and approved by the BLM.
2. Upon the issuance of the Right-of-way (ROW) grant, the BLM will issue a Notice to Proceed to begin the required archaeological data recovery which is to begin no later than 90 days from the issuance of the ROW grant. After the successful completion and approval of the data recovery the BLM will then issue a second Notice to Proceed to allow the road construction to begin.
3. A preconstruction and pre-data recovery meeting will be held with the Holders, Contractors, on-site monitors and the BLM prior to the cultural data recovery and the road construction activities.
4. Third party monitors will be required to be on site to monitor archaeological resources during the data recovery, and during all construction activities. In addition, additional on-site monitors will be required to oversee matters for biological and Threaten and Endangered species, and for all construction matters and compliances to the right-of-way stipulations. The on-site monitors will provide to the BLM daily progress and incident reports. The holder shall be responsible to pay for the selected BLM approved monitors.
5. The holder shall comply with all State and Federal laws applicable to the authorized use and such additional State and Federal laws, along with the implementing regulations, that may be enacted and issued during the term of the grant.
6. The holder shall notify the authorized officer prior to commencement of emergency maintenance outside the right-of-way to discuss repair and construction activities.
7. Any modification to the ROW initiated by the holder may require the submission of an environmental assessment, cultural resource survey and biological evaluation to the BLM's authorized officer.
8. Any archaeological or historical artifacts or remains, or vertebrate fossils discovered during operations shall be left intact and undisturbed; all work in the area shall stop immediately; and the authorized officer shall be notified immediately. Commencement of operations shall be allowed upon clearance by the authorized officer.
9. An additional cultural and paleontological resource survey may be required in the event the project location is changed or additional surface disturbing operations are added to the project after the initial survey. Any such survey would have to be completed prior to commencement of operations.
10. If in connection with operations under this authorization, any human remains, funerary objects, sacred objects or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (:L. 101-601; Stat. 3048; 25 U.S.C. 3001) are discovered, the holder shall stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the Tucson Field

Office authorized officer and or the Tucson Field Office Archaeologist of the discovery with written confirmation. The holder shall continue to protect the immediate area of the discovery until notified by the authorized officer that operations may resume.

11. This Right of Way grant is subject to valid, existing rights of mining claimants [30 U.S.C. § 612(b)]. If land uses authorized under the Right of Way grant are found to endanger or materially interfere with prospecting, mining, or processing operations or uses reasonably incident thereto of a mining claimant then the Right of Way grant would be modified to resolve the conflict. Modifications may include relocation of the subject access road to accommodate the mining activities of the claimants.

The proposed widening of Cottonwood Canyon Road would result in the obliteration of mining claim monuments. Mitigation for the destruction of the mining claim monuments shall be the responsibility of the Developers/Owners and would consist of the erection of a witness monument outside of the proposed right of way for each mining claim monument destroyed. Any affected mining claimant(s) shall be notified by the Developers/Owners, the BLM would provide the mining claimant contact information, of the proposed replacement of the mining claim monument(s) with witness monument(s) prior to the destruction of the original monument(s). Each witness monument would be fitted with an embossed brass or aluminum tag indicating the relative location of the original mining claim monument from the witness monument. The design and materials of witness monuments would be in conformance with Ariz. Rev. Stat. § 27-202 thru § 27-210. If pipe is used in construction of witness monument(s), the upper end of the pipe would be permanently capped to prevent bird entrapment. The description of the location of each original mining claim monument must be sufficiently detailed such that a competent surveyor would be able to re-locate the original monument based upon the inscription found on the witness monument. For each mining claim for which a witness monument(s) is erected, an affidavit describing each witness monument and its relationship to its corresponding original mining claim monument would be filed in the Pinal County Recorder's Office and with the BLM – Arizona State Office. Each affidavit would reference the corresponding mining claim by location, claim name, and serial number (AMC number). Each affected mining claimant shall be provided a copy of the affidavit(s) concerning each affected claim held by the claimant.

12. Use of pesticides shall comply with the applicable Federal and State laws. Pesticides shall be used only in accordance with their registered uses and within limitations imposed by the Secretary of the Interior. Prior to the use of pesticides, the holder shall obtain from the authorized officer written approval of a plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, location of storage and disposal of containers, and any other information deemed necessary by the authorized officer. Emergency use of pesticides shall be approved in writing by the authorized officer prior to such use.
13. The holder(s) shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder(s) shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et.seq.) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and

especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

14. The holder of Right-of-Way No. AZA 35539 agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et.seq., or the Resource Conservation and Recovery Act of 1976, 42 U.S.C. 6901, et.seq.) on the right-of-way (unless the release or threatened release is wholly unrelated to the right-of-way holder's activity on the right-of-way). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third party.
15. Special wastes such as used oil generated by work vehicles shall be handled according to BMPs and disposed of off-site in compliance with applicable law (40 CFR Part 279, Standards for the Management of Used Oil, 40 CFR Part 262, Standards Applicable to Generators of Hazardous Waste). While hazardous wastes created directly from the construction project are expected to be minimal, any waste produced from construction would be handled in accordance with FP-03 Section 107.01, 107.08, 107.10 (Federal Projects Standards Specifications 2003).
16. Wastes found on-site would be evaluated by an environmental professional (who meets the following criteria: minimum five years' experience, a 40 hr HAZWOPER certificate, and a B.S in Physical Science), before they are handled and removed. The professional would recommend a course of action regarding any hazardous wastes identified on-site, including use of proper personal protective equipment to protect workers from known or suspected material hazards in their work environment. The BLM will be advised and approve of the recommended course of action.
17. Any vehicles and equipment that are brought in from outside the area will be power-washed, including the undercarriage, prior to entering the right-of-way and afterwards before moving vehicle and equipment onto any other public lands, to prevent the introduction and spread of noxious weeds and/or invasive species, including the spread of puncture vine, a noxious weed.
18. The holder will always maintain the roads in a good and safe condition and also do mitigation for erosion control and dust mitigation during construction and after the road is completed.
19. Watering or application of a BLM approved dust suppressant material will be used to control fugitive dust created by construction activities. Dust abatement for the access road would be provided by the Owners/Developers of the SBMRLF and monitored by Pinal County Air Quality Control District. This would involve daily watering of the ROW access road and Temporary Use Permit (TUP) TUP areas or the application of dust suppressant materials during all phases of the construction, and during the landfill operations. The BLM must approve the use of any dust suppression application being proposed to be used on the road during and after the road construction activities.

20. In accordance with the required dust control permit/air quality source permit, a monitoring program is mandatory for all heavy truck operations. Pinal County would be responsible for implementing the monitoring program.
21. The BLM will issue TUPs for the development of the two drainage culverts. Upon the completion of the two drainage culverts and upon the BLM approval the TUPs will be terminated.
22. Once the access road is improved, completed and meets Pinal County's approval the private landowners under the BLM ROW will assign their ROW interest to Pinal County pursuant to the Agreement with Pinal County and the private landowners. Cottonwood Canyon Road (CCR) and Sandman Road would then become a Pinal County Road and the County would assume responsibilities for the maintenance of the road, signage, cattle guards and fencing. Once completed, the ASLD and BLM ROWs for CCR and Access will be maintained by SBMRLF as part of the development agreement with the Owners. The following level of monitoring and maintenance of the CCR and Sandman Road by the County will be conducted:
 - a. On at least a semi-annual basis, the owner of the SBMRLF will inspect the CCR, Access road, cattle guards, guard rails, culvert crossings, signage, fencing and recreational parking signage, fencing and the recreational parking area for signs of disrepair, damage or vandalism. Repairs will occur on a semi-annual or on an as needed basis.
 - b. As necessary, the owner of the SBMRLF will repair the road surface to fill pot holes. The County will be responsible for repair and replacement of signs and graffiti.
 - c. The owner of the SBMRLF will coordinate and communicate in writing any proposed repairs to the BLM field office. If the repairs constitute an emergency, the owner of the SBMRLF may communicate the need via telephone, email or other voice messaging system.
 - d. Snow removal or grading required from snow fall is not anticipated and therefore not required for the CCR and Access.
 - e. Litter control, during the life of the landfill, will be provided by the Owner of the SBMRLF. Litter on the Access will be monitored and controlled weekly with the permission of Pinal County as the owner of the ROW. All varieties of vehicles will be transporting waste to the SBMRLF. The owner of the SBMRLF will be responsible for cleanups of spills or litter related to landfill related traffic. If hazardous or solid waste spills occur, the cleanup will be the responsibility of the Owner of the SBMRLF. The Owner of the SBMRLF will maintain a spill response plan. This plan will include mandatory notification to the National Response Center in the event a spill occurs into flowing water or into dry washes where flowing water can be expected to occur before cleanup can be accomplished.
 - f. Dust abatement for the Access will be provided by the Owner of the SBMRLF. This will involve daily watering of the Access or the application of a BLM approved dust suppressant material. Upon closure of the Landfill, there will be no further watering of the road by the Owner of the SBMRLF. Pinal County will then continue to mitigate dust abatement on the roads. The BLM must approve the use of any dust suppression application being proposed to be used on the road

during and after the road construction activities.

Preconstruction/ Cultural Data Recovery Phase:

23. During the cultural data recovery period the holder will provide and pay for additional overnight on-site security to the archaeological sites from being vandalized.
24. The holder will provide and pay for additional overnight on-site security during the cultural data recovery process, to protect the archaeological sites from being vandalized.
25. The on-site monitor will keep the BLM informed of the data recovery activities or unplanned incidents by providing the Tucson BLM office with daily progress reports.
26. The holder will provide safety traffic control measures to protect and ensure the safety of all personnel working on the data recovery and construction activities. The holder will provide a Safety Plan.
27. Prior to the road construction, the holder and its contractor will meet with the BLM to assess and inventory targeted vegetation that will be affected by the construction activities falling within the right-of-way and the temporary use permit areas. At this time a reclamation plan will be determined of what vegetation would be salvaged or destroyed or replanted or replaced with new like kind vegetation. For BLM lands, the first priority for salvaged native plants is for them to be used for reclamation of damaged lands on this project, and the second priority would be to use the salvaged plants for reclamation of other damaged BLM lands. If there are remaining salvaged plants that have been removed, the BLM would be reimbursed for the cost of lost vegetation based on the Arizona Department of Agriculture Native Plant price list.
28. Prior to construction, the Owners/Developers and their construction contractors would flag, fence or stake the areas to be expanded to provide limits to new disturbances in the construction process or to identify any vegetation avoidance areas.
29. Prior to construction flagging and staking of the project area would be done in accordance with the construction plans as approved by the County and the BLM. All staking would be performed by registered land surveyors and in sufficient detail to define the construction footprint of the access road. The surveyors would stake the centerline, edge of roadway surfacing, edge of ROW, TUP areas, fill areas, and wash crossings. All flagging and staking would be done with common 4 foot survey laths. Survey markings that identify the various components of the access road would be clearly marked on the survey lath. High-visibility vinyl flagging would be tied to the survey lath to allow easy identification of the lath. All survey laths would be removed at the end of construction.
30. Prior to construction the holder will provide to the BLM for review the Stormwater Pollution Prevention Plan (SWPPP) which would be implemented to minimize negative impact to washes and the floodplain. During construction the Owner/Developer's contractor would be responsible for inspection and maintenance of all SWPPP BMPs.
31. The contractor shall submit the NPDES Permit Notice of Intent to the EPA only after the SWPPP has been prepared, approved by BLM and is ready for implementation. The Notice of Termination will be submitted to EPA upon the project's completion.
32. No work shall occur within Jurisdictional Waters of the U.S. until the appropriate CWA Section 401 and 404 permits are obtained.

Construction Phase

33. The access road shall be constructed per the Pinal County approved road design plans. See Appendix E of the POD (NL Mineral Mountain, LLC, et al. 2011) for these design drawings. The access road alignment would not be excavated and no topsoil would be removed. The road would be constructed of 10 inches of ABC over engineered fill.
34. All construction work and activities are to be performed and contained within the limits of the 44 foot right-of-way, and within the authorized area of the TUPs). No ground disturbances are to occur outside of the 44 foot ROW without a TUP in place.
35. The contractor shall comply with all terms and conditions of the Section 404 Nationwide Permit No. 12 and 14 as established by the U.S. Army Corps of Engineers, and conditions of the Section 401 Individual Water Quality Certification, certified by the EPA.
36. The design of drainage systems is to reduce storm water velocity and erosion in drainage channels which would result in negligible-to-minor, long-term adverse effects under the implementation of the construction contractor's SWPPP.
37. The holder will implement mandatory sediment and erosion-control measures during and after construction would result in avoidance of excessively drained soils on lower benches adjacent to natural drainages. These include but are not limited to silt fence/waddle placement and mulch cover, hydroseeding, and rock check dams, graveled ingress/egress.
38. During construction of the access road, the third party contractor would prepare a site health and safety plan that details emergency procedures, local emergency responder contacts, and possible emergency situations. These include injury, fire, accidents, spills, etc. that may reasonably be expected to occur during the course of construction. The contractor would also hold safety meetings with their employees and the Owner/Developer as well as representatives of the BLM, the County, and other regulatory or interested parties. A safe and clean work site would be maintained during construction. The third party contractor would also be responsible for implementing and maintaining the necessary SPCC plan for fuels associated with construction of the access road. All staging, fueling and maintenance would be conducted on the SBMRLF property. Furthermore, the two TCEs on State Trust land are designated for storage of construction equipment during the road improvements.
39. Flagging and staking of the project area would be done in accordance with the construction plans as approved by the County and the BLM. All staking would be performed by registered land surveyors and in sufficient detail to define the construction footprint of the access road. The surveyors would stake the centerline, edge of roadway surfacing, edge of ROW, TUP areas, fill areas, and wash crossings. All flagging and staking would be done with common 4 foot survey laths. Survey markings that identify the various components of the access road would be clearly marked on the survey lath. High-visibility vinyl flagging would be tied to the survey lath to allow easy identification of the lath. All survey laths would be removed at the end of construction.
40. Wildlife friendly ROW fencing would be installed on both sides of the road ROW edges on BLM-administered land and along an internal side road. No vehicular or construction impacts/damages are to occur on the south and west sides of Cottonwood Road and Sandman Road. The only allowable ground disturbances south and west of

- Cottonwood Road and Sandman Road will be of human foot traffic caused by workers installing the fence line, resulting in minimal resource damages.
41. During the installation of the wildlife fence the only allowable ground disturbance south of and west of Cottonwood Road and Sandman Road will be of human foot traffic made by workers installing the fence lines. No ground disturbances, vehicular or construction equipment is to occur or enter beyond ROW edges south of and west of Cottonwood Road and Sandman Road.
 42. An archaeological monitor must be present when the fence installation occurs on BLM-administered land.
 43. During construction dust abatement measures will be implemented and provided by the holder and contractor, this would involve daily watering of the ROW access road and TUP areas, or the application of dust suppressant materials during all phases of the construction.
 44. Traffic flow and access to public land would be maintained on Cottonwood Canyon and Sandman roads construction and traffic control would be provided to allow safe passage of vehicles during standard construction activities. Those phases of the construction that would restrict traffic for more than four hours would be scheduled for mid-week when traffic is lightest to reduce disruptions. Notification of construction delays would be posted on SR 79 and Cottonwood Canyon Road. At this time, no roadway closures are planned.
 45. There shall be no storage or staging of construction equipment or vehicles on public lands during construction.
 46. Construction on Cottonwood Canyon Road and Sandman Road would be suspended during weather conditions (monsoons, heavy rains), when flooding in the washes and drainages is possible.
 47. During construction of the access road, solid waste would be removed by a third party and disposed of at a permitted party and disposed of at a permitted solid waste facility. After construction of the access road and SBMRLF, waste and litter would be collected and disposed in the SBMRLF. After construction of the access road and SBMRLF, waste and litter would be collected and disposed in the SBMRLF.
 48. The holder will be required to implement that Desert Tortoise Mitigation Measures as a component of the road construction.
 49. To alleviate potential impacts to Sonoran desert tortoises, the contractor would employ conservation measures including hiring of a biologist to monitor construction activities, presentation of a tortoise awareness program to project personnel, and conducting pre-construction surveys before project activities commence.
 50. The Owner/Developers shall provide the BLM with compensation for the loss of 1.9 acres of Category III Sonoran desert tortoise habitat.
 51. The contractor shall employ a qualified biologist to conduct an awareness program for Tucson shovel-nosed snakes. The biologist(s) would also monitor on-site construction activities to prevent harm to the snake. Soil compaction and other surface disturbance would be minimized to the extent possible.
 52. To alleviate potential impacts to foraging lesser long-nosed bats, the Owner/Developers or their contractor shall avoid removal of food plants (e.g., saguaro) to the greatest extent possible.
 53. To minimize impacts to migratory bird species nesting within the ROW project limits

clearing and grubbing, and access road construction shall be conducted September 1 through February 28th, generally outside of the breeding season for desert nesting birds, to the extent possible.

54. Ponding of water caused by project activities within the project limits and the private landfill parcel would be prevented to the maximum extent possible.
55. The holder will install and maintain all traffic signs required by Pinal County standards along the access road, as well as installing and maintaining all directional signs to guide the public to the recreation parking area.
56. The Holder will provide the BLM for approval a Reclamation plan within 45 days from the completion of the road, TUPs and all ancillary features. The holder will be responsible to clearing and removing from the right-of-way and TUP areas of all trash and debris, and rehabilitate construction areas as needed.

6 – COMPLIANCE AND AREA MONITORING

- The contractor shall be required to provide documentation to demonstrate compliance with NEPA and other federal regulations for construction equipment yards, material sources, and haul roads that are not covered by this assessment.
- A BLM approved onsite monitor would be required to be present and oversee the cultural data recovery process. Monitors would also be required during the entire construction process to oversee cultural, biological, and implementation of the ROW stipulations. The cost for the monitors would be paid by the Owners/Developers.
- Additional onsite security for early morning and evenings would be required to protect the archaeological site when the data recovery crew is not working. The cost of the security would be paid by the Owners/Developers.
- All ROW compliances would be conducted by BLM personnel.

7 –PERSONS AND AGENCIES CONSULTED

In preparation of the EA, key agencies, municipalities, recreational groups, and stakeholders were contacted for issue identification and resource inventory information. The Four Southern Tribes (Tohono O’odham Nation, the Gila River Indian Community, the Salt River Pima-Maricopa Indian Community, and the Ak-Chin Indian Community) were consulted about management and protection of cultural resource sites. Following is a list of the agencies and stakeholders:

Arizona State Land Department (ASLD)

Vanessa Hickman-State Land Commissioner

Michelle Green- Project Manager

Jody Latimer-Manager, Environmental Resources & Trespass Section

Steve Ross- Cultural Resources Manager, Environmental Resources & Trespass Section

James Rees- Administrator, Right of Way Section

Rueben Ojeda- Manager, Right of Way Section

Arizona Department of Emergency and Military Affairs (AZDEMA)

Gavin Fielding- Cleanup Remediation Manager

Bureau of Land Management (BLM)

Brian Bellew- Former Field Manager

Viola Hillman- Former Field Manager

Melissa Warren – Field Manager

Tim Shannon – District Manager

Susan Bernal- Project Manager

Kristen Duarte- Rangeland Specialist

Ben Lomeli-Hydrologist

Francisco Mendoza- Outdoor Recreation Planner

Daniel Moore-Geologist

Darrell Tersey- Natural Resource Specialist

Karen Simms-Assistant Field Manager

Amy Sobiech- Archaeologist

Amy Markstein- Planning & Environmental Coordinator

Pinal County

Greg Stanley- County Manager

Scott Bender- Engineer

Christopher Wanamaker- Engineer

Dale Harman- Transportation Planner

Cowley Management

Mike Cowley- Developer

Rory Blakemore- Developer

Charis Project, LLC

Mark Carver- Developer

Highground

Chuck Coughlin- Developer

8 –PREPARERS

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Andrea Gregory- Principal Investigator/Cultural Resources

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Alissa Letendre- GIS Manager

Brad Dilli- GIS Manager

John Spiandorello- GIS Analyst

Tracy McCarthy- Senior Environmental Planner/Senior Biologist

Keith Scoular- Registered Geologist, Senior Environmental Scientist

Laura Stewart- Wildlife Biologist

M. John “Jack” Matirko- Technical Editor/Graphic Artist

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10–LIST OF ACRONYMS

AASHTO	American Association of State Highway and Transportation Officials
ABC	Aggregate Base Course
ADEQ	Arizona Department of Environmental Quality
ADOT	Arizona Department of Transportation
ADT	Average Daily Traffic
AGFD	Arizona Game and Fish Department
APE	Area of Potential Effect
AZARNG	Arizona Army National Guard
AZDA	Arizona Department of Agriculture
AZDEMA	Arizona Department of Emergency and Military Affairs
BLM	Bureau of Land Management
BMP	Best Management Practices
CFR	Code of Federal Regulations
cfs	Cubic Feet Per Second
CMP	Corrugated metal pipe
CPC	Closure and Post-Closure Care
CWA	Clean Water Act
EA	Environmental Assessment
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FLPMA	Federal Land Policy and Management Act
FMR	Florence Military Reservation
ft	Feet
GWMP	Groundwater Monitoring Plan
HELP	Hydrologic Evaluation of Landfill Performance
LLC	Limited Liability Company
LLNB	Lesser Long-Nose Bat
MFPA	Municipal Facility Plan Approval
MSW	Municipal Solid Waste
MSWLF	Municipal Solid Waste Landfill
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OHV	Off-Highway Vehicle
RACT	Reasonable Available Control Technology
RCBC	Reinforced Concrete Box Culvert
RCA	Resource Conservation Area

RMP	Resource Management Plan
ROW	Right-of-way
SBMRLF	Silver Bar Mine Regional Landfill
SHPO	State Historic Preservation Office
SR	State Route
SLUPA	Special Use Land Permit Area
SPCC	Spill Prevention Control and Containment
SWFP	Solid Waste Facility Plan
SWPPP	Stormwater Pollution Prevention Plan
TCE	Temporary construction easement
TIA	Traffic Input Analysis
TMP	Travel Management Plan
TPD	Tons per day
TUP	Temporary Use Permit
U.S.C.	United States Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service

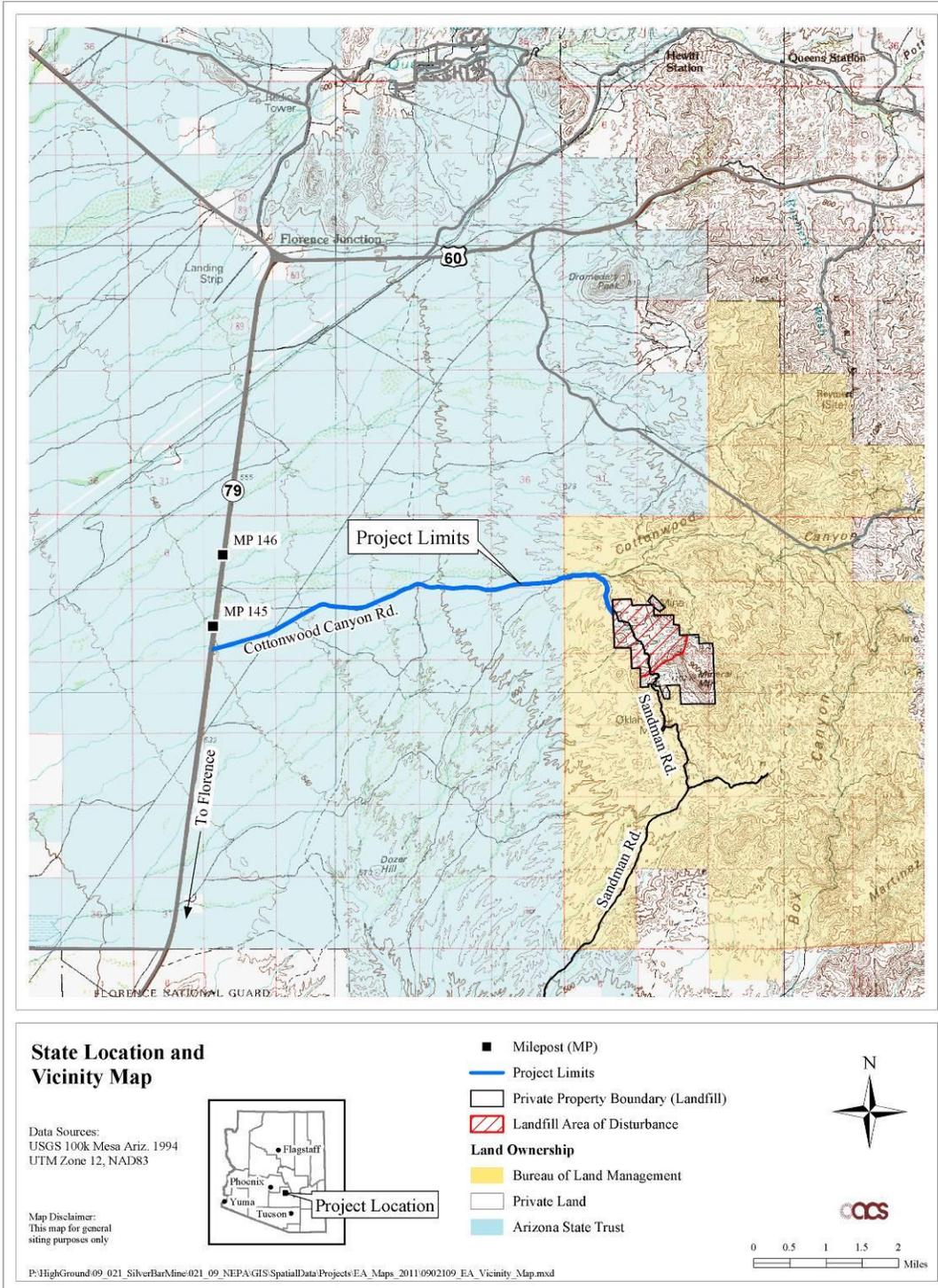


Figure 1. State Location and Vicinity Map

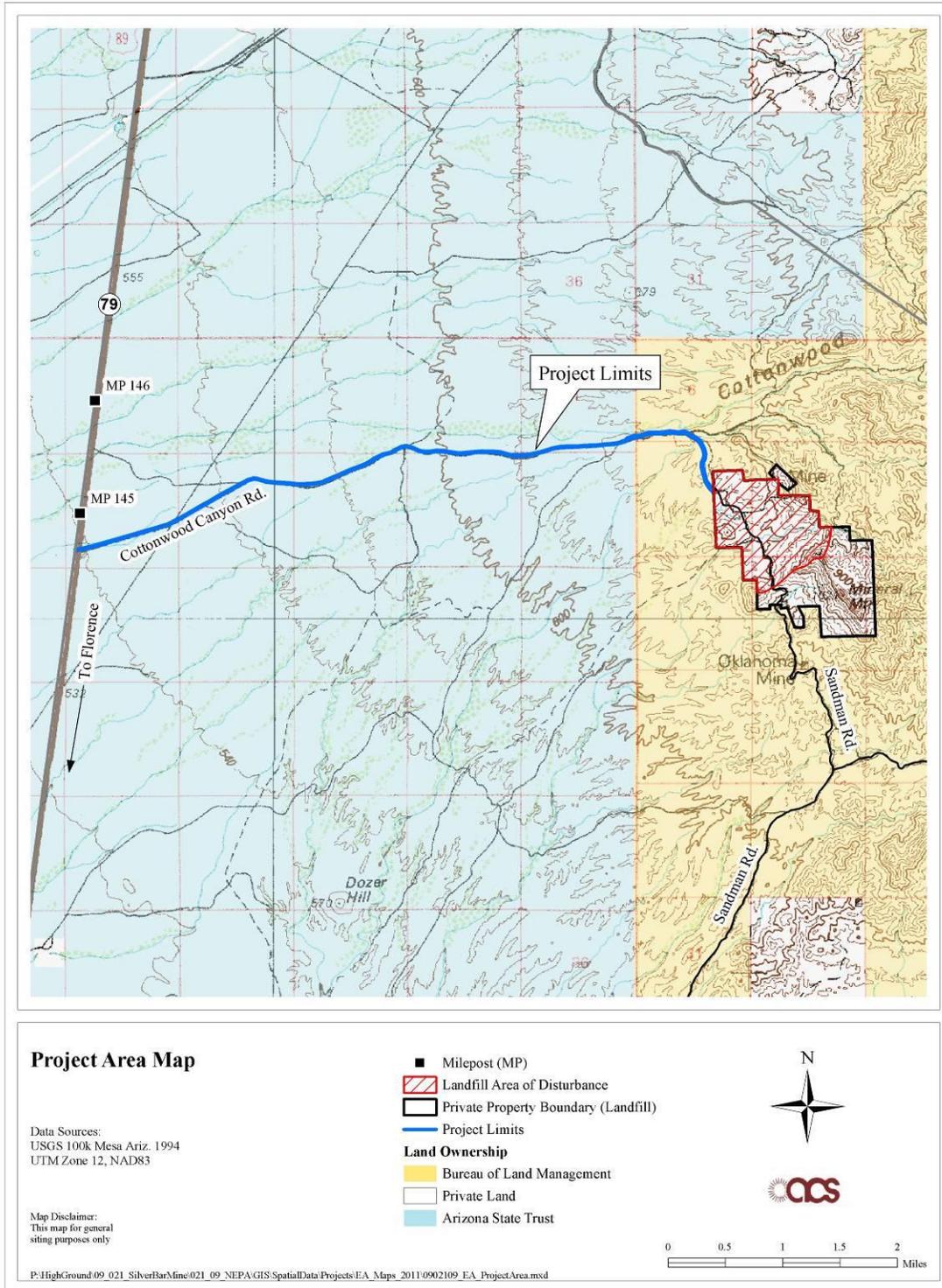


Figure 2. Project Area Map

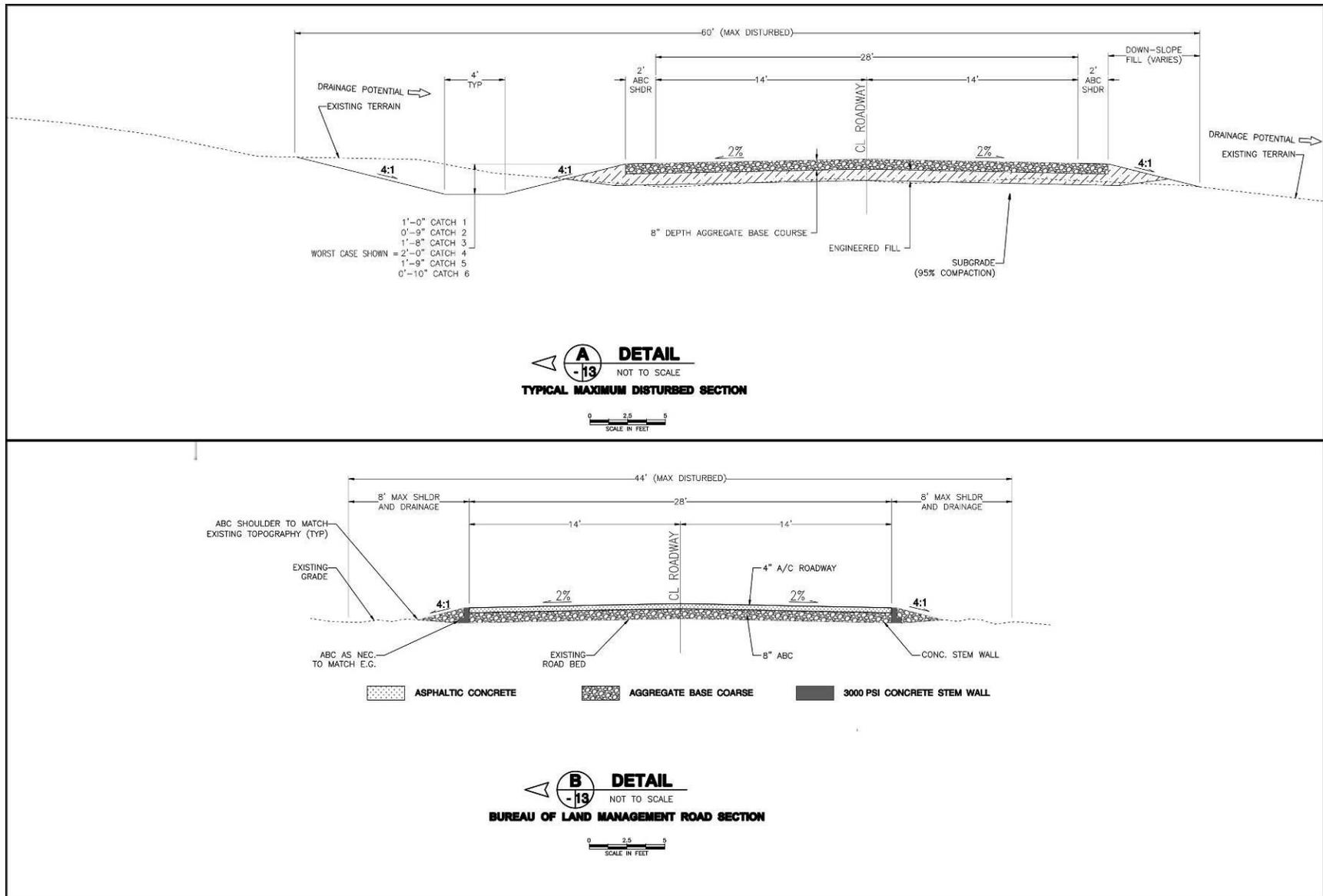


Figure 3. Typical Road Section for State Trust and BLM-Administered Lands

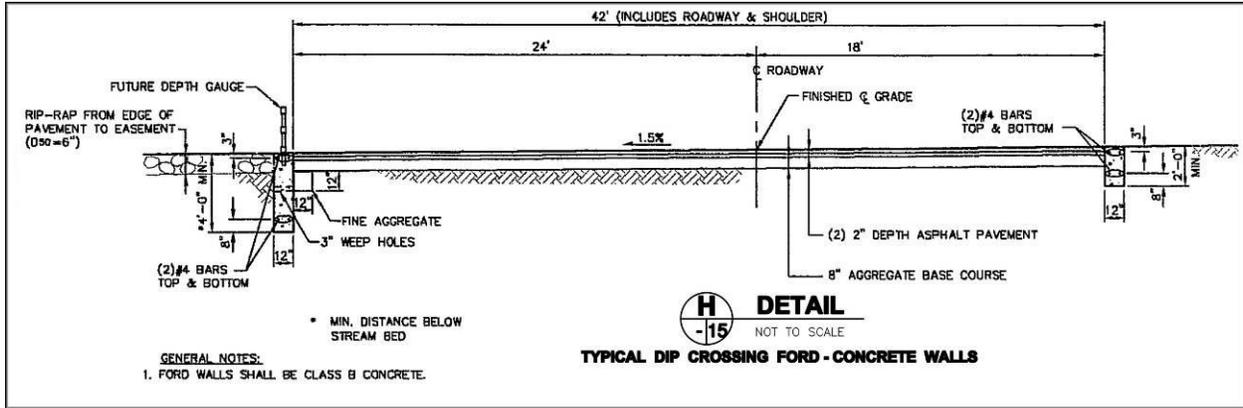


Figure 4. Cross Section of Wash Crossing

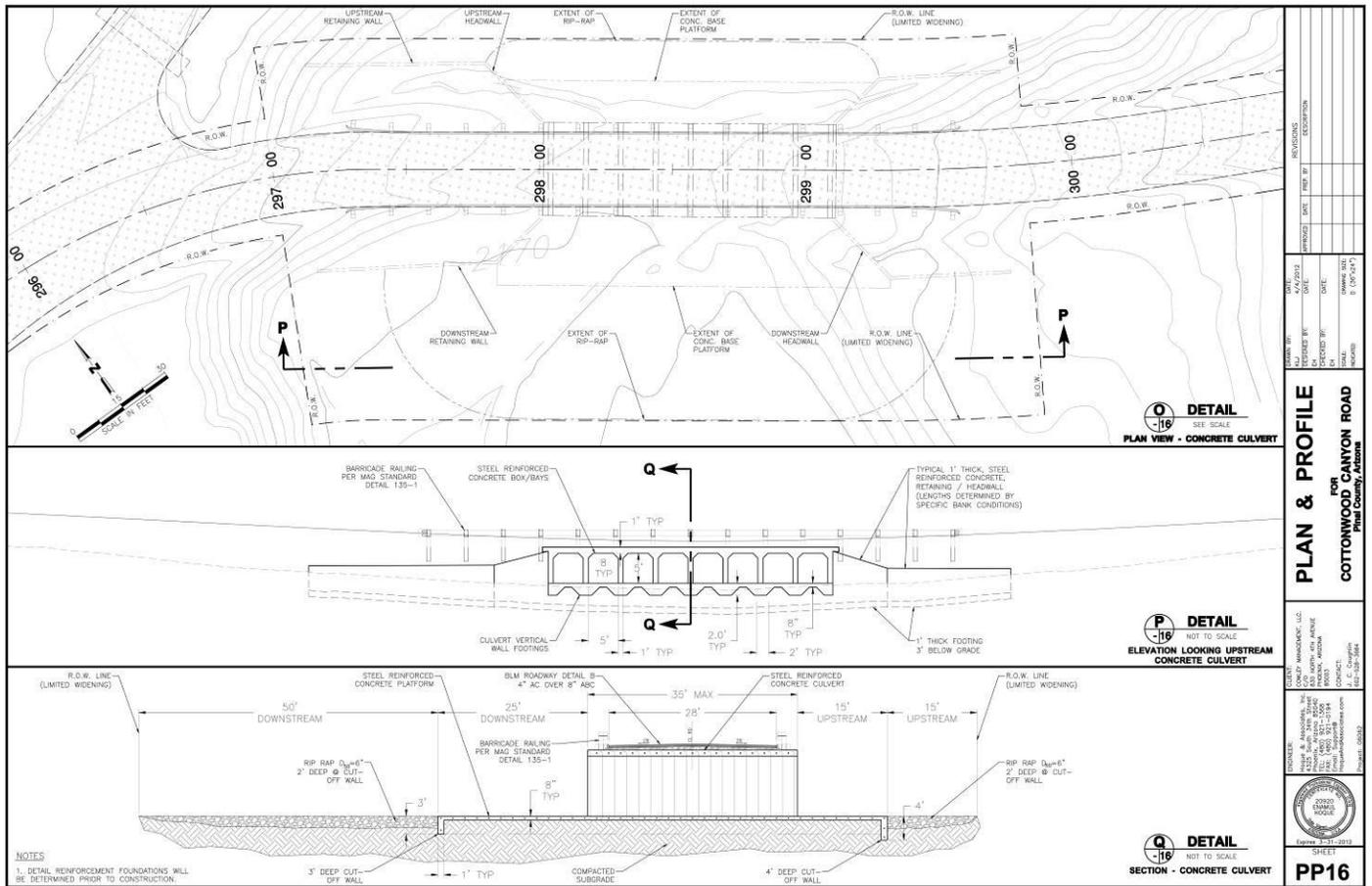


Figure 5. Culvert Cross Section

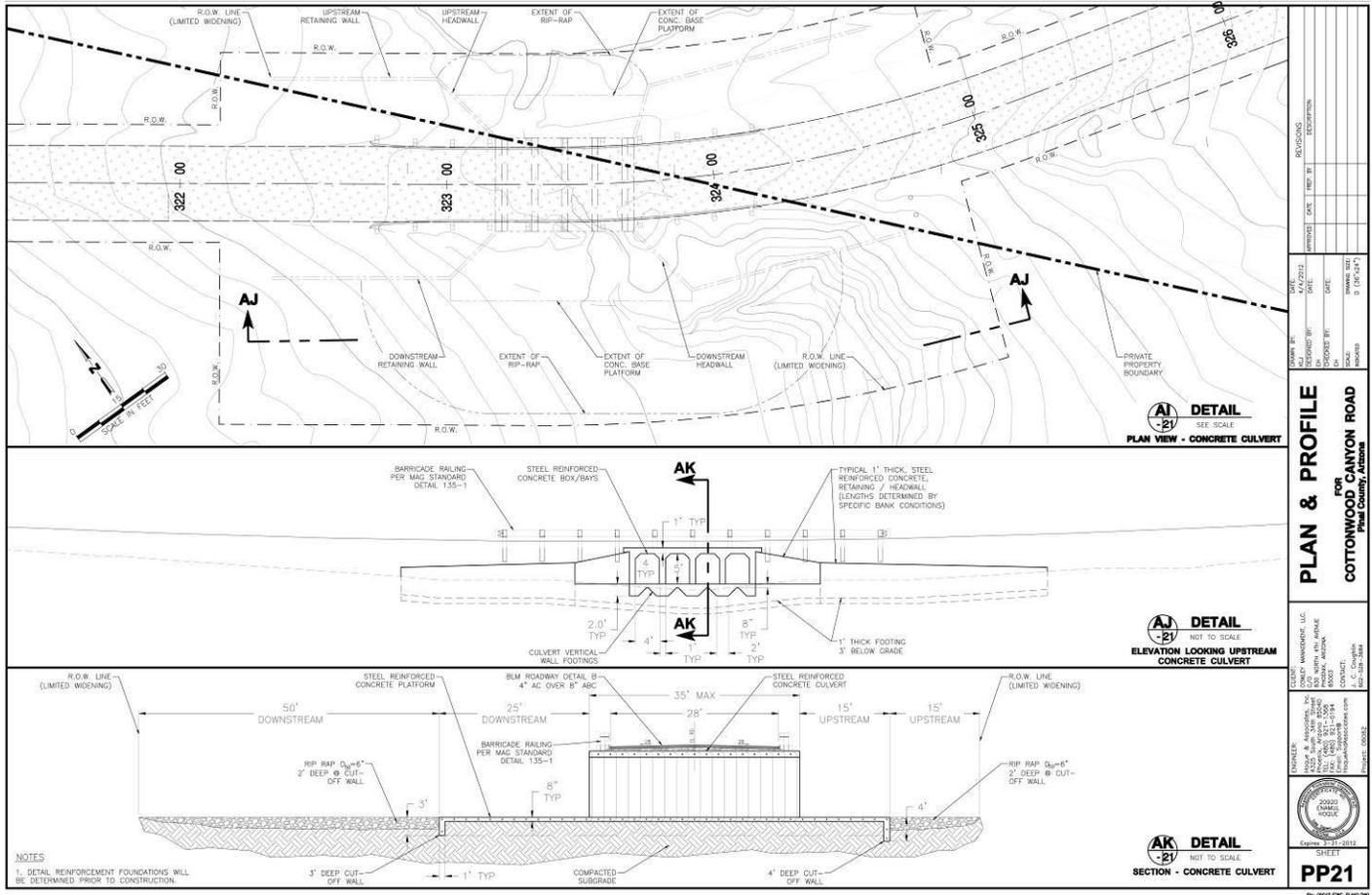


Figure 6. Culvert Cross Section

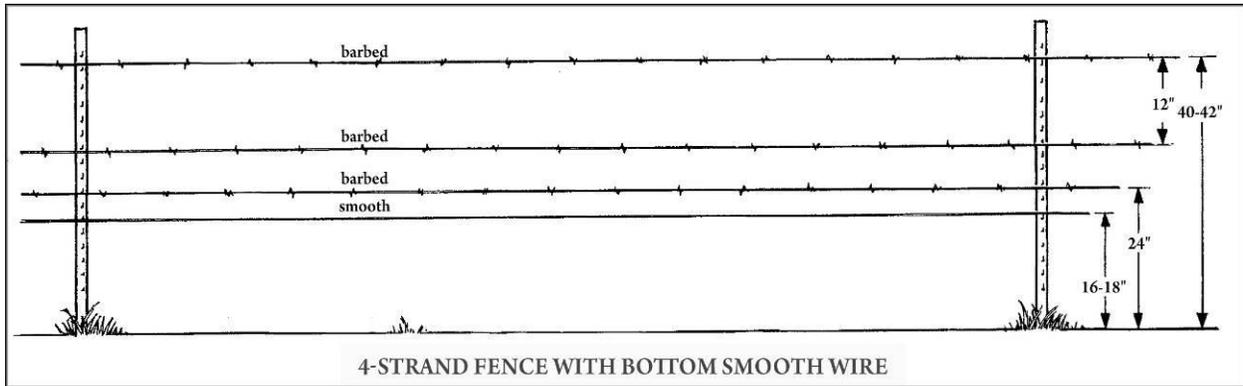
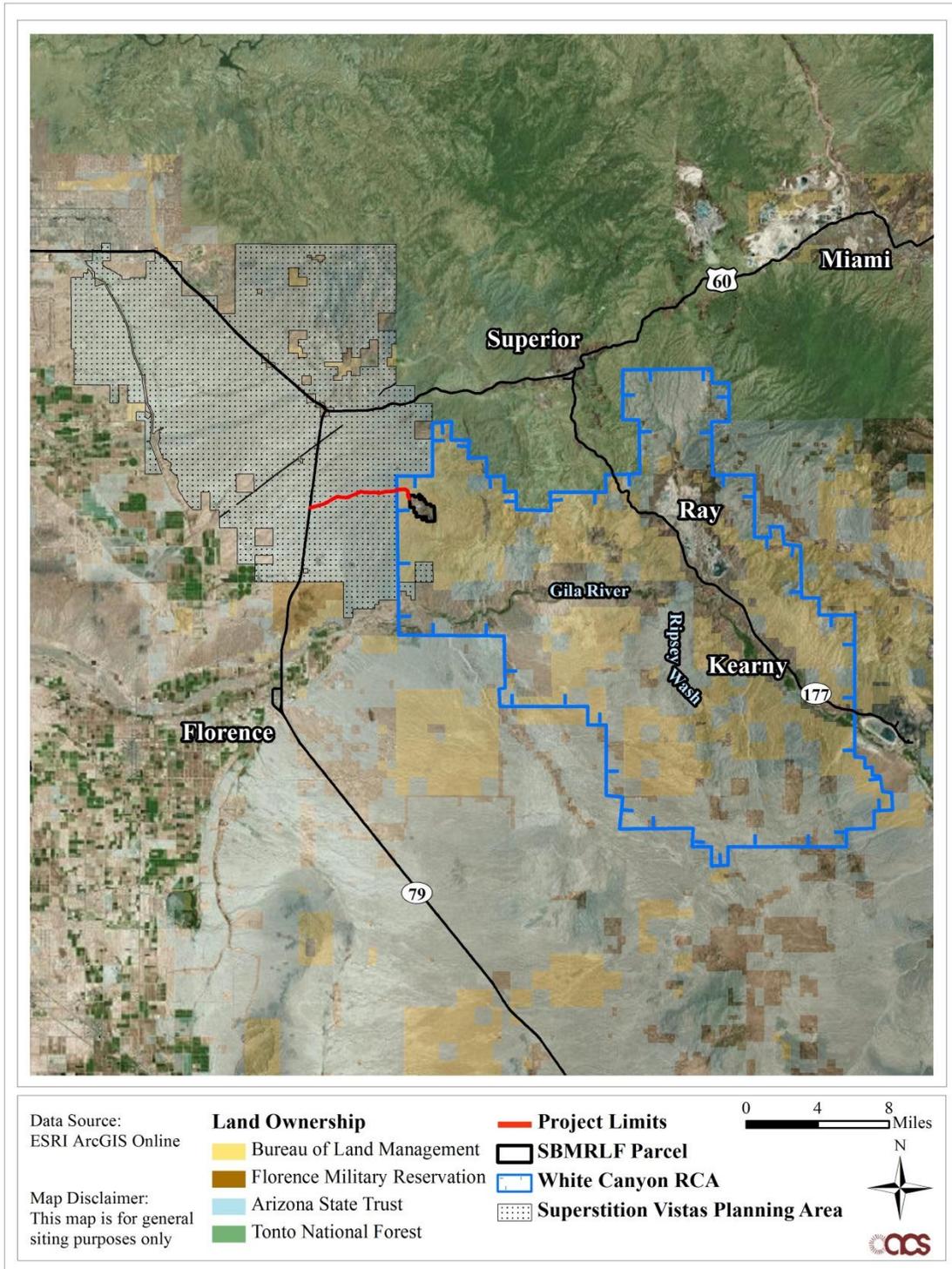


Figure 7. Fencing Design



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Figure 8. Cumulative Impact Boundaries

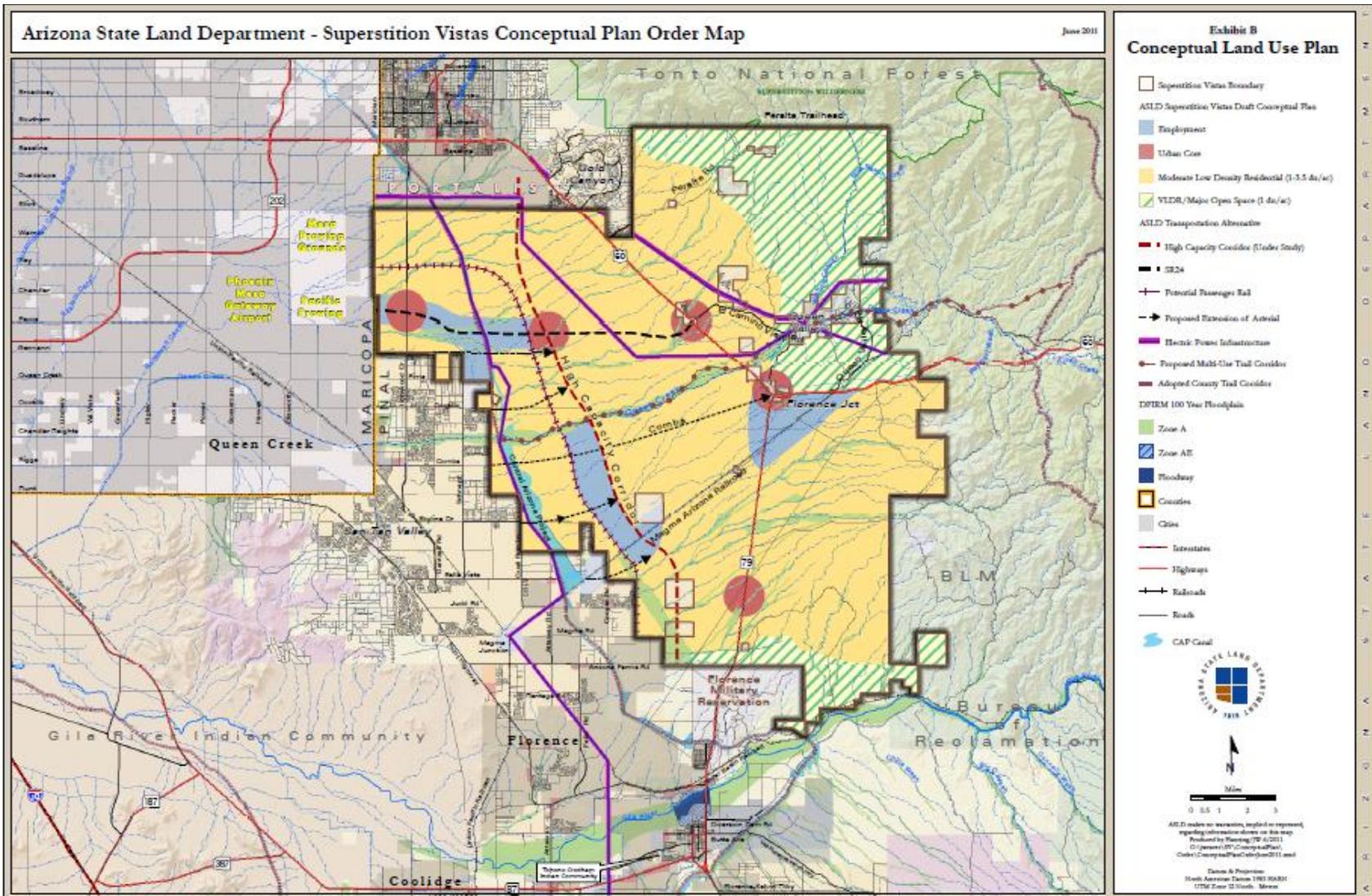


Figure 9. Superstition Vista Conceptual Planning Area

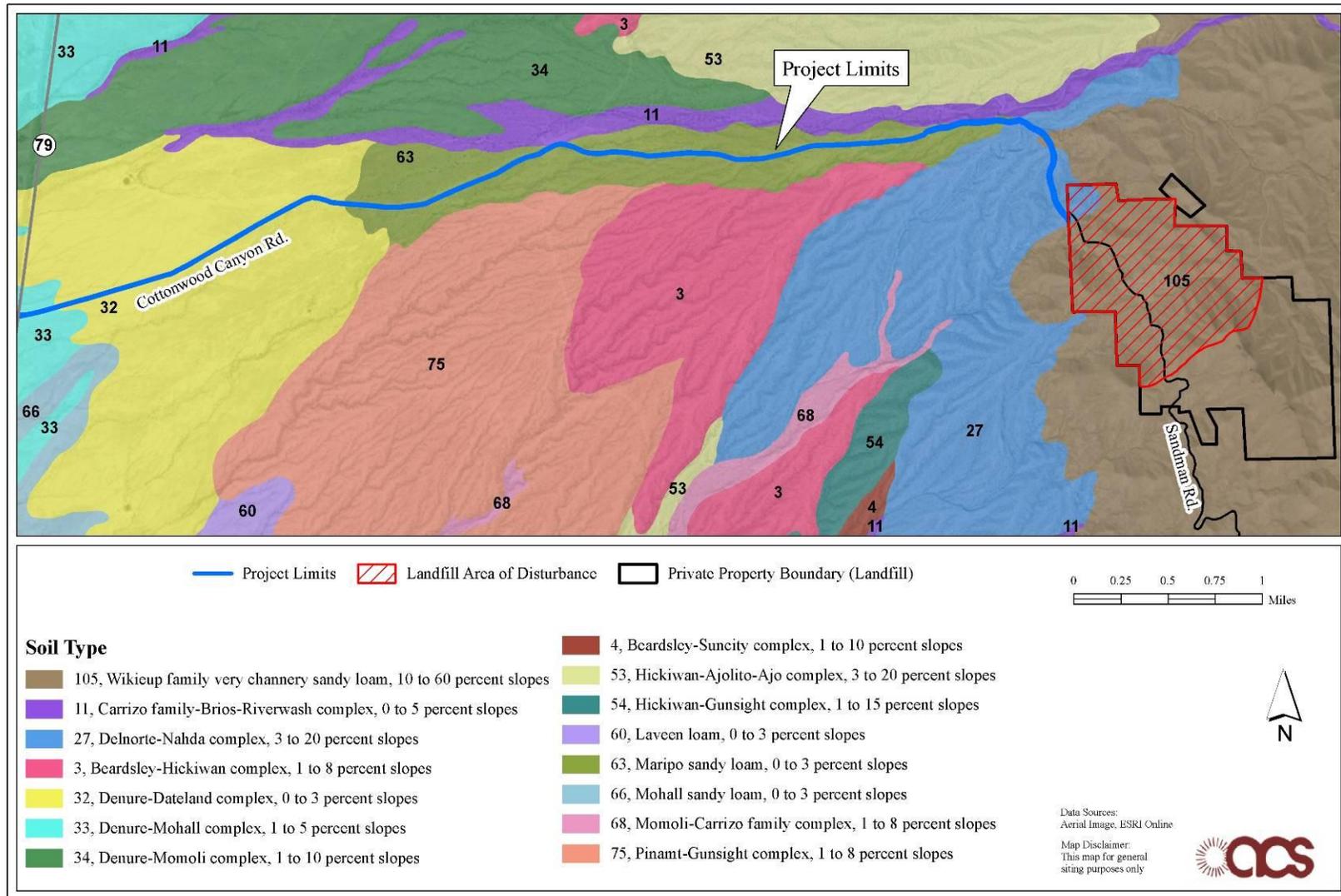


Figure 10. Soils Map

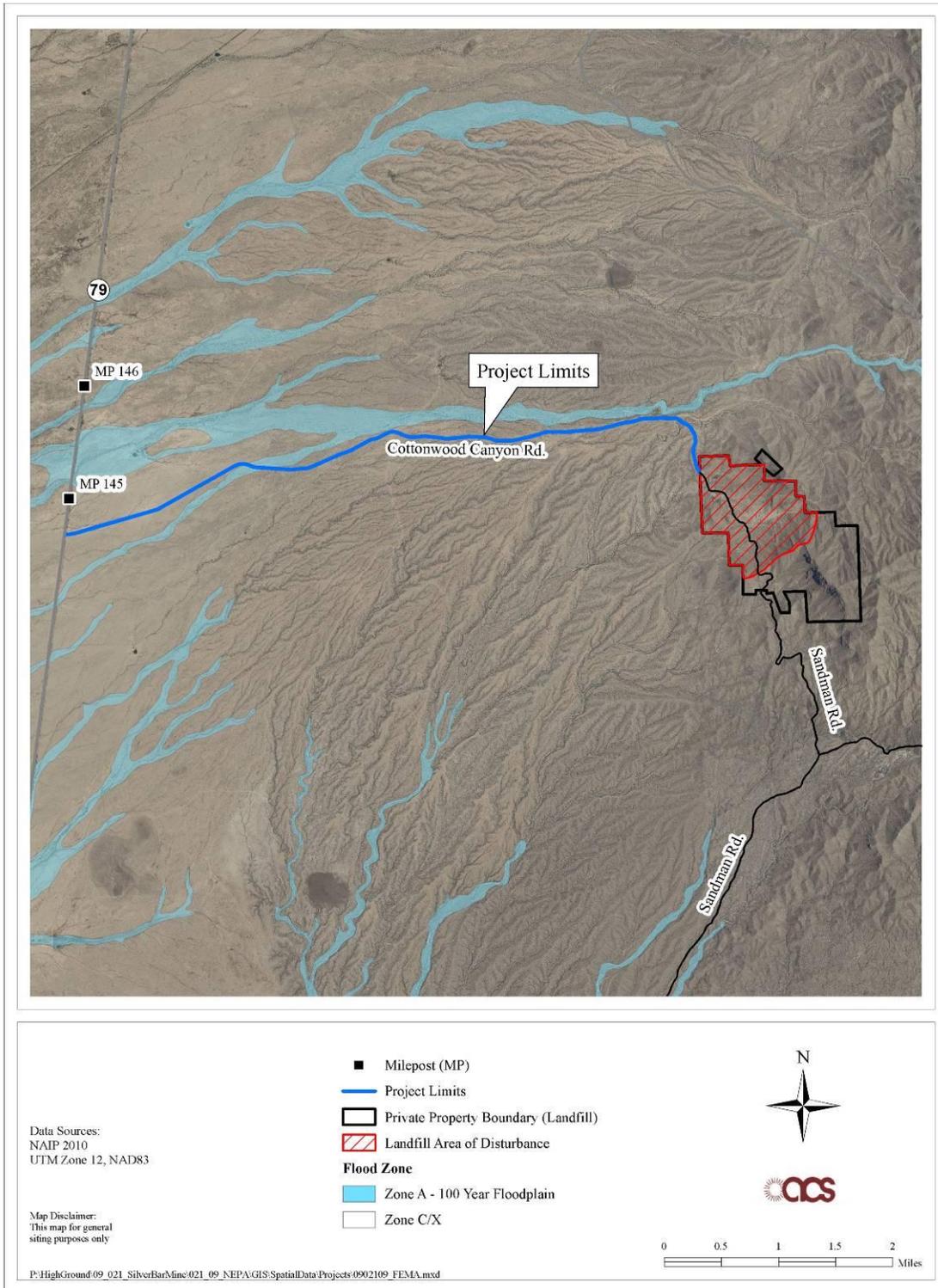


Figure 11. Floodplain Map

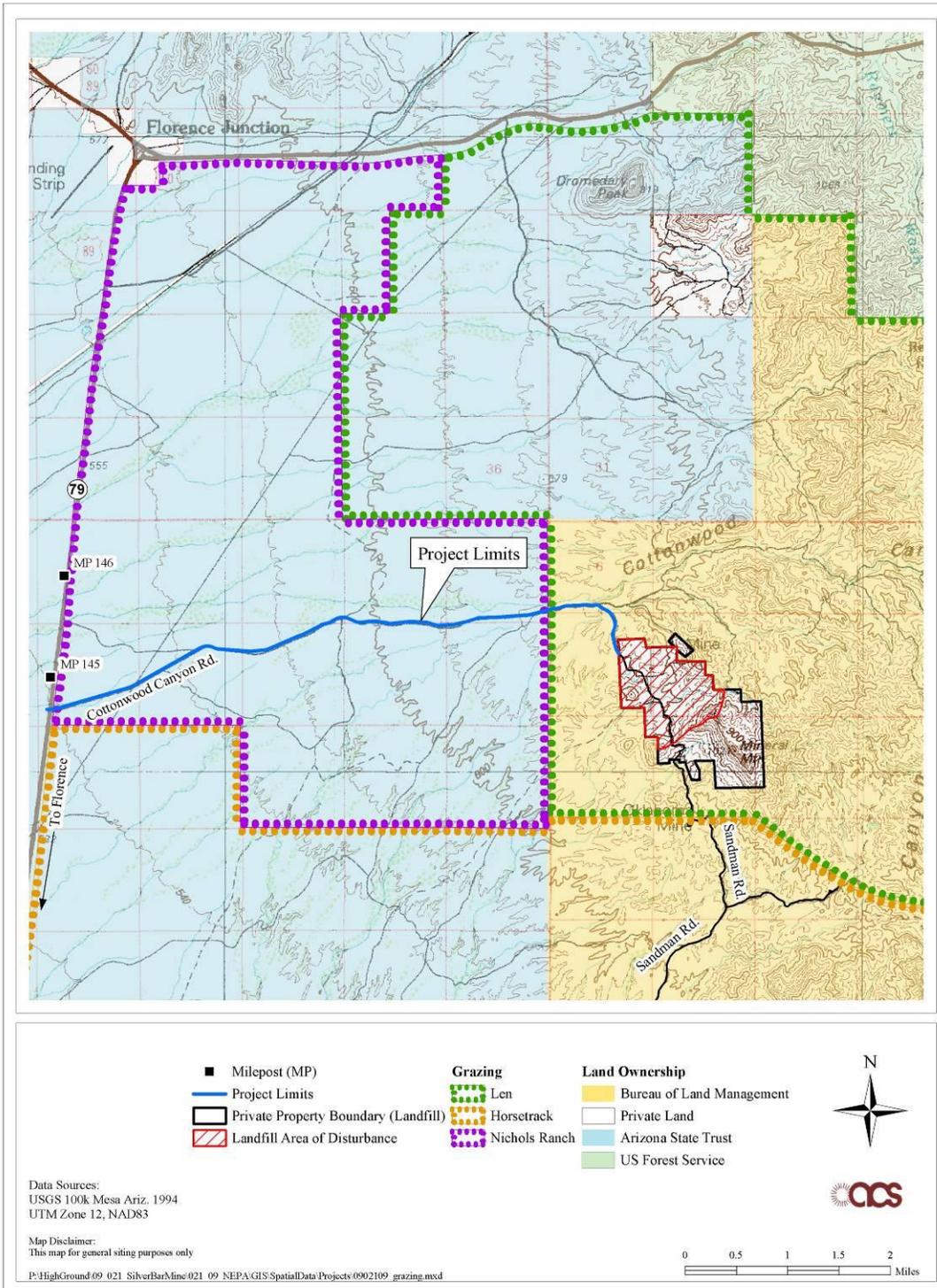


Figure 12. Grazing Allotment Map

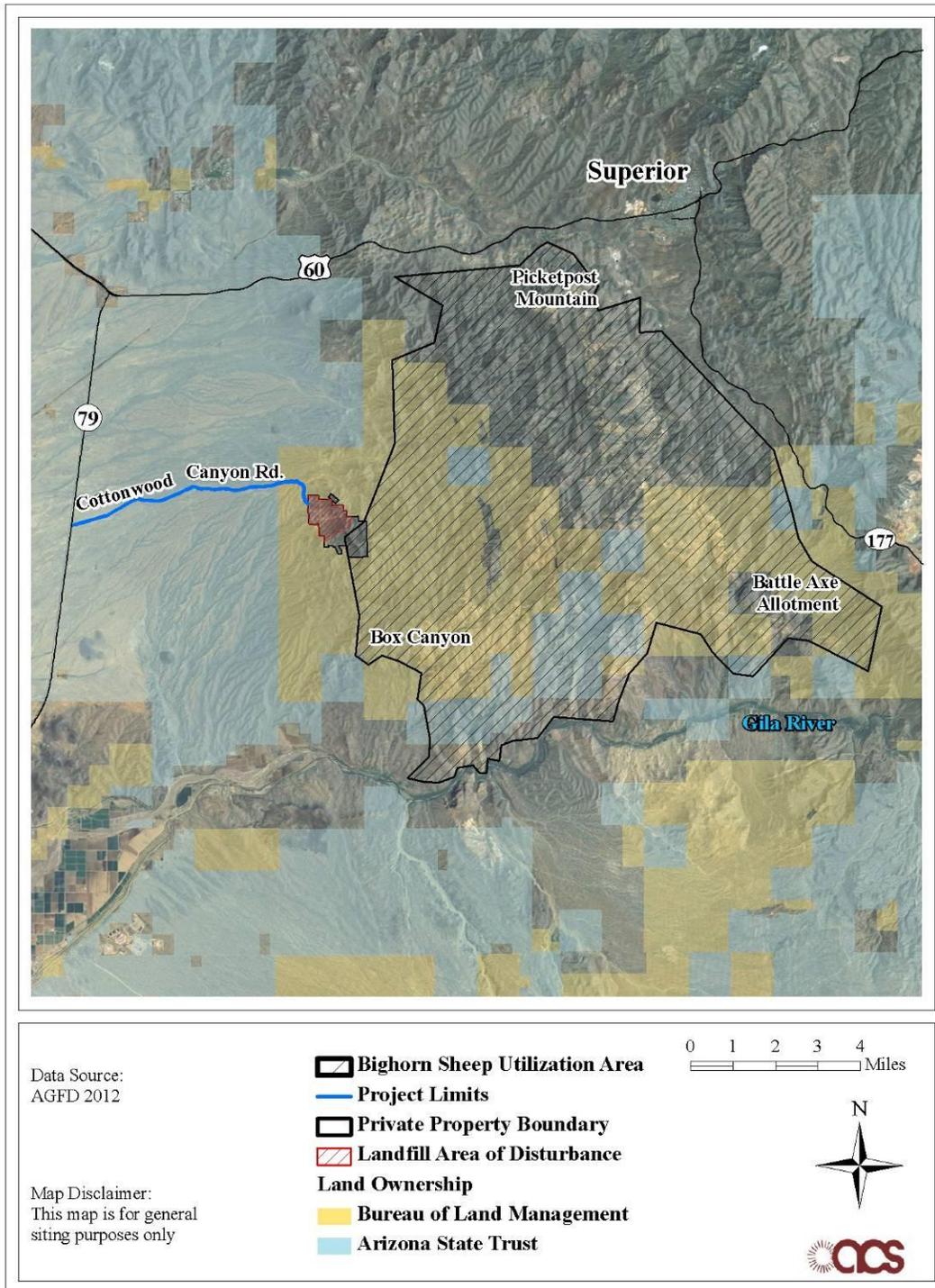


Figure 13. Bighorn Sheep. Bighorn Sheep Utilization Area

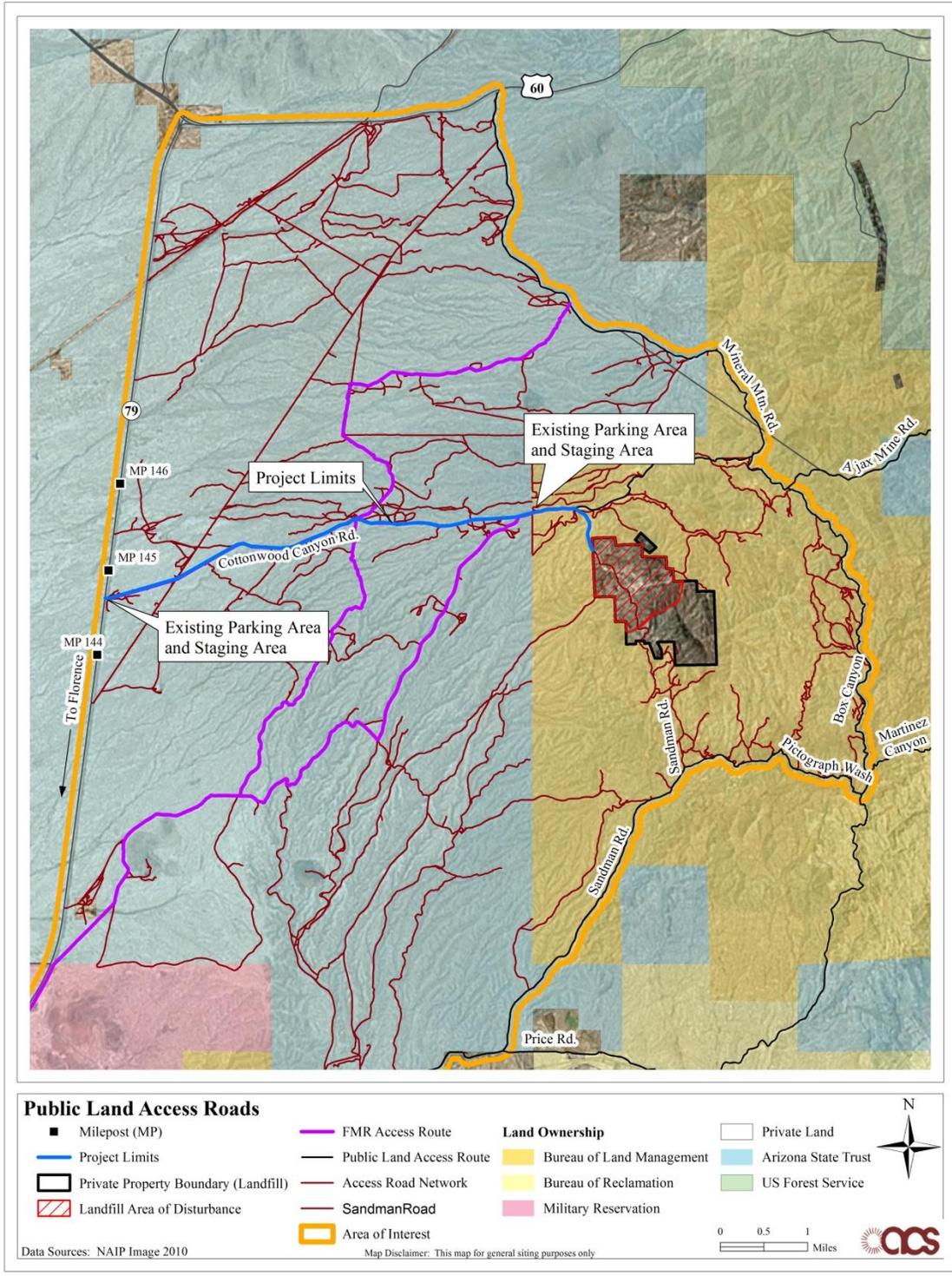


Figure 14. Public Lands Access Roads

Public Recreational Vehicle Parking

Silver Bar Mine Regional Landfill

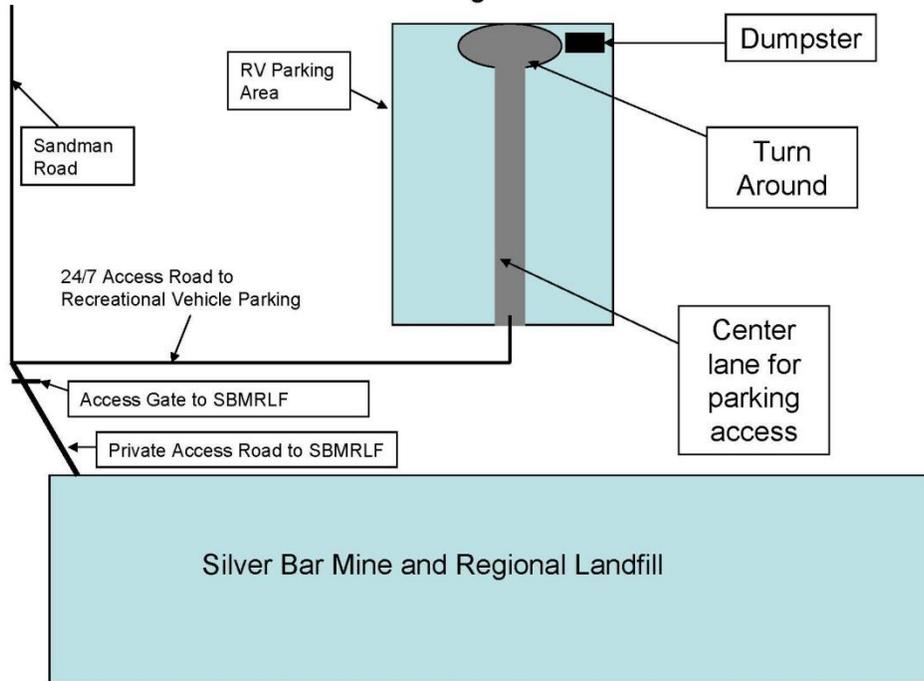


Figure 15. Public Recreational Vehicle Parking

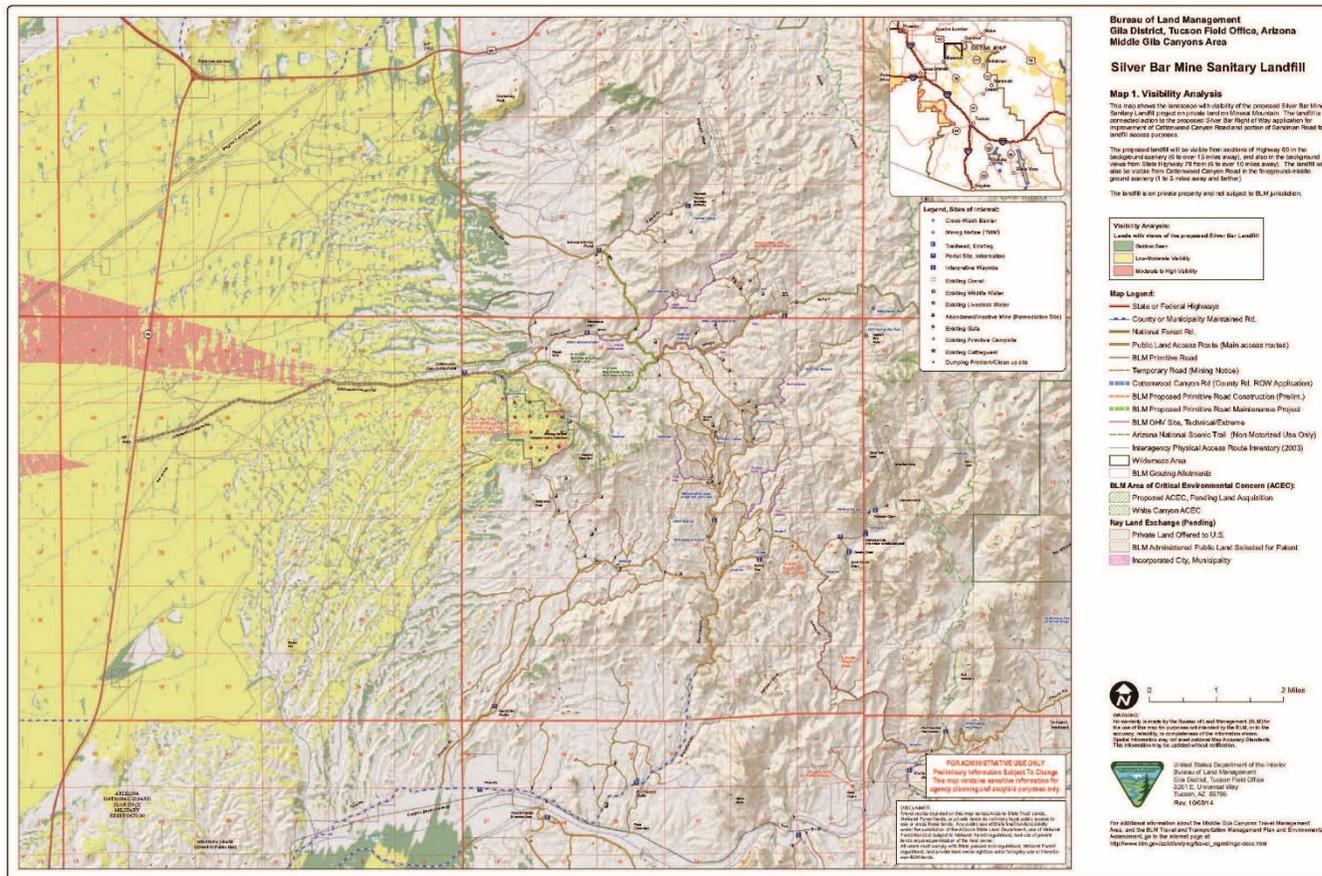


Figure 17. Visibility Analysis

